FORT HALSTEAD, SEVENOAKS

Environmental Statement Addendum

Volume I: Non-Technical Summary, Main Text & Figures

Merseyside Pension Fund

June 2020

Merseyside
PENSION FUND

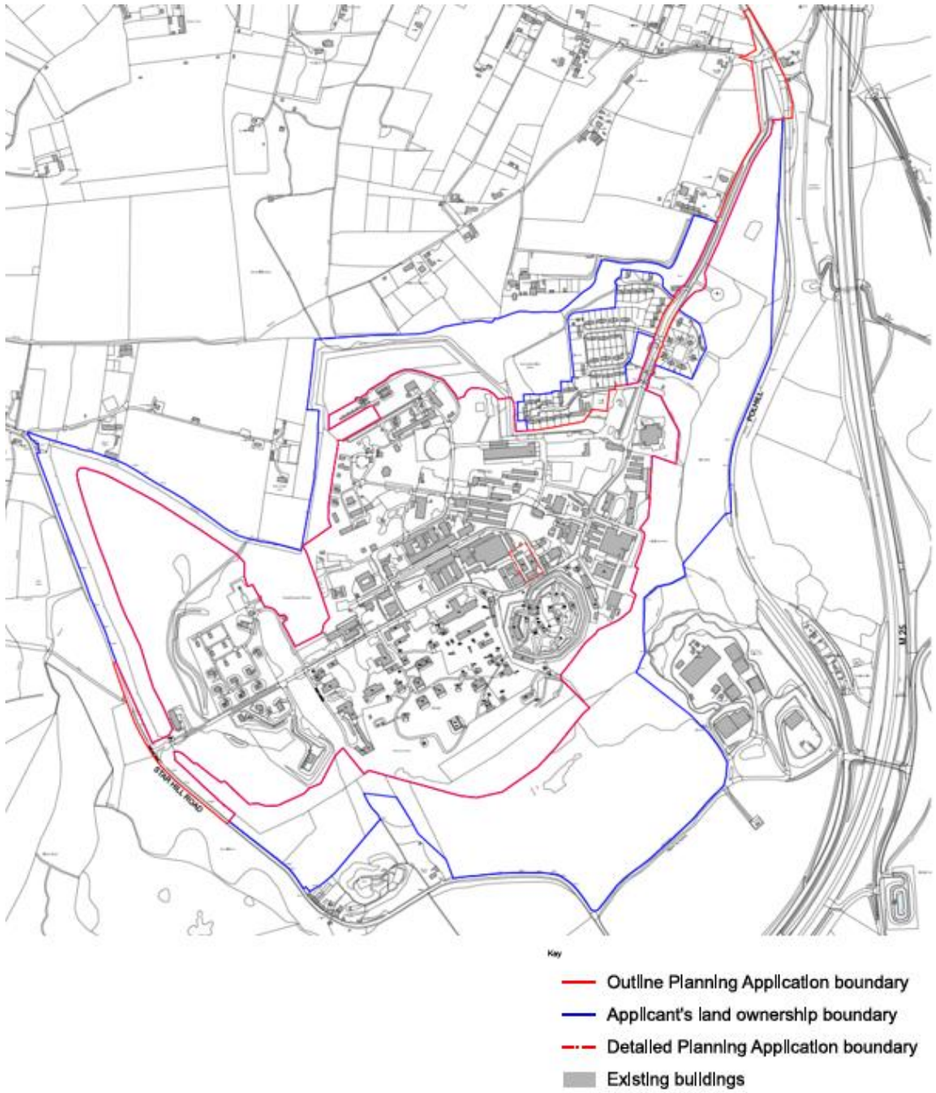
CBRE

NON-TECHNICAL SUMMARY

INTRODUCTION

Merseyside Pension Fund ("the Applicant") are submitting design amendments to the existing planning application (Application Reference: 19/05000/HYB) to Sevenoaks District Council (SDC) for the redevelopment of Fort Halstead in Halstead, Sevenoaks ("the application site"). The accompanying Environmental Statement (ES) was submitted in September 2019 ("2019 ES"). The application site is shown in **Figure 1.1** below.

Figure 1.1
Application Site



The application site already has outline planning permission (Application Reference: 15/00628/OUT) for a mixed-use development comprising employment and residential floorspace, with up to 450 dwellings, granted in December 2015.

The hybrid planning application that was submitted in September 2019 proposed up to 750 dwellings, in line with SDC's expectations that the application site was able to deliver a greater quantum of housing to meet local demand as identified in the draft allocation in Sevenoaks Local Plan (2015-2035). Based on ongoing consultation with SDC and other stakeholders the application parameters have been amended. Key design changes include a reduction in the extent of residential development, and subsequent reduction in overall dwelling numbers.

This document is an Addendum to the 2019 ES which was submitted under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (herein 'EIA Regulations 2017'). This document should be read in conjunction with the Non-Technical Summary from the 2019 ES.

An EIA is a process to ensure that planning decisions are made with full knowledge of a proposed development's likely significant environmental effects and that any adverse effects are prevented, reduced or offset, while beneficial effects are enhanced.

The ES is one of the outcomes of the EIA process and comprises a series of studies, surveys and consultations that have informed the design of the proposed development to seek to minimise its environmental effects and to identify measures to ensure that the proposed development is built and 'operated' in a sustainable way.

NON-TECHNICAL SUMMARY

The Non-Technical Summary is intended to provide members of the public, and any other interested parties without specialist technical knowledge, sufficient information to understand the proposals and the principal findings of the EIA, as presented in the ES.

THE PROPOSED SCHEME CHANGES

The amended proposed development description is as follows:

Hybrid application comprising, in outline: development of business space (use classes B1a/b/c) of up to 27,773 sqm GEA; works within the X enclave relating to energetic testing operations, including fencing, access, car parking; development of up to 635 residential dwellings; development of a mixed use village centre (use classes A1/A3/A4/A5/B1a/D1/D2); land safeguarded for a primary school; change of use of Fort Area and bunkers to Historic Interpretation Centre (use class D1) with workshop space and; associated landscaping, works and infrastructure. In detail: demolition of existing buildings; change of use and works including extension and associated alterations to buildings Q13 and Q14 including landscaping and public realm, and primary and secondary accesses to the site.

The following amendments to the scheme since the submission of the 2019 are:

- Reduction of proposed residential units from up to 750 to up to 635;
- Reduction in residential floorspace to from 68,762 m^2 to 60,538 m^2;
- Alteration of housing mix with a reduction in the number of flats and increase in the number of 3-bed houses;
- Increase in B Class employment floorspace by 115 m^2 (the floorspaces of existing buildings Q13 and Q14 have increased to take account of the basement levels);
- Removal of existing helipad; and
- Inclusion of a new bus loop design on Crow Drive near the Star Hill entrance (the open space within the total site has decreased from 94.00 ha to 93.42 ha).

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Varied Plans

The revised scheme is set out in the following plans:

Parameter

- Land Use & Green Infrastructure Plan – Drawing No. 00556I_PP01 Rev. D2
- Building Heights Plan – Drawing No. 00556I_PP02 Rev. D2
- Access & Movement Plan – Drawing No. 00556I_PP03 Rev. D2
- Demolition Plan – Drawing No. 00556I_PP04 Rev. D2

Detailed

- General Arrangement Hard & Softworks – Drawing No. 6699_101 i
- Village Centre Q14-13 Bin & Cycle Store – 00556J_Q14-13_S19 Rev. P2

Other

- Illustrative Masterplan – Drawing No. 00556I_MP01 Rev. D2
- Site Location Plan – Drawing No. 00556I_S01 Rev. P2
- Indicative Density Plan – Drawing No. 00556I_S02 Rev. P2
- Indicative Phasing Plan – Drawing No. 00556I_SK03 Rev. P2

ENVIRONMENTAL STATEMENT ADDENDUM

This ES Addendum has considered the proposed changes to the scheme and whether the proposals are likely to result in the findings of the 2019 ES assessment changing such as new significant environmental effects being identified that may require additional mitigation.

As such, this ES Addendum follows a similar structure as the original Environmental Statement as follows:

- Volume I
  - ES Addendum Non-Technical Summary (this section);
  - Main Text of the Assessment;
  - Relevant Figures provided at the rear of the volume (where these are not contained within the main text); and
- Volume II of the ES Addendum provides the Technical Appendices.

In considering whether technical areas may be scoped out from the ES Addendum, consideration has been given to the following criteria:

1. The relevance and scale of the proposed development variations;
2. Interim updates in legislation, policy, or guidance;
3. The validity of the baseline data; and
4. The continued applicability of the previously identified and conditioned mitigation measures.

Where it has been considered that against the above four criteria no significant changes to the previously assessed significant effects would take place, the technical area has been scoped out of the assessment.

Scoped Out Technical Areas

The following technical areas have been scoped out of the assessment:

- Socio-Economics;
- Air Quality;
- Ground Conditions & Contamination; and
- Water Resources & Flood Risk.

This does not mean that these technical areas have not been considered. Each has been carefully reviewed in the context of the four criteria and it is considered that the findings of the 2019 ES would not be altered by the proposed scheme changes. Therefore, the 2019 ES findings are considered to remain valid.

Assessed Technical Areas

The following technical areas have been re-assessed:

- Landscape & Visual;
- Historic Environment & Built Heritage;
- Biodiversity (including Ecology & Arboriculture);
- Transportation & Access; and
- Noise & Vibration.

Each technical assessment chapter provides a detailed appraisal of the potential and likely significant effects of the proposed development during construction and operation. The evaluation of significance is based on the relationship between two factors:

- The value or sensitivity of the affected receptor; and
- The nature, magnitude or severity of the impact (i.e. the predicted change taking place to the environment).

Further details regarding the ES Addendum findings for each of these technical areas are provided subsequently.

Landscape & Visual

The conclusions within the 2019 ES have only slightly altered for one visual receptor (Crow Drive, Armstrong Close and Fort Road) during the construction phase, with the effect changing from moderate adverse in the 2019 ES to moderate-minor adverse in this ES Addendum.

This assessment describes the existing landscape and views; considers their sensitivity to change; identifies the changes likely to arise from the proposed development; and provides judgements of the significance of effects arising.

Inevitably, there would be changes to the character and visual resource of the application site itself as a result of the construction activities and these effects are considered to be adverse. However, given the screening properties of perimeter vegetation, impacts would be localised and construction activity would not be intrusive in the surrounding landscape. The removal of buildings currently visible above and beyond the perimeter vegetation and the partial removal of perimeter security fencing is considered beneficial. Any construction effects would be temporary in nature, and overall no significant impacts to the landscape and visual resource are therefore concluded during the construction phase.

The operational development is considered to improve the visual amenity and character of the application site. The majority of the utilitarian structures, workshops, car park and disturbed land that currently dominate the application site being will be removed and replaced by residential and employment-built form, punctuated and

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intertwined by new areas of green infrastructure. In addition, the visual amenity of adjacent Public Rights of Way would be substantially improved by the removal of the vast majority of the existing perimeter security fencing. The application site will become publicly accessible, giving people the opportunity to experience the new areas of public realm, open space and heritage features.

Beyond the application site, based on the maximum spatial and height parameters, the proposed development would be generally contained by the perimeter vegetation. In short range views to the north, around Otford Lane, certain parts of the employment area / village centre may just break above the tree line, although would not be a prominent feature in view and would be consistent with the baseline views of existing buildings and structures protruding above the perimeter woodland. To the east and west, along Pole Hill and Star Hill respectively, the proposed development is generally screened by the perimeter woodland, with the exception of minor changes to the existing access points into the site. From the south, at the base of the scarp slope and around the M25 / A224, the proposed development will not be visible, set back from the scarp slope and sitting below the tree line.

In middle to longer distance views to the east and south, from areas of higher ground around Otford and Sevenoaks, the proposed development would be generally screened by the perimeter woodland. Any visible structures that just break above the tree line would be indiscernible at this distance and there would be no perceptible change to baseline views.

It should also be noted that the assessment of effects is based on maximum building height parameters and does not consider the effects of individual building design, which would result in variations to height and roofscape and which would inevitably further reduce any visual impact.

There is likely to be some beneficial changes to the night time environment as a result of the proposed development which this ES Addendum provides further information on. This is through the use of modern luminaires, which provide lighting to the required standards whilst reducing light spill / glare. There is still likely to be some sky glow, but this will become more of a 'whiter' aura rather than 'orange' aura due to the use of LED lamp sources, the latter being considered to be more obtrusive. Furthermore, a number of existing lighting installations will be removed, particularly security lighting at the West Gate / Star Hill Road.

Overall is it concluded that the proposed development will not result in any significant adverse landscape and visual effects.

The Landscape & Visual Impact Assessment (LVIA) for the permitted development also concluded that there would be no significant adverse landscape and visual effects, and that the scheme would improve the visual amenity and character of the application site. With particular reference to visual effects, it was concluded that while certain the vast majority of the built development would be screened by the perimeter woodland, the proposed energy centre flue would be a visible feature, extending well above the tree-line.

When considering the effects of the operational development against the future baseline of the permitted development (of up to 450 dwellings and employment uses) it is considered that there will be no discernible changes to landscape character and views, with the proposed development confined to areas of previously developed land and not exceeding the building height parameters of the permitted scheme. However, the exclusion of the flue zone as part of the proposed development is beneficial overall, removing the element of the permitted scheme that was most visually prominent.

Historic Environment & Built Heritage

The conclusions within the 2019 ES have not changed. The changes to the parameter plans demonstrate that the land use and building heights will not alter the settings of the identified built heritage and archaeological assets. In addition, as the proposed demolition and proposed uses for the retained buildings remains unchanged the effects stated within the 2019 ES remain valid.

The proposed development will include the demolition and total loss of four non-designated heritage assets of low sensitivity, resulting in a moderate adverse significance of effect. This will be mitigated by building recording to provide additional information regarding their historic development, architectural interest and the development of the wider Fort Halstead complex. This will not only assist in off-setting the harm caused by the loss of these buildings, but it will also potentially enhance our understanding of the extant designated and non-designated heritage assets within the site.

The proposed development will also include the demolition of other buildings historically associated with the built heritage assets within the application site. This loss of historic context and functional relationships will result in a major adverse significance of effect to Fort Halstead, a scheduled monument. This will arise due to the loss of historic context, with these later buildings helping to demonstrate the evolution of Fort Halstead during the twentieth century and its transition from a fortification to a centre of research and development associated with rocketry development and the construction of the atomic bomb. There will also be moderate adverse or minor adverse significance of effect to those listed buildings within the application site for the same reason.

The proposed development includes a number of changes from the extant planning permission. The relevant changes for built heritage include an increased quantum and density of new residential development and a reduction in the number of existing buildings to be demolished. There are also minor changes to the layout of the scheme to create new views to the retained designated and non-designated heritage assets. Together these changes will not affect the overall impacts that the heritage assets will experience. The 2015 ES used a different methodology to assess effects and grouped the relevant heritage assets geographically, rather than by their overall level of importance. As a result, some of the overall effects predicted in the 2019 ES (and this ES Addendum) are higher than those predicted in 2015. However, overall the nature of the impacts and the significance of effect is not predicted to change for the current scheme when compared with the extant permission.

However, this will be partly offset by the provision of new viable uses for these buildings, and an increased appreciation of these buildings through the creation of public access, the creation of new views of the buildings and a heritage trail. This will be enhanced by the building recording undertaken as part of the proposed mitigation which will provide additional information regarding the buildings and the historic development of the wider site. Together these design and mitigation measures will assist in better revealing the importance of the heritage assets and allowing them to be accessed, experienced and understood by the general public, which has not been possible before. The opening of new views and integration within a heritage trail will also allow for a greater appreciation of their architectural interest. Changes to the fabric of the buildings offer the potential for enhancement and their long-term conservation.

A programme of archaeological monitoring and recording during ground intrusive works (including for example the excavation of attenuation ponds, ecological mitigation sites, service trench excavation, grubbing out of foundations where buildings are being demolished etc.) is proposed. It is currently understood that the development would be undertaken in phases between 2020-2031. The scope and programme of the appropriate archaeological phasing of works (such as watching briefs, evaluations and strip, map and record excavations) would need to be confirmed in consultations with the Senior Archaeological Officer of the Kent County Council Heritage & Conservation (KCCHC) team. The methodology for any archaeological works would be subject to an Archaeological Written Scheme of Investigation for the approval of KCCHC.

Since the 2019 ES, further consultation has been undertaken with the KCCHC team to agree mitigation relating to the historic landscape. To mitigate the potential for truncation and/or complete removal of elements of the historic landscape, a programme of historic landscape survey will be completed prior to the commencement of intrusive works. This would involve: survey and assessment in accordance with a specification and written timetable which has been submitted to and approved by Heritage Conservation; and a statement of safeguarding measures to ensure preservation in situ of important historic landscape features and/or further historic landscape recording.

It is considered that there may be as yet unknown buried archaeological remains associated with the Scheduled Monument within the site which could be subject to physical impacts due to the construction phase. Due to their

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direct association with the Scheduled Monument, such remains would likely be considered to be of equal value to the monument the impact is considered moderate adverse in significance. The impact to the unknown buried archaeological remain associated with the rest of the site is considered to be minor adverse in significance.

The fort would be converted to a heritage interpretation centre and there will be some vegetation removal which will clear views which would have historically been open, the overall residual impact is considered to be beneficial. The proposed development could have a physical impact on a part of the suspected prehistoric trackway, especially where construction for residential housing is required in the current grassland area within the north-eastern extent of the site. Although the part of the trackway that be affected by the works within the site is relatively small in relation to its projected entire route, the partial loss of the asset would still need to be considered. The impact on the trackway is considered minor adverse in significance.

The change in historic landscape character of the site is considered moderate adverse in significance.

No ongoing loss is anticipated after a programme of historic landscape survey, followed by archaeological monitoring and recording during ground intrusive works, and the subsequent construction phase have been completed. Following implementation of this mitigation all archaeological receptors are anticipated to result in negligible effects.

Biodiversity (including Ecology & Arboriculture)

The conclusions within the 2019 ES have not changed. The main updates since the 2019 ES was submitted is that an updated badger survey was undertaken in March 2020 and an outline Landscape & Environmental Management Plan (LEMP) has now been produced.

The assessment has been prepared by Middlemarch Environmental Ltd to provide an overview of any significant effects, both beneficial and adverse, on ecological features, which may result during the construction and operational phases of the proposed development. The chapter has been produced based on current best practice guidance for assessing ecological impacts for EIA projects, as defined by Chartered Institute of Ecology and Environmental Management (CIEEM, 2018). The baseline ecological conditions at the site were identified during a suite of baseline ecological survey work completed by Middlemarch Environmental Ltd the period over 2018-2020.

In the absence of mitigation, the main predicted construction phase effects are associated with direct habitat loss and potential displacement or disturbance of existing species on site. A Framework Ecological Mitigation Strategy (FEMS) has been produced, outlining appropriate avoidance, mitigation, compensation and enhancement measures which would ensure that the favourable conservation status of ecological features is maintained throughout the construction and operational phases of the development. The construction phase of the development will be controlled by a Construction Ecological Management Plan (CEcMP) which will be informed by the FEMS and will include best practice methods to avoid any significant ecological impacts, e.g. installation of protective fencing and implementation of pollution prevention measures. Natural England Development Licences will be applied for as required, to prevent breaches of legislation with respect to bats, badgers and dormice. A Reptile Mitigation Strategy will be incorporated into the FEMS and will detail suitable measures to ensure that there are no breaches of legislation with respect to reptiles.

Predicted operational phase effects include degradation of nature conservation sites and habitats due to recreational disturbance, loss of habitat value due to inappropriate management and disturbance to species from lighting and traffic movement. Proposed mitigation to address these predicted effects includes the implementation of the LEMP, appropriate post-development monitoring of habitats and species, sensitively designed lighting proposals and implementation of a speed limit to reduce the risk of road mortality to species such as badgers.

Provided that all recommended avoidance and mitigation measures are implemented, most predicted ecological effects can either be avoided entirely or reduced to negligible significance. The exception during the operational phase of the proposed development is the increased predation of reptiles, dormice and nesting birds by domestic pets, which is anticipated to result in an adverse residual effect on populations of these species groups at the Local (Site) level.

Transportation & Access

The conclusions within the 2019 ES have not changed, even with the changes to the driver delay section of this ES Addendum.

This assessment considers the impact of traffic in terms of severance, fear and intimidation, pedestrian amenity, pedestrian delay, accidents and safety and driver delay as outlined within the Institute of Environmental Management and Assessment (IEMA) guidelines. These have been assessed in the construction (2023) and during the future operation (2035) scenarios. An alternative baseline scenario has also been added to assess the impact of the development against the Certificate of Lawfulness of Existing Use or Development (CLEUD). The CLEUD has therefore been included within the baseline, removing the OPP from this baseline scenario.

The assessment of all the IEMA criteria found that during the construction period, the construction vehicles anticipated for the development are to have a negligible effect on the local network links assessed. The same assessment has been undertaken for the operational traffic flows. The 2035 with development scenario has been compared against the 2035 Baseline. The assessment showed that the proposed development is anticipated to have a negligible effect on the development on any of the criteria set out within the IEMA guidance. Some links even experience a beneficial effect due to the development. The assessment found that for the alternative baseline scenario the links experience a reduction in the traffic in comparison to the CLEUD and that the criteria set out within the IEMA guidance show that the development would have a negligible effect in comparison to the CLEUD. A Construction Environmental Management Plan (CEMP) has been proposed to support the construction period to ensure that there is minimal disturbance due to the construction. A Travel Plan has been proposed to reduce the number of vehicles generated by the site which will have a beneficial effect when compared to the 2035 full occupation.

On the basis of the assessments in this ES Addendum, it is considered that the proposed development will have a negligible effect on all links considered.

Noise & Vibration

The conclusions within the 2019 ES have not changed. The main updates since the 2019 ES was submitted is that the assessment has been amended with the updated traffic data and, in order to address the remainder of the comments received from the Environmental Health Officer (EHO) at SDC, this ES Addendum includes a detailed assessment of noise from Trace Mineral Explosives at QinetiQ.

Baseline noise survey data has been used to model the site using acoustic software CadnaA and noise levels predictions at receptor locations have been derived from the models.

The spatial extent of the assessment area covers the site and also the surrounding regions where existing noise sensitive receptors have been identified for assessment.

Construction and demolition effects have been assessed in accordance with current guidance. Noise levels associated with demolition and construction activity (the construction phase) at the proposed development are predicted to be of moderate adverse significance in the short term at the closest noise sensitive receptors, when activity takes place at the closest site boundary. As activity moves around the proposed development site, and distance between activity and sensitive receptor is increased, the significance of impact is likely to be reduced to negligible. The appointed demolition and construction contractors shall undertake works in accordance with an approved CEMP and noise from construction works will be regulated by standard methods of best practice and mitigation measures where appropriate.

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Road traffic noise has been assessed using CadnaA acoustic modelling software in conjunction with predicted traffic flows for the development. Noise impacts associated with development generated road traffic are predicted to be negligible.

Road traffic noise associated with construction and demolition is predicted to have a negligible impact at noise sensitive receptors.

Operational noise associated with trace mineral detonations at adjacent land (occupied by DSTL and QinetiQ) has been assessed in further detail. Noise impact at Noise Sensitive Receptors is predicted to be negligible.

Noise associated with proposed fixed mechanical plant and building services has been assessed based on existing background noise levels at the site. Appropriate plant noise limits have been provided to ensure no significant noise effect at proposed or existing sensitive receptors. Noise impact at Noise Sensitive Receptors is predicted to be negligible.

Providing appropriate mitigation is implemented, the proposed development is considered to meet the objectives of Sevenoaks Allocations and Development Management Plan, together with overarching policy and current acoustic guidelines.

CONCLUSIONS

With the exception of the slight improvement of one effect described above, all the residual effects of the scheme, as reported in the 2019 ES, are considered to remain valid in the context of the proposed scheme amendments.

CONTENTS

FIGURES

1 INTRODUCTION

1.1 SCHEME BACKGROUND & CONTEXT

Merseyside Pension Fund ("the Applicant") are submitting design amendments to the existing planning application (Application Reference: 19/05000/HYB) to Sevenoaks District Council (SDC) for the redevelopment of Fort Halstead in Halstead, Sevenoaks ("the application site"). The accompanying Environmental Statement (ES) was submitted in September 2019 ("2019 ES"). The application site is shown in **Figure 1.1**.

The application site already has outline planning permission (Application Reference: 15/00628/OUT) for a mixed-use development comprising employment and residential floorspace, with up to 450 dwellings, granted in December 2015.

The hybrid planning application that was submitted in September 2019 proposed up to 750 dwellings, in line with SDC's expectations that the application site was able to deliver a greater quantum of housing to meet local demand as identified in the draft allocation in Sevenoaks Local Plan (2015-2035) [1]. Based on ongoing consultation with SDC and other stakeholders the application has been amended. Key design changes include a reduction in the extent of residential development, and subsequent reduction in overall dwelling numbers.

The proposed variances to the scheme seek to achieve the following:

- Reduction of proposed residential units to up to 635;
- Increase in B Class employment floorspace by 115 m^2;
- Removal of existing helipad; and
- Inclusion of a new bus loop design on Crow Drive near the Star Hill entrance.

The full variations are set out within *Chapter 3 Application Site & Proposed Development*.

The purpose of this ES Addendum is to update and provide supplementary environmental information to the 2019 ES in respect of the proposed development variations; as such this ES Addendum should be read in conjunction with the 2019 ES which is provided at **Appendix 1.1**, Volume II of this ES Addendum. This approach is further described in *Chapter 2 EIA Methodology – ES Addendum*.

The 2019 ES was submitted under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) [2] (herein 'EIA Regulations 2017').

An EIA is a process to ensure that planning decisions are made with full knowledge of a proposed development's likely significant environmental effects and that any adverse effects are prevented, reduced or offset, while beneficial effects are enhanced.

The ES is one of the outcomes of the EIA process and comprises a series of studies, surveys and consultations that have informed the design of the proposed development to seek to minimise its environmental effects and to identify measures to ensure that the proposed development is built and 'operated' in a sustainable way.

This ES Addendum has considered the proposed changes to the scheme and whether the proposals are likely to result in the findings of the 2019 ES assessment changing such as new significant environmental effects being identified that may require additional mitigation.

1.2 PLANNING DOCUMENTATION

This ES Addendum is one of a number of amended documents which have been submitted in support of the hybrid planning application. All of the documents that have been submitted are listed in **Table 1.1**.

Table 1.1

Amended Documents Submitted with the Planning Applications

TITLE
Site Location Plan
Illustrative Masterplan
Indicative Density Plan
Indicative Phasing Plan
Parameter Plans:
■ Land Use & Green Infrastructure Plan
■ Building Heights Plan
■ Access & Movement
■ Demolition Plan
Detailed Plans
■ General Arrangement Hard & Softworks
■ Village Centre Q14-13 Bin & Cycle Store
Design & Access Statement
Design Principles Document
Cover Letter
Community Infrastructure Levy Form
Planning Statement Addendum (including S106 Heads of Terms)
Statement of Community Involvement
AONB Report
Affordable Housing and Viability Statement also addressed within Planning Statement

The following documents, which were submitted alongside the 2019 ES, have not been re-provided as part of the revised application as it is considered the documents remain valid:

- Economic Statement;
- Energy Statement;
- Sustainability Statement;
- Utilities & Infrastructure Deliveries Statement; and
- Land Stability Report.

1.3 ENVIRONMENTAL IMPACT ASSESSMENT

The purpose of EIA [4] is:

"to protect the environment by ensuring that a local planning authority when deciding whether to grant planning permission for a project, which is likely to have significant effects on the environment, does so in the full knowledge of the likely significant effects, and takes this into account in the decision making process"

The product of the EIA process is an ES. Regulation 2(1) of the EIA Regulations 2017 states that an ES has the meaning given by Regulation 18(3) which defines it as a statement that at least includes:

a. a description of the proposed development comprising information on the site, design, size and other relevant features of the development;

b. a description of the likely significant effects of the proposed development on the environment;

c. a description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;

d. a description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment;

e. a non-technical summary of the information referred to in sub-paragraphs (a) to (d); and

f. any additional information specified in Schedule 4 of the EIA Regulations 2017 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected.

The specified information in Schedule 4 is replicated in **Table 1.2**, which also indicates where this information has been provided within this ES.

INTRODUCTION

Table 1.2
Specified Information within Schedule 4

SPECIFIED INFORMATION	WHERE PROVIDED
1. Description of development, including in particular:	
a. a description of the location of the development;	**Vol I, Ch 3**
b. a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases;	**Vol I, Ch 3**
c. a description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used;	**Vol I, Ch 4 – 9; Vol II**
d. an estimate, by type and quantity, of expected residues and emissions such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases.	**Vol I, Ch 4 – 9; Vol II**
2. A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.	**Vol I, Ch 3**
3. A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.	**Vol I, Ch 4 – 9; Vol II**
4. A description of the factors specified in Regulation 4(2) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.	**Vol I, Ch 4 – 9; Vol II**
5. A description of the likely significant effects of the development on the environment resulting from, inter alia:	
a. the construction and existence of the development, including, where relevant, demolition works;	**Vol I, Ch 4 – 9; Vol II**
b. the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;	**Vol I, Ch 4 – 9; Vol II**
c. the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;	**Vol I, Ch 4 – 9; Vol II**
d. the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);	**Vol II, Ch 4 – 9; Vol II**
e. the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;	**Vol I, Ch 4 – 9; Vol II**
f. the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;	**Vol I, Ch 4 – 9; Vol II**
g. the technologies and the substances used.	**Vol I, Ch 4 – 9; Vol II**
The description of the likely significant effects on the factors specified in Regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development. This description should take into account the relevant environmental protection objectives established at the national level.	**Vol I, Ch 4 – 9; Vol II**
6. A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.	**Vol I, Ch 4 – 9; Vol II**
7. A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.	**Vol I, Ch 4 – 10; Vol II**
8. A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.	**Vol I, Ch 4 – 9; Vol II**
9. A non-technical summary of the information provided under paragraphs 1 to 8.	**Vol I**
10. A reference list detailing the sources used for the descriptions and assessments included in the environmental statement.	**Vol I, Ch 1 – 11**

Source: EIA Regulations 2017

1.4 THE STRUCTURE OF THE ES

The 2019 ES comprises three separate parts:

- **Volume I: Non-Technical Summary (NTS)**, which provides a concise, accessible overview of the proposed development and the findings of the EIA for a wide and non-technical audience.
- **Volume II: Main Volume** of the ES, which describes the proposals, the alternative options considered, the baseline environmental conditions, the likely significant effects of the proposed development alone and in combination with the cumulative schemes, the proposed mitigation measures and the residual environmental effects.
- **Volume III: Technical Appendices** containing technical reports that have informed the assessments contained in Volume II, as well as, where relevant, reports that deal with topics that have been 'scoped out' of the ES.

The purpose of this ES Addendum is to update, clarify and provide supplementary environmental information to the 2019 ES. As such, this ES Addendum follows a similar structure to the 2019 as follows:

- Volume I
  - ES Addendum Non-Technical Summary (this section);
  - Main Text of the Assessment;

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- Relevant Figures provided at the rear of the volume (where these are not contained within the main text); and
- Volume II of the ES Addendum provides the Technical Appendices.

A more detailed breakdown of the structure of the technical chapters can be found in *Chapter 2 EIA Methodology – ES Addendum*.

1.5 THE CONSULTANT TEAM

This ES Addendum has been written predominantly by CBRE Ltd (CBRE), with specific inputs from sub-consultants on several of the technical chapters. It has been prepared based on information provided by the Applicant, the architect, the civil engineer, and the planning consultant.

The members of the applicant's consultant team as well as the authors of the ES chapters and technical appendices are listed in **Table 1.3**.

Table 1.3
Consultant Team and ES Chapter Authors

ROLE	COMPANY
Client Project Team	
Client Representative	CBRE Capital Advisors
EIA Project Manager	CBRE EP&A
Planning Consultant	CBRE Planning
Architect	JTP
ES Addendum Chapter Authors	
Non-Technical Summary	CBRE EP&A
Introduction	CBRE EP&A
EIA Methodology – ES Addendum	CBRE EP&A
Application Site & Proposed Development	CBRE EP&A
Scoped Out Environmental Topics	CBRE
With the exception of:	
Socio-Economics	Hatch Regeneris
Air Quality	Waterman
Ground Conditions & Contamination	Hydrock
Water Resources & Flood Risk	Hydrock
Landscape & Visual	LDA Design
Historic Environment & Built Heritage	RPS/Waterman
Biodiversity	Middlemarch Environmental Ltd.
Transportation & Access	Stantec
Noise & Vibration	Hydrock
Cumulative Effects, Residual Effects, & Summary	CBRE EP&A
Appendix 1.1: 2019 Environmental Statement	CBRE EP&A and Various
Appendix 3.1: Arboricultural Impact Assessment Updated	Middlemarch Environmental Ltd.
Appendix 3.2: Summary Lighting Assessment 2020	Royal HaskoningDHV
Appendix 4.1: Surface Water & Foul Water Drainage Strategies	Hydrock
Appendix 5.1: Landscape & Visual Impact Assessment Report	LDA Design
Appendix 6.1: Conservation Management Plan	RPS
Appendix 7.1: Updated Ecological Walkover	Middlemarch Environmental Ltd.
Appendix 7.2: Updated Badger Survey (Confidential)	Middlemarch Environmental Ltd.
Appendix 7.3: Framework Ecological Mitigation Strategy (Confidential Appendix 2 Badger Appendix enclosed)	Middlemarch Environmental Ltd.
Appendix 7.4: Outline Landscape and Ecological Management Plan (Confidential Appendix 1 Badger Appendix enclosed)	Middlemarch Environmental Ltd.
Appendix 8.1: Transportation and Access Assessment Pre-Mitigation Tables	Stantec
Appendix 8.2: Updated Transport Assessment (Appendix N Framework Travel Plan enclosed)	Stantec
Appendix 9.1: Road Traffic Noise Assessment	Hydrock
Appendix 9.2: Trace Mineral Explosives Summary	Hydrock

1.6 DETERMINATION OF THE PLANNING APPLICATION

The Applicant has prepared and submitted to SDC six hard copies and an electronic copy[1] of the various volumes of this document that together constitute an ES under the EIA Regulations 2017. SDC will publicise the planning application on SDC's website:

https://pa.sevenoaks.gov.uk/online-applications/

Where required and possible, SDC will publicise the application, taking into consideration the temporary publicity requirements in response to the coronavirus (COVID-19) pandemic.

In accordance with Regulation 19(3), once it has received the ES, the local authority shall:

- send to the Secretary of State within 14 days of receipt of the statement, one copy of the statement, a copy of the application and of any documents submitted with the application;
- forward to any consultation body, which has not received a copy directly from the Applicant, a copy of the ES and inform any such consultation body that they may make representations; and
- send a notice to any person who is likely to be affected by, or has interest in, the application, who is unlikely to become aware of it by way of a site notice or by local advertisement.

Determination Period

As per Regulation 19(6), SDC shall not determine the EIA application until the expiry of 30 days from the last date on which a copy of the statement was served to any of the consultees. The determination must also be made after the expiry of 30 days from the display of the site notice, from the date of publication in the local newspaper and from the date of advertisement on the Council's website (whichever is later).

In contrast to a non-EIA planning application, which should be decided upon within either 8 or 13 weeks of submission, those applications accompanied with an ES are to be decided within 16 weeks of submission (Regulation 68(2)).

ES Copies & Comments

The ES and the planning application will be available to be viewed and downloaded at SDC's planning applications website:

https://pa.sevenoaks.gov.uk/online-applications/

For anyone without personal access to the internet, the documents can be viewed online at any of SDC's libraries through the computer/internet facilities available.

[1] This is the number of copies previously agreed to be required for them to fulfil their requirements under Regulation 16(2).

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Comments on the planning application and ES should be addressed to Alison Salter, Team Manager (Development Management), at the address below or may be made online via SDC's planning applications website.

Sevenoaks District Council

Council Offices

Argyle Road

Sevenoaks

TN13 1HG

Paper copies of this ES can be obtained for £500.00 (to reflect printing and distribution costs) by contacting:

CBRE Ltd - Environmental Planning & Assessment

St Martins Court

10 Paternoster Row

London

EC4M 7HP

Alternatively, an electronic copy of the ES can be obtained for £10.00 by contacting CBRE at the above address.

Charges for paper and electronic copies of the ES are made in accordance with Regulation 24 of the EIA Regulations 2017.

Alternative Formats

The text size used in this document has been chosen to cut down on the quantity of paper required in its production. A large text version of this document is available upon request. Please note that printing costs may vary from those stated above.

2 EIA METHODOLOGY – ES ADDENDUM

2.1 INTRODUCTION

This chapter sets out the various stages of the environmental assessment that have been undertaken and the issues that have been 'scoped in', 'scoped down' and 'scoped out' of consideration within this ES Addendum through informal consultation with SDC, the planning authority's selected external advisors, and statutory consultees. The chapter also sets out the general format of the technical chapters and the methodology used to assess the significance of environmental effects associated with the scheme.

2.2 SCREENING

Screening is the first stage of the EIA process. It establishes whether or not a development is 'EIA development' and therefore whether the planning application needs to be accompanied by an ES.

The 2019 ES was deemed to be EIA development in accordance with The Town and Country Planning (Environmental Impact Assessment) Regulations 2017. This was due to the proposed development falling under category 10(b) urban development projects within Schedule 2 of the EIA Regulations, and significantly exceeding the 1 hectare (ha) of 'non-dwelling house' urban development; the 150 dwellings; and the overall site area greater than 5 hectares thresholds.

Consequently, the Applicant has voluntarily submitted this ES Addendum and the 2019 ES to SDC. A request for a screening opinion was not submitted to SDC.

2.3 SCOPING

The Intended Focus of EIA

EIA is a process that should be focussed on the likely significant environmental effects of a proposed development. It is not intended to be a process to address all of the possible environmental effects. One of the main criticisms of current EIA practice is that the scope is often drawn too widely, which results in environmental statements which are unnecessarily long and are less useful for their intended purpose, i.e. to act as a decision-making tool.

"At its best, EIA helps to shape the design and siting of development such that social value to communities and broader economic value to investors can both be met, without eroding natural capital and pushing the boundaries of environmental limits – a tool that can truly support moves towards sustainability. However, the many competing demands can often serve to stifle the process, resulting in reams of information that mask the key environmental issues that need to be considered. (IEMA, 2011 [6])"

Request for a Scoping Opinion

Scoping is an important, though optional, exercise undertaken throughout the early stages of the EIA process. It involves determining the information that needs to be included in the ES and enables the environmental assessment to focus on key areas and avoid the unnecessarily complicated examination of minor issues.

As part of this scoping exercise undertaken prior to submission of the ES Addendum, it was set-out to SDC that the following topics would be 'scoped out' for further consideration in the ES Addendum and a technical summary would be provided:

- Socio-Economics;
- Air Quality;
- Ground Conditions & Contamination; and
- Water Resources & Flood Risk.

A detailed summary of the technical areas scoped out of the ES Addendum is provided in *Chapter 4 Scoped Out Environmental Topics*.

Furthermore, it was confirmed that the following topics would be 'scoped in' for further consideration and ES Chapter Addendums would be provided:

- Landscape & Visual;
- Historic Environment & Built Heritage;
- Biodiversity;
- Transportation & Access; and
- Noise & Vibration.

These chapters are contained within Chapter 5 to Chapter 9 of this volume of the ES Addendum.

2.4 PUBLIC CONSULTATION

No further public consultation events have taken place since submission of the 2019 ES.

2.5 SENSITIVE RECEPTORS

The sensitive receptors have remained consistent with the 2019 ES.

2.6 TEMPORAL SCOPE OF ASSESSMENT

The site enabling, demolition and construction works are anticipated to take place over an 11-year period, with site enabling anticipated to commence in 2020.

For the purposes of the ES, it has been assumed that the initial opening year is 2024 with full completion and operation of the development in 2031.

2.7 CUMULATIVE SCHEMES

In line with the 2019 ES, the Transport Assessment (TA), contained within **Appendix 8.2**, Volume II of this ES Addendum, has considered one cumulative scheme: West Kent Cold Store development (Ref. 09/02635/FUL). With the exception of the transport, air quality, and noise and vibration assessments, it has been considered to be already included within the baseline conditions of the remainder of the assessments.

No further cumulative schemes have been identified and no further schemes have been requested by SDC since the 2019 ES.

2.8 THE ENVIRONMENTAL STATEMENT

The proposed development variations have been considered in the context of the 2019 ES assessment scope. In the context of the consideration of the potential for significant environmental effects, whether technical areas are unaffected has been informed by the following aspects:

- The relevance and scale of the proposed development variations;
- Interim updates in legislation, policy, or guidance;
- The validity of the baseline data; and
- The continued applicability of the previously identified and conditioned mitigation measures.

Where it is considered that against the above four criteria no significant changes to the previously assessed significant effects would take place, the technical area has been deemed to be unaffected and the original findings of the 2019 ES remain valid.

In addition, the technical appendices have been updated where required. There are a number of documents that have not been updated as it is considered that, due to the nature of the scheme amendments, they remain valid from the 2019 ES for the purposes of this ES Addendum. It should be noted that the documents that have not been updated will still refer to the scheme details from the 2019 ES, however the conclusions remain the same.

Structure of the Technical Chapters

In general, each of the technical chapters of the 2019 ES are structured as follows:

- Introduction;
- Methodology;
- Baseline Conditions;
- Potential Significant Impacts;
- Design Interventions;
- Assessment Pre-Mitigation;
- Mitigation & Enhancement Measures;
- Assessment Post-Mitigation; and
- Inter-Development Cumulative Effects.

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EIA METHODOLOGY – ES ADDENDUM

Introduction

This section provides details of:

- the company that has undertaken the technical assessment, as well as the author(s) and their professional qualifications;
- the purpose of the chapter;
- a list of figures supporting the assessment, which are provided together at the end of the chapter; and
- a list of all of the technical appendices that are relevant and referenced within the chapter.

Methodology

This section provides details of:

- the legislation, guidance, standards and policies that have informed the assessment;
- the consultees that have been contacted in preparing the chapter (e.g. technical officers at the local planning authority and officers at statutory consultees, such as the Environment Agency);
- the comments raised during scoping and a commentary on how the comments have been addressed within the assessment;
- where relevant, a description of how climate change, human health and risks of major accidents and disasters have been taken into account within the assessment;
- where relevant, any alternatives to the proposed development as set out in *Chapter 4 Alternatives & Design Evolution* in the 2019 ES that have been considered and assessed;
- Which assessment scenarios have been considered and through what means;
- any associated development (i.e. development which is required to facilitate the development but does not form part of the planning application, such as off-site utilities works) that is relevant to the assessment;
- how baseline conditions have been assessed (e.g. site visits/surveys/review of publicly available data) and the scale of sensitivity adopted within the assessment;
- how magnitude has been assessed – specifically whether there are any aspects of the project that are relevant to the assessment but not described in *Chapter 3 Application Site & Development Proposals* – and the scale of magnitude adopted within the assessment;
- how effect significance has been assessed (e.g. whether a matrix or some other approach has been adopted); and
- any assumptions or limitations.

Baseline Conditions

This section takes the form of a table that provides a list of:

- the key receptors that have been identified;
- a brief description of the baseline conditions relevant to the topic in question and the key receptors;
- the sensitivity attributed to each receptor; and
- where further details can be found within the relevant technical appendices.

This section also compares this to the 2019 ES baseline to note any significant variances.

Potential Significant Impacts

This section takes the form of a table that provides details of the potentially significant impacts of the proposed development, split by phase (i.e. construction or operation), and whether those impacts are likely to be adverse or beneficial in nature. It should be noted that the term 'construction phase' has been used within the ES to refer to both the demolition and construction activities proposed.

This section also compares this to the 2019 ES effects identified to note any significant variances.

Design Interventions

Design interventions constitute alterations to the proposals, made to lessen adverse effects and improve beneficial effects (e.g. the siting of a building so as to avoid particularly sensitive habitats within the application site boundary). They differ from mitigation measures as they are incorporated into the design of the proposed development and, as such, will be shown on the application plans; while mitigation measures are not shown on the application plans and will need to be secured by other means (e.g. via planning condition or Section 106 agreement).

This section takes the form of a table and lists the design interventions that have been made to address the potential significant impacts of the proposals, the reason(s) that the intervention was included and where further details can be found within the relevant technical appendices.

This section also compares this to the 2019 ES design interventions identified to note any significant variances.

Assessment Pre-Mitigation

This section takes the form of a table and includes details of:

- whether the impact is relevant to the construction or operational phase of the development;
- the receptor(s) that are likely to be affected;
- the impact (including consideration of any design intervention);
- the magnitude of the pre-mitigation impact;
- the significance of the pre-mitigation effect;
- whether mitigation is proposed; and
- where further details can be found within the relevant technical appendices.

This section also compares this to the 2019 ES assessment pre-mitigation to note any significant variances.

Mitigation & Enhancement Measures

This section takes the form of a table and includes details of:

- the phase during which the mitigation or enhancement measures will be implemented;
- the possible effect that is being mitigated;
- the mitigation and/or enhancement measure(s) being proposed;
- how each measure will be secured and when it will be triggered;
- the magnitude of the impact post-mitigation;
- whether the post-mitigation effect is adverse or beneficial; and
- where further details can be found within the technical appendices.

This section also compares this to the 2019 ES mitigation and enhancement measures identified to note any significant variances.

Summary of Residual Effects

A table will be presented at the end of each chapter to summarise the significance of the residual effects identified (i.e. those after mitigation measures are taken into account). This will also provide a comparison to the relevant EQ2 2006 ES residual effects identified. An amalgamated table incorporating all of the identified residual effects and their significance is provided in *Chapter 6: Cumulative Effects, Summary and Conclusions*.

Assessment Post-Mitigation

This section takes the form of a table and includes details of:

- the phase during which the impact is applicable;
- the receptor(s) affected;
- the residual effect following the implementation of mitigation/ enhancement measures; and
- the significance of the effect and whether it is adverse or beneficial, short-, medium- or long-term, direct or indirect, permanent or temporary, and reversible or irreversible.

This section also compares this to the 2019 ES assessment post-mitigation to note any significant variances.

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Inter-Development Cumulative Impacts

This section takes the form of two tables. The first table includes details of:

- the list of schemes identified through scoping as having the potential to result in inter-development cumulative effects alongside the proposed development;
- a brief description of the other scheme(s), including a statement on where it is in the planning/construction process; and
- a description of whether the scheme is likely to result in inter-development cumulative effects for the specific topic area under consideration.

For those cumulative schemes considered relevant to the specific topic, the second table includes details of:

- the phase during which inter-project cumulative effects may arise;
- the receptor(s) likely to be affected;
- any additional measures that are required to mitigate the identified inter-project cumulative effects; and
- the significance of the effect and whether it is adverse or beneficial, short-, medium- or long-term, direct or indirect, permanent or temporary, and reversible or irreversible.

In some instances, for example where the cumulative schemes are not of relevance to the specific topic, a second table is not presented but reference made to the preceding section 'Assessment Post-Mitigation' table, as the residual effect assessment remains the relevant one.

This section also compares this to the 2019 ES inter-development cumulative impacts to note any significant variances.

2.9 ASSESSMENT OF SENSITIVITY, MAGNITUDE & SIGNIFICANCE

The same significance criteria and approach to assessment as that employed in the 2019 ES has been applied in the technical assessments. These are set out in the 2019 ES, **Appendix 1.1**, Volume II of this ES Addendum, and are also provided below for reference.

Ministry of Housing, Communities and Local Government (MHCLG) Guidance suggests that it is advantageous to devise generic assessment criteria for determining the significance of effects that can be applied to all environmental topics considered within an ES. This ensures that, where possible, effects are assessed in a comparable manner.

Prevailing good practice suggests that environmental impacts should be considered in terms of the importance, value or sensitivity of receptors and the predicted scale, or magnitude, of the potential impacts. The significance of potential effects should then be determined through consideration of respective sensitivity and magnitude.

In line with MHCLG Guidance and prevailing good practice, each of the environmental issues within the ES will be assessed following the same general approach, whereby the receptor sensitivity and magnitude of impacts are taken into consideration in establishing the significance of effects. All identified effects will be assessed using the same significance descriptors, which will help to provide a direct comparison between the effects assessed under each chapter.

Where methodologies have been adapted from specific industry recognised guidelines, e.g. Landscape Institute and Institute of Ecology and Environmental Management (IEEM) Guidelines, an explanation as to the chosen methodology will be provided within the relevant chapter.

The standardised approach to the assessment of effect significance across the technical chapters is described below. Where assessments have diverted from this methodology, the alternate approach is described in the relevant chapter.

Receptors & Sensitivity

Receptors are defined as the physical resources or user groups that are subject to impacts. They have been identified through a combination of desktop studies and site visits undertaken by the various members of the EIA team. Further details are provided in each of the technical chapters, but sensitivity may depend on factors such as: rarity; quality; importance in an international, national, regional or local context and/or replaceability etc.

The sensitivity of receptors is considered as being 'very high', 'high', 'medium', 'low' or 'negligible'. A table is included within the methodology section of each chapter explaining the rationale for each of these criteria. A summary is then provided at the end of the baseline conditions section to draw conclusions relating to the perceived sensitivity of identified receptors.

Impacts & Magnitude

Impacts are generally understood to be the changes resulting from an action.

The magnitude of an impact is considered as being 'very large', 'large', 'medium', 'small' or 'negligible'. As with sensitivity, a table is included in each chapter explaining the rationale for each of these criteria. Where it is possible to do so, criteria are based on recognised standards and guidelines. Where this not possible, the criteria are based on expertise and professional experience.

Effects & Significance

Effects are generally understood to be the consequences of impacts. The significance of the effect is informed by the magnitude of the impact and the sensitivity of the receptor.

The assessment of significance within the ES is also considered using a common scale, with effects described as being 'major', 'moderate', 'minor' or 'negligible' (which also includes 'neutral' or 'no impact' assessments). Rather than prescribing a particular methodology (e.g. the use of a significance matrix), the method for ascribing significance is left to the judgement of each technical consultant, so that it reflects best practice within their specialist area.

Broad definitions for each of these descriptors are provided below:

- **Negligible** – Effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error, these effects are unlikely to influence decision making, irrespective of other effects.
- **Minor** – These effects may be raised as local issues and may be of relevance in the detailed design of the project but are unlikely to be critical in the decision-making process.
- **Moderate** – These effects, if adverse, are likely to be important at a local scale and on their own could have a material influence on decision-making.
- **Major** – These effects may represent key factors in the decision-making process. Potentially associated with sites and features of national importance or likely to be important considerations at a regional or district scale. Major effects may relate to resources or features which are unique and which, if lost, cannot be replaced or relocated.

Effects are generally considered to be 'Significant' where they are of 'Moderate' or 'Major' significance (either adverse or beneficial). The only exception is the assessments reported in the daylight, sunlight, overshadowing and solar glare chapter, where 'Minor' effects are also considered 'Significant'. This is discussed further within the chapter.

In addition to the significance of the effect, statements are also made as to whether effects are adverse or beneficial, direct or indirect, temporary or permanent, reversible or irreversible, short-, medium- or long-term and/or cumulative. Definitions and examples for each are provided below:

- **Adverse** – a harmful or unfavourable effect (e.g. the loss of trees to allow the construction of new buildings).
- **Beneficial** – a favourable or advantageous effect (e.g. the creation of jobs as a result of proposed construction works).
- **Direct** – an effect without intervening factors (e.g. the removal of trees to allow for the construction of new buildings).
- **Indirect** – an effect not directly caused by the development (e.g. changes to the pattern of traffic movements across the road network as a result of a new road being constructed).
- **Temporary** – an effect lasting only for a limited period of time (e.g. piling during construction).
- **Permanent** – an effect lasting or intended to last or remain unchanged indefinitely (e.g. land reclamation from the sea).

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- **Reversible** – an effect that is capable of being reversed so that the previous state is restored (e.g. the removal of solar panels to revert to grazing pasture).
- **Irreversible** – an effect that is not capable of being undone or altered (e.g. gravel extraction).
- **Short term** – an effect lasting between 0 and 5 years.
- **Medium term** – an effect lasting between 6 and 11 years.
- **Long term** – an effect lasting more than 12 years.
- **Cumulative** – increasing by one addition after another (e.g. traffic generated by different developments occurring in close proximity to one another).

2.10 ASSESSMENT SCENARIOS

There are two scenarios which will be assessed for each topic within the ES where relevant. These are:

- proposed development including the 1 Form Entry (FE) primary school; and
- proposed development without the 1FE primary school.

In addition, it should be noted that the TA has considered a CLUED scenario to demonstrate that in a 'no development' scenario there are no limitations to access from Star Hill.

2.11 CONSIDERATION OF ALTERNATIVES

The consideration of alternatives has remained consistent with the 2019 ES.

2.12 TOPICS NOT REQUIRING INDIVIDUAL CHAPTERS

The consideration of climate changes and greenhouse gases, human health and risk of major accidents and/or disasters has remained consistent with the 2019 ES, therefore **Appendices 2.4, 2.5 and 2.6** from the 2019 ES remain valid.

2.13 ASSESSMENT OF CUMULATIVE EFFECTS

Cumulative effects were considered within the 2019 ES. These can be:

- **Inter-development effects**: The combined effects of the proposed development together with other existing or reasonably foreseeable developments (taking into consideration effects at both the construction and operational phases); and/or
- **Intra-development effects**: The combined or synergistic effects caused by the combination of a number of effects on a particular receptor (taking into consideration effects at both the construction and operational phases), which may collectively cause a more significant effect than individually.

Inter-Development Effects

As mentioned, in line with the 2019 ES, the Transport Assessment (TA), contained within **Appendix 8.2**, Volume II of this ES Addendum, has considered one cumulative scheme: West Kent Cold Store development (Ref. 09/02635/FUL). With the exception of the transport, air quality, and noise and vibration assessments, it has been considered to be already included within the baseline conditions of the remainder of the assessments.

No further cumulative schemes have been identified and no further schemes have been requested by SDC since the 2019 ES.

Intra-Development Effects

Intra-development or synergistic effects have been considered where the proposed development variations would result in any changes to the residual effects identified. These are addressed in *Chapter 10 Cumulative Effects, Residual Effects & Summary*.

2.14 OTHER RELEVANT REPORTS/ASSESSMENTS

All technical appendices are contained within Volume II of this ES Addendum. The following technical reports, which relate to technical topics not considered within the ES, have been updated for the ES Addendum:

- Updated Arboricultural Impact Assessment (AIA) (**Appendix 3.1**); and
- Fort Halstead: Summary Lighting Assessment 2020 including Proposed External Isoline Contours for Artificial Lighting Plans (**Appendix 3.2**).

The following technical reports remain valid as per the 2019 ES:

- Lighting Assessment 2015 (Appendix 3.3); and
- Slope Stability Report (Appendix 3.4).

2.15 DIFFICULTIES ENCOUNTERED

No over-riding difficulties, such as technical problems or lack of know-how, were encountered during the preparation of this ES Addendum that reduce its ability to fulfil its purpose.

Any minor difficulties experienced and/or assumptions made during the completion of individual surveys/assessments are discussed in the methodology section of the relevant technical chapter(s) or technical appendices.

3 APPLICATION SITE & PROPOSED DEVELOPMENT

3.1 INTRODUCTION

This chapter describes the application site's location and the changes to the physical characteristics of the proposed development since the 2019 ES that forms the subject of the Section 73 application, to enable the likely significant effects of the proposed development to be identified.

Greater detail on the existing environment is provided in the baseline conditions sections contained within the technical chapters of the 2019 ES and this ES Addendum.

3.2 APPLICATION SITE

The application site, which extends to circa 74.42 ha, is centred on NGR 549741, 159317 and located approximately 4km north-east of Sevenoaks and 8km south-east of Orpington on the edge of the North Downs, within the administrative boundary of SDC. The location of the application site is shown in **Figure 1.1**.

The application site is located within an area dominated by farmland and scattered villages, most notably the villages of Halstead, Knockholt and Knockholt Pound. Residential properties are also located along Crow Drive and Star Hill Road immediately to the north-east and south-west of the site, respectively. Land within the Applicant's ownership adjoins the application site, covering an additional circa 57.47 ha of mainly woodland and grassland, as shown at **Figure 1.1**. The land within the Applicant's ownership that lies beyond the application site is referred to as the 'wider survey area'.

The main access into the application site is via Crow Drive off the A224 Polhill Road/London Road in the north-eastern part of the site. There is an additional hours restricted access to the application site off Star Hill. The A224 connects to the M25 motorway at Junction 5, which is located approximately 700m south of the site, although as the M25 motorway continues to the east of the application site in parallel with the A224, the M25 extends within 90m from the site, at the closest point. Crow Drive leads to Crow Road, which extends through the application site (unclassified road) to Star Hill Road (C road classification) to the south-west of the site.

3.3 PROPOSED DEVELOPMENT

The proposals are for a mixed-use development. The updated description of development as it appears on the hybrid planning application is as follows:

Hybrid application comprising:

In outline: development of business space (use classes B1a/b/c) of up to 27,773 sqm GEA; works within the X enclave relating to energetic testing operations, including fencing, access, car parking; development of up to 635 residential dwellings; development of a mixed use village centre (use classes A1/A3/A4/A5/B1a/D1/D2); land safeguarded for a primary school; change of use of Fort Area and bunkers to Historic Interpretation Centre (use class D1) with workshop space and; associated landscaping, works and infrastructure.

In detail: demolition of existing buildings; change of use and works including extension and associated alterations to buildings Q13 and Q14 including landscaping and public realm, and primary and secondary accesses to the site.

The following amendments to the scheme since the submission of the 2019 are:

- Reduction of proposed residential units from up to 750 to up to 635;
- Reduction in residential floorspace to from 68,762 m^2 to 60,538 m^2;
- Alteration of housing mix with a reduction in the number of flats and increase in the number of 3-bed houses;
- Increase in B Class employment floorspace by 115 m^2 (the floorspaces of existing buildings Q13 and Q14 have increased to take account of the basement levels);
- Removal of existing helipad from the application boundary; and
- Inclusion of a new bus loop design on Crow Drive near the Star Hill entrance (the open space within the total site has decreased from 94.00 ha to 93.42 ha).

The following sections describe the various elements of the scheme that are relevant to the assessment of its environmental effects. Further detail is provided in the Planning Statement and Design & Access Statement, which both accompany the planning application.

The Defence Science and Technology Laboratory (DSTL) is currently vacating the application site and therefore, has already undertaken demolition of some of the decommissioned buildings which are surplus to requirements as well as associated remediation works on the plots of the demolished buildings. The detailed programme and sequence of future demolition and remediation works by DSTL are currently unknown, although it is expected that some further selective demolition would take place before DSTL fully vacates the application site. Remaining buildings and magazines that would require demolition to facilitate the proposed development together with the removal of floor slabs, foundations and redundant infrastructure, would likely be demolished and removed in a single programme of demolition by the appointed Contractor. The detailed demolition programme would be confirmed between the appointed Contractor and SDC on a plot by plot basis.

Across the proposed development, minimum heights are anticipated to be circa two storeys (10m) with maximum heights up to four storeys (19.5m). Residential units will typically vary from 2 to 3 storeys with a maximum height of 14.5m, mixed-use provision (including independent living provision) will vary from 3 to 4 storeys (maximum height of 16m) and employment uses will vary from 2.5 storeys to 4 storeys (maximum height of 16m).

The parameter plans for the proposed development are as follows and are included within this ES Addendum:

- **Figure 3.1** Land Use & Green Infrastructure Plan (Drawing No. 00556I_PP01 Rev. D2);
- **Figure 3.2** Building Heights Plan (Drawing No. 00556I_PP02 Rev. D2);
- **Figure 3.3** Access & Movement Plan (Drawing No. 00556I_PP03 Rev. D2); and
- **Figure 3.4** Demolition Plan (Drawing No. 00556I_PP04 Rev. D2).

In addition to the parameter plans the following indicative plans have been provided:

- **Figure 3.5** Illustrative Masterplan (Drawing No. 00556I_MP01 Rev. D2); and
- **Figure 3.6** Indicative Phasing Plan (Drawing No. 00556I_SK03 Rev. P2).

Residential Units

Up to 635 mixed tenure homes in a variety of sizes are proposed for the application site which will be located within distinct residential neighbourhoods.

Innovation & Education Hub

The Innovation and Education Hub is located along the southern part of the site, wrapping around the Fort and QinetiQ consolidated demise. The employment area and primary school are an integral part of the Village Centre and its location is easily accessible from every home which will encourage activity and vibrance making the commercial uses in this location more viable.

The employment areas will include a range of buildings with varying footprint areas, providing flexible accommodation for office, research and development as well as light industry.

At the centre of the main employment area is a one form entry primary school. This primary school will serve the new residents, reducing the need to travel outside of the development via car for the school run.

Village Centre

The Village Centre forms the heart of the development as both an employment area and a community hub for the new residents. It sits to the north of the Fort, encompasses the retained and refurbished 'Q' buildings as well as providing a new village green to the east of Penney Road. The village centre will provide a range of uses and facilities for the new community including a food store; café; community hub with space for a GP consulting room; a gym; flexible workspace; a nursery as well as space which can accommodate older people's housing.

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APPLICATION SITE & PROPOSED DEVELOPMENT

A clear sequence of open spaces from the Fort to the Green Link including the Village Square and Village Green, will be provided with continuous shared footway/cycleway with a minimum width of 3m wide. An equipped play area will also be provided in the Village Green.

The detailed component of the planning application for buildings Q13 and Q14 is set out in a number of drawings that may be found at **Appendix 3.5**, contained within Volume II of this ES Addendum.

Non-Residential Floorspace Schedule

A summary floorspace schedule for the non-residential uses is provided below in **Table 3.1**.

Table 3.1

Non-Residential Floorspace Schedule (Gross External Area (GEA))

SUMMARY SCHEDULE	USE CLASS	INCLUDING PRIMARY SCHOOL	EXCLUDING PRIMARY SCHOOL
Mixed Uses in the Village Centre (sqm)	A / B / D classes	8,880	2,905
Employment Uses (sqm)	B classes	20,409	21,757
1FE Primary School (ha)	D1	1.06	-
QinetiQ (sqm)	B classes	6,016	6,016
Fort Area (sqm)	D1	1,794	1,794
Retained Bunkers (sqm)	D1	500	500

Site Access & Parking

The site access and parking remain consistent with the 2019 ES with the exception of the inclusion of a new bus loop design on Crow Drive near the Star Hill entrance.

Greenspace, Landscaping & Public Realm Works

The greenspace, landscaping and public realm remains consistent with the 2019 ES with the exception of the open space within the total site having decreased from 94.00 ha to 93.42 ha due to the inclusion of a new bus loop design on Crow Drive near the Star Hill entrance.

Lighting

The lighting strategy remains generally consistent with the 2019 ES, although further detail has been provided in the form of a lux spill plan on request from KCC.

Lighting contour plans for the planned roadways have been prepared, with ecological input and in accordance with best practice guidance. This has further informed the mitigation measures that would be implemented to reduce the illumination of ecological sensitive receptors, in particular bat roosts. The measures include the use of directional LED lighting with no upward spill of light and reduced lighting columns.

Further details may be found in the Summary Lighting Assessment (2020) which includes Proposed External Isoline Contours for Artificial Lighting Plans, contained in **Appendix 3.2**, Volume II of this ES Addendum.

Arboriculture

The tree strategy remains generally consistent with the 2019 ES, although due to the reduction in the extent of built development the potential for tree retention has increased.

Further details may be found in the Updated Arboricultural Impact Assessment (AIA) which is provided in **Appendix 3.1**, contained within Volume II of this ES Addendum.

Waste Management

The waste management remains consistent with the 2019 ES. Refuse stores and collection points have been designed into the layout and conveniently located for both residents for refuse vehicles on bin collection day. Refuse swept path analysis has been checked to ensure the development is accessible to refuse vehicles. Composting facilities are also available near the community garden.

Energy Strategy

The energy strategy remains valid for the purposes of the ES Addendum and has not been updated.

Utilities Infrastructure

The utilities infrastructure remains consistent with the 2019 ES

3.4 ASSOCIATED DEVELOPMENT

The associated development remains consistent with the 2019 ES

3.5 SITE DEVELOPMENT – PHASING, LAND FORMATION & CONSTRUCTION

The construction strategy has remained consistent with the 2019 ES.

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The proposed development variations have been considered in the context of the 2019 ES (Application Reference: 19/05000/HYB). In the context of these considerations of the potential for significant environmental effects, whether technical areas may be scoped out has been informed by the following aspects:

- The relevance and scale of the proposed development variations;
- Interim updates in legislation, policy, or guidance;
- The validity of the baseline data; and
- The continued applicability of the previously identified and conditioned mitigation measures.

Where it is considered that against the above four criteria no significant changes to the previously assessed significant effects would take place, the technical area has been scoped out of the assessment and a technical summary has been provided within this chapter.

4.1 SOCIO-ECONOMICS

Relevance & Scale of Proposed Development Variations

The proposed development is seeking to change the quantity of housing units to be delivered to 635 units from the previous range of 650 to 750. A variation is also sought in the provision of employment floorspace in the proposed development, although this is for the addition of 115m^2 of floorspace so represents a negligible change. The proposed development variations have been considered in the context of the 2019 ES.

In addition to considering the proposed development variations, this update has reviewed the latest socio-economic data relating to the baseline conditions for each of the receptors identified in the 2019 ES. There have been changes in baseline conditions for most of the receptors and these are described in the update. However, the outcome of the review of baseline conditions is that the changes do not result in any revision to the sensitivity of the receptors.

Legislation, Policy & Guidance Updates

There are no specific legislative provisions in the EIA Regulations 2017 relating to the assessment of socio-economics in an ES context. This remains the case.

Chapter 6 Socio-Economics from the 2019 ES considered a number of relevant policies and strategies relating to socio-economic impacts and assessment of demand for and supply of social and community infrastructure. These were:

- National Planning Policy Framework (NPPF, 2019) [7];
- Sevenoaks Local Plan, Proposed Submission Version (2018) [8];
- Smarter, Faster Together: Towards a Local Industrial Strategy, The South East's Local Enterprise Partnership's Economic Strategy Statement (2018) [9];
- Sevenoaks District Council Open Space Study (2018) [10]; and
- Kent County Council's (KCC's) Commissioning Plan for Education Provision in Kent, 2019-23 (2019) [11].

These were the principle policies and strategy documents which contributed to judgements about the sensitivity of receptors and which provided both policy directions and evidence inputs into the chapter.

Of the documents listed above, there have been changes to three which are relevant to the update of the socio-economics assessment. The changes are described briefly below.

Sevenoaks' Local Plan

The Plan entered examination in public (EIP) during Autumn 2019. Following the first rounds of hearings, the Inspector concluded that SDC had not fulfilled the requirements of the Duty to Cooperate, and that the Plan should not be adopted. This has been legally challenged by SDC. As a consequence, the Sevenoaks Local Plan: Proposed Submission Version (2018) [8], remains the latest version of the Plan.

This does not materially affect the original socio-economics assessment. Policies on which the previous chapter drew for the assessment have not been updated and remain unadopted. Those policies included housing (H1), economic growth including employment land (ST1), housing allocations (ST2), employment land (EMP1) and open space, sports and leisure (OS1).

South East Local Industrial Strategy (LIS), South East Local Enterprise Partnership (LEP), Draft January 2020

The South East LEP's Local Industrial Strategy has now moved to draft stage since the 2019 ES chapter was completed. The draft LIS [12] replaces the provides the Economic Strategy Statement issued in December 2018. The key points from the draft LIS relevant to this updated chapter are as follows:

- A headline target to accelerate the South East as a global region driving sustainable and innovative growth and deliver and additional £28 billion in Gross Value Added (GVA) by 2030.
- Three strategic opportunities at the core of the LIS which are i) The South East's position as a global gateway, improving capacity and reliability of transport and digital infrastructure and connections to London to increase international trade and enterprise; ii) Delivering communities for the future amounting to 117,500 homes of the government's Garden Communities programme, supporting the shift to a net zero carbon economy and wider housing developments across existing communities; and iii) creating a coastal catalyst for coastal communities targeting traditional sector evolution and growth and emerging sectors, encouraging private sector investment, supply chain development and job growth.
- A supporting focus on raising innovation activity and Research and Development (R&D) expenditure in line with the UK government's 2.4% of Gross Domestic Product target; sustaining a workforce and business base fully equipped to respond to new technologies and changing skills needs; embedding clean growth principles to secure the shift to a zero carbon economy, growing sustainable energy production and transport, and investing in climate change mitigation.
- Contributing to the UK government's Grand Challenges where the South East has opportunities including i) Artificial intelligence and data economy; ii) Clean growth implementing the orthwest Local Energy Strategy and supporting the shift to a net zero carbon economy including through new Garden Communities; iii) The future of mobility including investment in sustainable transport systems and supporting new technology; iv) Ageing society using new communities to pioneer design and technological solutions to support an ageing population.

There are no specific references to Fort Halstead or Sevenoaks District in the draft LIS. However, the focus on innovation, R&D and the weight attached to delivering new communities are all relevant policy context in the assessment of the socio-economic impacts of the proposed development. This applies both to the delivery of housing that will contribute to meeting the challenge of population growth, and to the provision of office and light industrial/R&D employment floorspace in the proposed development which aligns with the need to support small and medium-sized enterprises (SMEs) and innovative businesses.

Kent County Council's Commissioning Plan for Education Provision, 2020-24, 2019

KCC's plan for education provision was a key source of school capacity, roll and forecast data in 2019 ES. The publication of an updated Plan covering the period to 2020-24 [13] revises much of this data which has been considered accordingly.

Baseline Data Validity

Baseline conditions assessed in the 2019 ES chapter used wherever available the most up-to-date national and local data sources, together with application site information supplied by the consultant team. Socio-economics is a topic with substantial scope, and many of the data sources on which the baseline assessment drew have been updated through 2019 and early 2020. The sources of this updated data include:

- Office for National Statistics (ONS) Mid-Year Population Estimates; Business Register and Employment Survey (employment data);
- Annual Population Survey (labour supply data);
- Ministry of Housing, Communities and Local Government (MHCLG) dwelling stock data (housing);
- Department for Education Schools Census data;
- KCC's Commissioning Plan for Education Provision in Kent, 2020-24;

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- National Health Service (NHS) Digital and NHS Choices websites; and
- GP practice and dental surgery websites.

The next section of this update considers the changes in baseline conditions for each receptor. The following impact areas were used in the 2019 ES and remain valid for the update of baseline conditions:

- Local impact area around Fort Halstead: The application site is located across several of the data units used for statistical purposes. To ensure that the local area captures Halstead village, Dunton Green, Badger's Mount and the majority of the site, it has therefore been necessary to use lower layer super output areas (LSOA) Sevenoaks 8a, 8c and 8d;
- Sevenoaks District;
- The Functional Economic Market Area (FEMA): including Sevenoaks district, Tonbridge and Malling, and Tunbridge Wells local authority areas; and
- Kent County Council area.

Population

There have been small increases in the populations of the impact areas since the 2019 ES. These range from 0.6% for the local impact area to 1.2% for Kent. As such there is no change in the sensitivity of the population receptor which remains high.

Employment

Changes in employment in the impact areas are as follows:

- On-site employment at Fort Halstead has reduced from 710 in 2018 (650 DSTL/Qinetiq staff, 60 contractors) to 500 (400 DSTL/Qinetiq, 100 contractors).
- Employment in the local impact area increased by a significant 20% between 2017 and 2018 (500 jobs), although it is not clear whether these are new workplace jobs in the area or the result of companies with head office operations increasing job numbers when the jobs are located in operations outside the area.
- Marginal changes only in employment in Sevenoaks, the FEMA and Kent.

There is no change to the sensitivity of the employment receptor which remains high.

Labour Force

There have been increases in the number of employed residents in the impact areas. Sevenoaks and Kent have seen 3% increases between 2018 and 2019. The FEMA has seen an increase of 8%. These changes are likely to reflect a combination of population growth (i.e. more people living and working in the impact areas) and the area's low unemployment rates.

There is no change in the sensitivity of the labour force receptor which remains high.

Housing Supply

There have been increases in the housing supply of the impact areas ranging from 0.5% in Sevenoaks, 0.8% in the FEMA and 1% in Kent. This reflects the completion of new dwellings in each area and the delivery of planned housing targets.

There has been little change in affordability ratios in the three areas. Whilst that of Sevenoaks has reduced from 14.8 to 13.1 between 2018 and 2019, it remains one of the least affordable areas of England outside London. Affordability in the other FEMA local authority areas continues to be between 11 and 12, also representing poor affordability.

There is no change in the housing supply receptor which remains high.

Early Years Education

KCC's latest Commissioning Plan (Figure 8.1) shows that there has been an increase in the deficit of early years places in Sevenoaks from 174 in 2019 to 249 by summer 2020. There remain nine providers within two miles of the application site including nurseries and pre-school facilities.

There is no change in the sensitivity of the Early Years Education receptor which remains high.

Primary Education

There has been no change in the primary schools that comprise the relevant primary schools planning group (Northern Villages SPG) for Fort Halstead.

There have been changes in the rolls of the four primary schools:

- Halstead Community Primary: Increase in surplus places from 92 in 2018 (the figure in the 2019 ES) to 93 based on the January 2019 Schools Census.
- Otford Primary: Decrease in surplus places from 30 in 2018 to 20 as of January 2019.
- St. Katherine's Knockholt: No change in surplus places which remains at 25.
- Shoreham Village School: Reduction in surplus places from 21 in 2018 to 19 in January 2019.

KCC's Commissioning Plan for Education (2020-24) shows a higher forecast surplus in places in the Northern Villages SPG of 219 at 2023 compared with estimated 130 in the previous Commissioning Plan (2019-23).

Primary age pupil forecasts in the latest KCC's Commissioning Plan (2020-2024) (Figure 10.2) show an increase of 140 between 2017-18 and 2032-33. This compares to 300 in the previous Commissioning Plan (2019-23), suggesting a smaller increase is now forecast.

However, these changes do not result in any revision to the sensitivity of the receptor which remains very high.

Secondary Education

There has been no change in the schools that comprise the two SPGs (Sevenoaks and Borough Green non-selective; West Kent selective) since the 2019 ES.

There have been small changes in the deficit of secondary school places in the relevant non-selective and selective school planning groups for secondary education.

- Sevenoaks and Borough Green Non-selective SPG: Trinity School, Knole Academy (both Sevenoaks) and Wrotham School. Deficit in January 2019 was 231 compared with 249 in 2018, the figure identified in the 2019 ES.
- West Kent Selective Schools SPG: Deficit in the selective schools SPG improved slightly to 1,900 places in January 2019 from 1,913 as stated in the 2019 ES. The deficit is still therefore substantial.

The updated projections from KCC's Commissioning Plan (2020-24) shows a deficit in the non-selective SPG of 302 at 2025-26, compared with 697 in the previous Commissioning Plan (2019-23) for 2024-25. The updated Commissioning Plan (2020-24) notes also that in the non-selective SPG 60 temporary Year 7 places will be added by 2020-21, and existing schools will be expanded by 3FE at 2021-22. Further worsening of deficit is projected for the selective system.

The outcome of these changes in that the sensitivity of this receptor remains very high.

Post-16 Education

There has been no change in the schools that comprise the two SPGs (Sevenoaks and Borough Green non-selective; West Kent Selective) since the 2019 ES.

KCC's updated Commissioning Plan (2010-24) indicates no change in the current surplus of places in non-selective post-16 school provision in the Sevenoaks and Borough Green SPG. This remains at 510 as per the 2019 ES.

There remains a deficit of places in the West Kent Selective Schools SPG and this has increased to 111 places in 2019-20, compared with 21 at the time of the 2019 ES, according to the updated KCC's Commissioning Plan (2020-24).

The updated KCC's Commissioning Plan (2020-24) points to a small deficit of 9 places for post-16 places in the non-selective SPG by 2025-

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26. This compares with a surplus of 97 places identified at 2024-25 in the 2019 ES.

In the West Kent selective schools SPG, the updated Commissioning Plan (2020-24) points to a slightly reduced deficit from 627 places in 2024-25 identified in the 2019 ES to 602 places in the same year.

Despite the changes in the forecast figures, there is no change in the sensitivity of the receptor remains high.

Health: General Practitioners

There have been no changes in the list of five GP practices which are considered relevant to Fort Halstead (Otford, Westerham, Amherst, Town and St. Johns).

For the practice (Otford) considered most likely to receive patients from the residents in the proposed development, NHS Digital data shows total patient number of 48,697 in December 2019 compared with 48,364 in 2018 at the time of the 2019 ES. The full-time equivalent (FTE) GP number remains the same at 20.4. The data shows a small increase in patient numbers of 152 (1.4%) compared with the 2019 ES.

For all the five practices, ratios of patients per FTE GP for these practices continue to exceed the 1,800 regarded as a benchmark patient list size. The average was 2,387 in December 2019 compared with 2,370 in 2018 at the time of the 2019 ES, so the change is marginal.

There is therefore no change in the sensitivity of this receptor which remains high.

Health: Dentists

There continue to be four local dentist practices within 3.1 miles driving distance of the application site, with an estimated ten dentists currently (December 2019), an increase of two compared with the 2019 ES Chapter. There remains no information available on patient lists and it is not possible to determine what capacity is available to receive new NHS patients.

There is no change in the sensitivity of this receptor which remains high.

Health: Acute Health Care Facilities

There has been no change in the acute health care facilities which are relevant to the proposed development. These are Sevenoaks Community Hospital and Princess Royal University Hospital (Orpington). The latter is the closest hospital with an accident and emergency facility.

There is no updated information on the capacity or use of these facilities. The sensitivity of the receptor therefore continues to be high.

Sports, Leisure Facilities, Green Infrastructure

The update suggests that there remain 21 facilities and spaces within 7.1 miles of the application site providing indoor sports and leisure facilities, community and social facilities, and a wide range of outdoor green infrastructure including sports pitches, golf courses, natural/semi-natural greenspace, outdoor play and recreation areas, and amenity greenspaces.

In light of the current Covid-19 situation it is not possible to determine whether there have been any changes in these facilities and whether they will remain open.

There are no grounds to change the sensitivity of this receptor which remains medium.

Validity of ES Findings & Recommended Mitigation Measures

This section assesses the impacts of the proposed development variations and explains what change, if any, this represents compared with the findings of the 2019 ES. It considers whether the revised impact figures lead to any change in the significance of the effect, any revisions to mitigation and finally to any residual effects post-mitigation.

Construction: Demolition/Enabling & Full Construction Phase

Employment

The relevant receptor for the effects of this phase is employment.

There is no change in the estimated construction value of the proposed development which remains at £200 million, the same headline estimate used in the 2019 ES which is the basis for the calculation of employment impacts.

As a result, the estimated impact continues to be 25 workers a year for demolition and enabling works, and 288 workers per annum over the full construction period, giving total of 313 workers per annum on average.

- There is no change in the significance of this beneficial effect.
- There is no change in the mitigation suggested to realise the benefits of the effect, and therefore no change in the residual effect.

Operational Phase

Population

For the completed development, the 635 housing units in the proposed development with generate a population of 1,485-1,536. This compares with a population of 1,521-1,815 estimated in the 2019 ES chapter for the 650-750 housing units. This is a non-material change.

There is no change in the assessed significance of the effect given the marginal change in the baseline population and the non-material change in the assessed impact. No mitigation was proposed in the 2019 ES.

Employment

The completed development with the proposed variations would generate 1,374 total jobs (without primary school) and 1,445 total jobs (with primary school). This is non-material change compared with the 2019 ES which assessed the total employment figures as 1,366 (without primary school) and 1,438 total jobs (with primary school).

In addition, multiplier effects could support 412-433 jobs elsewhere across Kent compared with 410-431 in the previous and household spending in the completed development could support 88 FTE jobs compared with 90-103 in the 2019 ES chapter. In both cases, these are non-material changes.

As result there is no change in the significance of the effects assessed pre-mitigation in light of the non-material changes in the baseline conditions. No changes are suggested to the mitigation measures proposed to maximise what is a beneficial effect, and therefore there are no changes to the significance of the residual effect.

Labour Force

For the completed development with the proposed variations, the labour force is estimated at 969-1,007 economically active residents and 924-956 employed residents. This compares to 897-1,071 economically active residents and 837-998 employed residents in the 2019 ES. It does not represent a material change to the labour force impact.

There is no change in the assessed significance of this effect given the marginal changes in baseline conditions. No mitigation was identified in the 2019 ES.

Housing Supply

The total dwellings figure of 635 for the proposed development with the variation is marginally smaller than the 650 dwellings which was the low end of the 650-750 dwellings range in the 2019 ES chapter. There is therefore no material change in terms of proportions of impact area housing stock and the assessment of contribution to delivery of the emerging Sevenoaks Local Plan targets of 698 per annum across the Plan period, and 588 per annum from 2019.

As a result there is no change in the assessed significance of the effect. No mitigation was proposed in the 2019 ES.

Education: Early Years

The proposed development with variations would generate an estimated of 12 0-4 year olds at Year 1, 73-76 for the completed development. This compares to 75-77 and 86-89 for the completed development for the 650-750 unit scheme, so represents a non-material change.

Seven children in Year 1 and 41-42 children at completion of development would be expected to require childcare places compared with seven (Year 1) and 42-50 respectively in the 2019 ES. This is also a non-material change.

There is no change in the significance of this effect given the non-material changes in the impact and no evidence of any material change in baseline conditions. No mitigation was proposed.

Education: Primary

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The estimated total of 28 primary-aged children at Year 1 for the proposed development with the variation represents no change in figure compared to the 2019 ES. The total of 178 primary age children for completed development compares with 182-210 in the 2019 ES (i.e. a difference of 4-32). This is therefore a marginal reduction at the lower end of the range.

Whilst there remains a forecast deficit of primary school places in future years, the significance of the effect does not change because the proposed development includes provision for a single form entry (1FE) primary school with capacity for up to 210 children. No mitigation was proposed in the 2019 ES for this effect.

Education: Secondary

The proposed development with the variation would generate an estimated of 20 secondary-aged children at Year 1, the figure same as the 2019 ES. The completed development would generate127 children, a figure only slightly lower than the lower end of the range of 130-150 children for the 650-750 unit scheme in the 2019 ES. This is a difference of 3-23 children.

Since there remains a significant projected deficit of school places, the assessed significance of the effect does not change pre-mitigation.

In the 2019 ES mitigation was proposed in the form of potential financial contributions through Community Infrastructure Levy (CIL) to secondary school provision. This continues to be appropriate and there is therefore no change in the significance of the residual effect post-mitigation.

Education: Post-16

The proposed development with the variation would generate 4 16-18 year old students in Year 1 and 24 students for completed development. For Year 1 there is no change compared with the 2019 ES. For the completed development, this represents a marginal change compared with 24-28 range assessed in the 2019 ES.

There remains substantial capacity in non-selective post-16 education in the SPG, and a significant deficit of places in selective post-16 schools in the relevant SPG. There is therefore no change in the assessed significance of the effect pre-mitigation. No mitigation was proposed.

Health: GP Facilities

The proposed development with the variation would generate 234 additional patients in Year 1 (identical to the figure in the 2019 ES) and a total of 1,485 potential patients in completed development. This compares with 1,521-1,755 potential additional patients in the 2019 ES, representing a difference of 36-270. This is not considered of material significance to the assessment and therefore there is no change in the assessment of the effect.

Health: Dentists

The proposed development with the variation would generate 234 patients in Year 1 and 1,485 for completed development compared with 1,521-1,755 in the 2019 ES chapter. There is no change in the Year 1 figure compared with the 2019 ES, and a difference of 36-270 fewer patients for the completed development.

The update of baseline conditions shows there are two additional dentists in the practices considered in the assessment compared with the figure in the 2019 ES. In principle, this would imply the additional capacity to absorb patients from the proposed development subject to confirmation of whether or not facilities are accepting new NHS patients.

The assessed significance of this effect would change from Moderate Adverse to Minor Adverse for the completed development. However, this is contingent on there being capacity in local dentist practices to absorb new patients as the proposed development is completed, and whether this capacity is available to NHS patients. At this juncture it is not possible to determine this.

Should no additional capacity be available, mitigation in the form of potential financial contributions through CIL to dentistry provision would be necessary, as suggested in the 2019 ES. This would remain appropriate if no capacity were available to absorb new patients from the proposed development. There would therefore be no change in the assessed significance of the residual effect post-mitigation.

Health: Acute Health Care Facilities

The proposed development with the variation would generate a potential patient population of 234 in Year 1, the same as the figure assessed in the 2019 ES. For the completed development the total would be 1,485 compared with 1,521-1,755 in the 2019 ES. This represents a lower figure of 36-270. This does not represent a material change.

There is therefore no change to the assessed significance of the effect. Mitigation in the form of potential financial contributions through CIL was suggested in the 2019 ES and this remains appropriate. As a result there is no change in the assessed significance of the residual effect.

Sports, Leisure Facilities, Green Infrastructure

The green infrastructure element of the assessment of this effect is based on managed and non-managed open space requirements per 1,000 of the population and policy standards set by SDC. The change in population for the proposed development with variations is only marginally lower (1,485) than the 1,521 figure at the lower end of the range of 1,521-1,815 estimated in the 2019 ES. As a result, there is no change in the assessed significance of this effect.

Summary

The changes to the proposed development include the adjustment to a total of 635 dwellings from a range of 650-750 dwellings in the 2019 ES, and the addition of 115m² of employment floorspace in B uses. The change to the number of residential units impacts upon the majority of the receptors assessed in the chapter, whilst the small change to floorspace affects the employment receptor and the temporary effects in the construction, demolition and enabling phase. Given the range of changes that arise, it was considered prudent to review the impacts and assessed effects across the full range of receptors.

The outcome of this updated assessment is that there is only one change in the assessed magnitude of impacts and therefore the significance of effect pre-mitigation, which relates to dentist provision. Where the increase in the number of dentists in the practices identified in the baseline evidence modestly improves the provision of dentists relative to the population of the area with the completed development, the pre-mitigation significance of the effect therefore changes from Moderate Adverse to Minor Adverse for the completed development.

However, some caution is required since there is a lack of data available about future NHS provision, and capacity at 2031 (the completion year for the fully operational development) might reasonably be expected to change over the intervening period. For this reason, there remains a need for mitigation potentially through CIL, a conclusion which therefore remains the same as the 2019 ES.

As a result, the proposed development amendments would not alter the socio-economic residual effects as assessed in the 2019 ES with all conclusions remaining valid.

4.2 AIR QUALITY

Relevance & Scale of Proposed Development Variations

Chapter 8 Transportation & Access of this ES Addendum states that the changes between the scheme assessed in the 2019 ES and the current proposed development are not significant in transport terms and, as a result of the changes to the scheme, there would be a reduction in traffic flows from those assessed as part of the 2019 ES.

The impacts on air quality are directly linked to the traffic flows associated with the development and therefore a reduction in flows from that assessed as part of the 2019 ES will mean an overall reduction in the concentrations predicted at the existing and proposed receptors. The 2019 ES represents a worst-case assessment of the impact of the development and concluded that the scheme assessed would have a negligible effect and this would remain the case for the current proposed development.

The general principles of the energy strategy remain the same as that considered in the 2019 ES and therefore the assessment of operational plant emissions remains valid.

Legislation, Policy & Guidance Updates

There have been no updates to key legislation, planning policy and guidance since 2019 when the original assessment was completed. A summary of the legislation, planning policy and guidance considered in the 2019 ES is presented below:

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- UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations (2017) [14];
- Planning Practice Guidance (2014, updated in 2020) [4];
- Environmental Protection UK & Institute of Air Quality Management Guidance; Land-use Planning and Development Control: Planning for Air Quality (2017) [15];
- Air Quality Standards Regulations, 2010 (4) [16];
- The UK Air Quality Strategy, 2007 [17];
- The Environment Act, 1995 [18];
- NPPF (2019) [7];
- SDC Core Strategy Development Plan Document (2011) [19]; and
- Kent Downs Area of Outstanding Natural Beauty Management Plan (2014) [20].

Baseline Data Validity

There have been no updates to the baseline data presented in the 2019 ES and it therefore remains valid.

SDC currently undertakes NO_2 and PM_{10} monitoring at three locations within SDC using automatic monitors and at fifty locations using NO_2 diffusion tubes.

The closest automatic monitor to the site is the Greatness Park monitor, approximately 4.5km south-east of the site and classified as an urban background site. The closest two diffusion tubes to the site are located approximately 2.8km from the site and are both classified as roadside locations.

The closest monitoring locations to the site have shown concentrations below the relevant air quality objectives between 2014 and 2018.

There are currently nine Air Quality Management Areas (AQMAs) declared by SDC. The site is not located within an AQMA, although at its nearest point AQMA 2 (an area following the M25 throughout the borough extending 200m either side of the motorway centreline between J5 and 6, 80m between J3 and 5 and 140m between J2 and 3) is located approximately 90m east of the site. The air quality assessment has included traffic flows on the M25 and based on the results of the 2019 ES, the impact of the proposed development on the AQMA is considered to be negligible.

Validity of ES Findings & Recommended Mitigation Measures

The full occupation of the proposed development is now anticipated to be 2031. The 2019 ES assessed the opening year as 2030. Background concentrations and vehicle emission rates are predicted to reduce year on year and therefore the assessment year of 2030 in the 2019 ES represents a worst-case assessment of the opening year of the development.

The assessment of operational effects in the 2019 ES predicted no exceedances of the annual mean concentrations of NO_2 or PM_{10} and no short-term objectives were predicted to be exceeded in the 2018 baseline scenario or in 2030 either without or with the development. Therefore, it is considered that air quality in and around the application site is below the relevant objectives. The changes to the proposed development are anticipated to result in a reduction in traffic flows from those assessed in the 2019 ES and would therefore not change the conclusions of the 2019 ES assessment which represents a worst-case assessment and concluded that the effect of the proposed development would be negligible. Accordingly, as per the 2019 ES, mitigation measures during the operational phase of the proposed development would not be required in terms of air quality.

It is not expected that the proposed approach to the construction works will change, and with appropriate mitigation in place, the residual effects from construction and earthworks at the application site will remain as negligible. The previous mitigation proposed within the 2019 ES are considered to remain relevant and appropriate.

4.3 GROUND CONDITIONS & CONTAMINATION

Relevance & Scale of Proposed Development Variations

Reduction of Proposed Residential Units from 750 to 635

The 2019 ES assessed the likely significant effects of the proposed development on the environment in terms of ground conditions and contamination. In particular, it considered the potential risk of contamination to human health and the environment and the impacts of existing ground conditions on new buildings, structures and controlled waters. The reduction of proposed residential units is concluded to have a negligible impact on ground conditions and contamination at the application site.

Removal of Existing Helipad

The proposed removal of the existing helipad is concluded to have a negligible impact on ground conditions and contamination at the application site and in the surrounding area. An engineered cover system, as necessary in other areas of the site, would be required in this area where no hard surfacing is proposed.

Increase in B Class Employment Floorspace by 115m²

The proposed increase in B Class employment floorspace is concluded to have a negligible impact on ground conditions and contamination at the application site and in the surrounding area. Employment floorspace was assessed in the 2019 ES and an increase in area has negligible impact on the 2019 conclusions.

Legislation, Policy & Guidance Updates

A review of the legislation, policy and guidance documents consulted and referenced in the preparation of the 2019 ES has identified no updates to such documents.

The legislation, policy and guidance documents reviewed are:

- Model Procedures for the Management of Land Contamination, Environment Agency (2004);
- Land Contamination: Risk Management, Environment Agency (05/06/2019 GOV.UK);
- Planning Practice Guidance: Land Affected by Contamination (2014);
- BS10175: 2017 Investigation of Contaminated Sites: Code of Practice;
- BS5930: 2015 Code of Practice for Ground Investigations;
- CL:AIRE, Definition of Waste: Development Industry Code of Practice Version 2, 2011;
- CIRIA C552 2001; Contaminated Land Risk Assessment. A guide to Good Practice;
- Section 78A of Part 2A of the Environmental Protection Act of 1990;
- Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance;
- The Water Resources Act 1991;
- The Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009;
- The Water Act 2003; and
- NPPF (2019) [7].

Baseline Data Validity

A review of the baseline data used to inform the baseline conditions at the application site has identified no updated or additional baseline data, or changes to guidance of a nature which alter the approach in gathering and assessing such data.

As such, the baseline data and hence baseline conditions identified in the 2019 ES are concluded to remain valid.

The baseline condition identified are:

- The Made Ground within the existing waste compound is a source of lead, copper, polycyclic aromatic hydrocarbons (PAH) and petroleum hydrocarbons. Asbestos fibres have also been encountered in Made Ground at various locations across the site.
- Depleted Uranium – Historic activities associated with the Works undertaken to date have indicated the potential for elevated radionuclide concentrations. This is primarily anticipated around existing buildings Q7, Q6.3, N19 and H19.

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- Explosive Residues – Historic activities associated with the Works undertaken to date have indicated the potential for elevated explosive residues. This is primarily anticipated in the R, M and X areas.
- During construction there is a risk identified asbestos fibres in Made Ground may have a pathway via wind-blown dispersion to impact upon site neighbours.
- Investigation works have been limited within the Scheduled Monument however given the known storage of potentially explosive materials there remains the potential for impact to the structure. Given its proposed community use there also remains a potential risk to future users of the site.
- Elevated concentrations of lead, copper, PAH and petroleum hydrocarbons as a result of the sites historic activities have been identified within the Made Ground and have the potential to impact any future plant life, ecology and existing or proposed flora and fauna, proposed surface water features (e.g. swales) and building material for new structures.
- Groundwater is understood to be at least 90m below ground level (bgl) and unlikely to be impacted by contamination identified at the site. Sensitivity remains high as the underlying chalk formation is a Principal Aquifer.

Validity of ES Findings & Recommended Mitigation Measures

The proposed development variations are considered to not alter the mitigation measures previously recommended and they do not introduce any additional measures. The following mitigation measures were identified in the 2019 ES and remain applicable:

Demolition Phase

- Prior to demolition, the existing buildings will be subject to an asbestos survey to identify if asbestos is present. If so, demolition would be preceded by removal of asbestos by licensed contractors.

Construction/Operation Phase

- Following demolition of existing structures further ground investigation will be required to investigate areas previously not accessible. These principally relate to areas where there are existing buildings. This will allow further delineation of asbestos fibres, concentrations of metals, PAH and petroleum hydrocarbons where identified. Further investigation should also be undertaken in the area of the Scheduled Monument.
- The Contractors for each stage of works must manage the risks in accordance with their legal requirements and will need to prepare appropriate health and safety documentation and obtain appropriate approvals, licences, consents and permits prior to commencement. In addition, appropriate working methods, monitoring and reassurance testing will need to be undertaken during the works.
- A Construction Environmental Management Plan (CEMP) should be developed to place environmental controls on the construction activities to ensure any construction related impacts are minimised.
- Works undertaken to date have not indicated the presence of elevated radionuclide concentrations or significant explosive residues. As a precautionary measure it is recommended that a suitable contractor be appointed to oversee the slab removal, foundation grub out and drains excavation associated with those buildings with a potential history of using depleted uranium and areas known to be associated with explosives.
- Within areas of landscaping, gardens or public open space a suitable capping layer should be placed over the Made Ground with a no dig marker to prevent plant life and ecology coming into contact with contaminants.
- Whilst no significant impact to controlled waters has been identified given the depth to the underlying groundwater, the Contractors for each stage of works must manage the construction activities to ensure no adverse impact to controlled waters or underlying soils occurs. Works will be in accordance with legal requirements and will involve preparation of appropriate health and safety documentation, approvals, licences, consents and permits prior to commencement. In addition, appropriate working methods, monitoring and reassurance testing will need to be undertaken during the works.
- The use of barrier pipe for potable water supplies is recommended.
- All services should be installed within clean service corridors to prevent direct contact with contaminants and ensure future maintenance workers do not come into contact with contaminants.

The following residual effects, identified in the 2019 ES, all remain valid:

Construction Phase

- Following completion and removal of asbestos containing materials by a licensed contractor demolition of existing buildings will have no residual impact on inhalation of asbestos fibres.
- Following completion of construction works in accordance with the CEMP no residual impact from direct contact or inhalation of elevated lead, copper, PAH, petroleum hydrocarbons is anticipated.
- Existing buildings that are to be retained and currently show no sign of damage are not anticipated to experience any residual impact.
- Foundations will be designed taking into account potential aggressive contaminated ground conditions and therefore no residual impact on building materials is anticipated.
- Existing flora and fauna that does not show any evidence of distress is not anticipated to experience any residual impact.
- Clean capping layers for plant growth will be installed removing the pathway for direct contact with elevated contaminants that may cause an adverse impact to newly planted flora and fauna. No residual impact is anticipated.
- Following completion of construction works in accordance with the CEMP, completion of a foundation works risk assessment and approval for the deep bore soakaway design, no residual impact to controlled waters is anticipated.
- Following completion of construction works in accordance with the CEMP and approval for the surface water strategy, no residual impact to controlled waters is anticipated.

Operational Phase

- Capping layers installed in gardens and landscaped areas will break the pathway to the risk of asbestos fibres leaving no residual impact.
- Capping layers installed in gardens and landscaped areas will break the pathway to the risk of direct contact or inhalation of lead, copper, PAH, petroleum hydrocarbons leaving no residual impact.
- The use of barrier pipe for potable water supplies will ensure contaminants do not impact potable water supplies. No residual impact is anticipated.
- Installation of all services in clean service corridors will ensure there is no residual impact to maintenance workers from direct contact with contaminants.

4.4 WATER RESOURCES & FLOOD RISK

Relevance & Scale of Proposed Development Variations

Reduction of Proposed Residential Units from 750 to 635

Noting that the 2019 ES identified that the application site is within Flood Zone 1, and at low risk of flooding from all other sources assessed, the reduction of proposed residential units is concluded to have a negligible impact on flood risk at the application site and in the surrounding area.

Although, the reduced number of proposed residential units is considered to have a beneficial impact on surface water drainage, foul water drainage, and potable water demand, in terms of reducing surface water run-off, foul water discharge and potable water demand at the application site, from that assessed in the 2019 ES, which considered a greater number of proposed residential units. However, based on the identified baseline conditions, such beneficial impacts are not considered to be of a scale to alter the significance of effects and therefore the residual effects assessed within the 2019 ES remain valid.

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Removal of Existing Helipad

The proposed removal of the existing helipad is concluded to have a negligible impact on: flood risk at the application site and in the surrounding area, based on the low risk of flooding identified at the application site; foul water drainage, given the absence of any foul water discharge from the existing helipad; and, potable water demand, acknowledging that there is understood to be no potable water use at the existing helipad.

Although, the removal of the existing helipad is considered to have a beneficial impact on surface water drainage, in terms of reducing surface water run-off at the application site from that assessed in the 2019 ES, which included the existing helipad area as part of the hardstanding area in the operation phase. However, based on the identified baseline conditions, such a beneficial impact is not considered to be of a scale to alter the significance of effects and therefore the residual effects assessed within the 2019 ES remain valid.

Increase in B Class Employment Floorspace by 115m²

The proposed increase in B Class employment floorspace is concluded to have a negligible impact on flood risk at the application site and in the surrounding area, based on the low risk of flooding identified at the application site.

Although, the increase in B Class employment floorspace is considered to have an adverse impact on surface water drainage, foul water drainage, and potable water demand, in terms of increasing surface water run-off, foul water discharge and potable water demand at the application site from that assessed in the 2019 ES, which considered a lower B Class employment floorspace. However, based on the identified baseline conditions, such adverse impacts are not considered to be of a scale to alter the significance of effects and therefore the residual effects assessed within the 2019 ES remain valid.

Legislation, Policy & Guidance Updates

A review of the guidance, legislation and policy documents consulted and referenced in the preparation of the 2019 ES has identified no updates to such documents, specifically:

Guidance

- Guidelines for Environmental Impact Assessment (2004);
- Guidelines for Environmental Impact Assessment (2006);
- Strategic Flood Risk Assessment (2008);
- North Kent Rivers Catchment Flood Management Plan (2009);
- National Standards for Sustainable Drainage Systems (2011);
- Preliminary Flood Risk Assessment (2011);
- Surface Water Management Plan (2013);
- National Planning Policy Framework Flood Risk and Coastal Change Planning Practice Guidance (2014);
- Water Resources Management Plan 2015 – 2040 (2014);
- Non-Statutory Technical Standards for Sustainable Drainage Systems (2015);
- The Building Regulations, Approved Document H: Drainage and Waste Disposal (2015);
- The SUDS Manual (2015);
- Drainage and Planning Policy Statement (2017);
- Strategic Flood Risk Assessment (2017);
- Water Resources Management Plan 2020 – 2100 [draft] (2018);
- Flood Risk Assessments: Climate Change Allowances (2019); and
- Sewers for Adoption 8th Edition (2019).

European Legislation & Policy

- Water Framework Directive (2000); and
- Flood Directive (2007).

National

- Environmental Protection Act (1990);
- Water Industry Act (1991);
- Land Drainage Act (1994);
- Environment Act (1995);
- Water Act (2003);
- Flood Risk Regulations (2009;
- Water Resources Act (2009);
- Flood and Water Management Act (2010);
- Water Environment (Water Framework Directive) (England and Wales) Regulations (2017); and
- National Planning Policy Framework (2019).

Local

- Local Development Framework: Core Strategy (2011);
- Allocations and Development Management Plan (2015);
- Kent and Medway Growth and Infrastructure Framework (2018); and
- Infrastructure Delivery Plan (2019).

However, it is noted Sewers for Adoption 8th Edition (2019) which, whilst published in 2019, and thus referenced as a key guidance document in the 2019 ES, was implemented on 01 April 2020, and therefore is now directly applicable to the proposed development. This new Design and Construction Guidance is of particular note as it provides guidance, for the first time, on the planning, design, construction and operation of Sustainable Drainage Systems (SUDS) intended for adoption by water companies.

Baseline Data Validity

A review of the baseline data used to inform the baseline conditions at the application site has identified no updated or additional baseline data, or changes to guidance of a nature which alter the approach in gathering and assessing such data.

As such, the baseline data and hence baseline conditions identified in the 2019 ES are concluded to remain valid, as follows:

Flood Risk

- Application site within Flood Zone 1, and at low risk of flooding from all other sources assessed.

Surface Water Drainage

- Surface water run-off from the application site either infiltrates into the subsoil via shallow soakaways or is discharged into the surrounding woodland via private drainage systems.

Foul Water Drainage

- The application site is served by a private foul water sewer network, which drains by gravity (and a portion of the application site by a pumping station) into an existing Thames Water sewer along Polhill Road.
- It has been estimated that the existing peak foul discharge from the application site is 95.42l/s.
- Previous consultation with Thames Water has indicated that the existing sewer network does not have sufficient capacity to accommodate all the predicted foul water flows from the proposed development.

Potable Water Demand

- Potable water is currently supplied to the application site by Thames Water. Between 2001 and 2011, water consumption at the application site has fluctuated between approximately 254,815m³/day and 144,295m³/day.
- The Environment Agency classify the Thames Water region as being under 'serious' water stress, the highest classification.
- Thames Water's draft Water Resources Management Plan 2020 – 2100 states that *"By the implementation of our preferred plan (combining demand management and resource development), … the supply and demand for water will remain in balance throughout the remainder of the planning period"*.

SCOPED OUT TECHNICAL ASSESSMENTS

Validity of ES Findings & Recommended Mitigation Measures

The following key receptors were assessed in the 2019 ES and remain valid:

Flood Risk at the Application Site and in the Surrounding Area

The 2019 ES identified that the application site is within Flood Zone 1, and at low risk of flooding from all other sources assessed. The proposed development variations are thus concluded to have a negligible impact on flood risk at the application site and in the surrounding area. Furthermore, no legislation, policy and guidance, or baseline data, updates been identified which would affect the previous assessment undertaken.

As such, the assessment of the effect of the proposed development on flood risk at the application site and in the surrounding area is concluded to remain unaltered from that assessed in the 2019 ES (negligible significance at the construction and operation stages) with no mitigation measures deemed necessary.

Surface Water Drainage at the Application Site

Within the 2019 ES it was concluded that given the existing developed nature of the application site, the proposed development is not expected to notably alter the amount of impermeable surfacing across the application site, and therefore no significant alteration in the rate and/or volume of surface water run-off is anticipated. Whilst the proposed development variations entail alterations to the proportion of impermeable surfacing within portions of the application site, the overall net change is not considered to be of a scale to alter the magnitude of impact assessed within the 2019 ES.

In order to mitigate any potential adverse impact on surface water drainage, the 2019 ES included a 'design intervention' in the form of a new SUDS based surface water drainage system which will manage rainfall up to and including the 1 in 100 year + 40% storm event. This design intervention, adopting the same design principles and standards, is concluded to remain appropriate and relevant, though the detailed design of the system (specifically layout and attenuation provision) has been altered to suit the proposed development variations and ensure compliance with the Sewers for Adoption 8th Edition (2019) Design and Construction Guidance. The updated proposed surface water drainage system is shown in **Appendix 4.1** (Drawing Reference: 10730-HYD-XX-XX-DR-C-2201) of this ES Addendum.

As such, the assessment of the effect of the proposed development on surface water drainage at the application site is concluded to remain unaltered from that assessed in the 2019 ES (negligible significance at the construction stage and moderate beneficial significance at the operation stage) with the design intervention outlined in the 2019 ES considered to remain appropriate and relevant.

Foul Water Drainage at the Application Site

The 2019 ES identified that the occupation and use of the proposed development could alter the rate and volume of foul water generated within the application site. The proposed development variations will result in alterations to the rate and volume of foul water generated within the application site. However, the overall net change is not considered to be of a scale to alter the magnitude of impact assessed within the 2019 ES, and regardless, will likely result in a reduction rather than increase in foul water generation compared to that assessed in the 2019 ES, which considered a greater number of proposed residential units.

The 2019 ES included a 'design intervention' in the form of a foul water drainage strategy which will manage foul water within the application site by routing foul water to pumping stations which discharge to the existing Thames Water sewer network and incorporating storage in combination with any off-site utility infrastructure upgrading works. This design intervention, adopting the same design principles and standards, is concluded to remain appropriate and relevant, though the detailed design of the system (specifically layout) has been altered to suit the proposed development variations and ensure compliance with the Sewers for Adoption 8th Edition (2019) Design and Construction Guidance. The updated proposed foul water drainage system is shown in **Appendix 4.1** (Drawing Reference: 10730-HYD-XX-XX-DR-C-2202) of this ES Addendum.

As such, the assessment of the effect of the proposed development on foul water drainage at the application site is concluded to remain unaltered from that assessed in the 2019 ES (negligible significance at the construction stage and moderate beneficial significance at the operation stage) with the same design intervention outlined in the 2019 ES considered to remain appropriate and relevant.

Potable Water Demand at the Application Site

Within the 2019 ES it was concluded that based on the proposed uses compared to the existing application site use, the potable water demand of the proposed development during its operation is not anticipated to be substantially greater than the current baseline condition. The proposed development variations will result in alterations to potable water demand at the application site. However, the overall net change is not considered to be of a scale to alter the magnitude of impact assessed within the 2019 ES, and regardless, will likely result in a reduction rather than increase in potable water demand compared to that assessed in the 2019 ES, which considered a greater number of proposed residential units.

Furthermore, no legislation, policy and guidance, or baseline data, updates been identified which would affect the previous assessment undertaken.

As such, the assessment of the effect of the proposed development on potable water demand at the application site is concluded to remain unaltered from that assessed in the 2019 ES (negligible significance at the construction and operation stages) with the mitigation measures recommended within the 2019 ES in relation to potable water demand concluded to remain appropriate and relevant (i.e. incorporation of standard measures through the detailed design of the proposed development to reduce water use; all residential buildings required to achieve Lifetime Homes standards and Code for Sustainable Homes (or equivalent scheme) Level 4 as a minimum; and, any necessary off-site reinforcement works undertaken to Thames Water's existing water supply infrastructure).

Summary

Based on the above it is acknowledged that:

- No legislation, policy and guidance, or baseline data, updates have been identified which would affect the previous assessment undertaken; and
- The overall net change in terms of the potential effect on flood risk, surface water drainage, foul water drainage and potable water demand is not considered to be of a scale to alter the magnitude of impacts assessed.

Therefore, the assessment of the effect of the proposed development on the receptors identified at the application site and in the surrounding area is concluded to remain unaltered from that assessed in the 2019 ES, with the same design intervention and mitigation measure principles outlined in the 2019 ES considered to remain appropriate and relevant.

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5 LANDSCAPE & VISUAL

5.1 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 LVIAs.

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

The purpose of this chapter of the ES Addendum is to assess the changes to the likely significant effects of the proposed development on the environment in terms of landscape character and views since the 2019 ES was compiled. The chapter and its supporting appendices should be read in conjunction with *Chapter 7 Landscape & Visual* from the 2019 ES which describes 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 remain as follows:

- 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 throughput the construction and operational phases.

Figures

This chapter should be read in conjunction with the 'Landscape and Visual Impact Assessment Report' (May 2020), provided in Appendix 5.1, Volume II of this ES Addendum, which contains the full LVIA.

It includes a series of figures, as listed below. For all figures, the redline planning application boundary has been updated. In addition, a new Zone of Theoretical Visibility (ZTV) study and wireframe visualisations have been prepared (Figures 13 and 14 respectively).

- 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 (September 2019 scheme);
- Figure 13: ZTV of the Proposed Development (May 2020 scheme); and
- Figure 14: Wireframe Visualisations (May 2020 scheme).

Appendices

This chapter should be read in conjunction with the following appendices which have been updated where necessary.

- **Appendix 5.1**: Landscape and Visual Impact Assessment Report (May 2020), which contains the full LVIA, supersedes Appendix 7.1 from the 2019 ES. 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 3.1**: Arboricultural Impact Assessment (including Tree Retention Plan) (prepared by Middlemarch) which considers the impact of the proposed development on existing trees and supersedes Appendix 3.1 from the 2019 ES;
- **Appendix 3.2**: Summary Lighting Assessment 2020 (prepared by Royal HaskoningDHV), which considers the impact of the proposed development on the night-time environment and recommends an outline lighting strategy and supersedes Appendix 3.2 from the 2019 ES; and
- **Appendix 3.3**: Lighting Assessment 2015 (prepared by Royal HaskoningDHV) from the 2019 ES contained within Appendix 1.1, Volume II of this ES Addendum.

An AONB Report (prepared by LDA Design), which considers the impact of the proposed development on the natural beauty criteria of the Kent Downs AONB, is provided as a standalone document that accompanies this ES Addendum and supersedes Appendix 7.2 from the 2019 ES.

5.2 METHODOLOGY

Guidance

The guidance stated within the 2019 ES remains valid.

Legislation & Policy

The legislation and policy stated within the 2019 ES remains valid.

Consultees

The consultees stated within the 2019 ES remain valid.

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 review of consultee comments / responses stated in the 2019 ES remain valid.

It is noted that since the submission of the application in September 2019, the Kent Downs AONB Unit have provided comments to SDC. A review of these comments is provided in a standalone response (the 'AONB Statement') that accompanies this ES Addendum.

Consideration of Climate Change

There is no change to the consideration of climate change since the 2019 ES.

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Consideration of Human Health

There is no change to the consideration of human health since the 2019 ES.

Consideration of Risk of Major Accidents and/or Disasters

There is no change to the consideration of risk of major accidents and/or disasters since the 2019 ES.

Alternatives

There is no change to the alternatives since the 2019 ES.

Assessment of Baseline Conditions & Receptor Sensitivity

There is no change to the assessment of baseline conditions and receptor sensitivity since the 2019 ES.

Assessment of Magnitude

There is no change to the assessment of magnitude since the 2019 ES.

Assessment of Significance

There is no change to the assessment of significance since the 2019 ES.

Relevant Associated Development

There is no change to the relevant associated development since the 2019 ES.

Assumptions/Limitations

There is no change to the assumptions/limitations since the 2019 ES.

LANDSCAPE & VISUAL

5.3 BASELINE CONDITIONS

Landscape Receptors

There is no change to the landscape receptors since the 2019 ES. The landscape receptors remain the Kent Down AONB; the Darent Valley LCA (as defined by the Kent Downs AONB Landscape Design Handbook); and the Knockholt and Halstead Wooded Downs LCA, Chevening Scarp LCA and Westerham to Sundridge Parks and Farmlands LCA (as defined by the Sevenoaks Landscape Character Assessment).

Visual Receptors

There is no change to the visual receptors since the 2019 ES. The visual receptors remain local settlement areas; principle routes; local roads; and recreational routes. There are no specific viewpoints that have been identified as requiring assessment.

Future Baseline

There is no change to the future baseline since the 2019 ES. Overall it is considered that the permitted development would not fundamentally alter the baseline landscape character or views. 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. In relation to the AONB, the permitted development would deliver a range of environmental improvements and benefits to the natural beauty criteria of the AONB.

5.4 POTENTIAL SIGNIFICANT IMPACTS

There is no change to the potential significant impact since the 2019 ES. For ease of reference, potential impacts during the construction and operational phases of the development are re-provided in the table 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
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

5.5 DESIGN INTERVENTIONS

There is no change to the proposed design interventions since the 2019 ES. For ease of reference the summary of design interventions is re-provided in the table 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.	Section 6.0, LVIA Report, Appendix 5.1, Volume II
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.	Section 6.0, LVIA Report, Appendix 5.1, Volume II
Woodland	Retention and enhancement of existing woodland.	To ensure the development is well screened; and to maintain the wooded character of the application site.	Section 6.0, LVIA Report, Appendix 5.1, Volume II
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.	Section 6.0, LVIA Report, Appendix 5.1, Volume II

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DESIGN INTERVENTION	DESCRIPTION	REASON FOR INTERVENTION	FURTHER INFORMATION
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.	Section 6.0, LVIA Report, Appendix 5.1, Volume II
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.	Section 6.0, LVIA Report, Appendix 5.1, Volume II
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.	Section 6.0, LVIA Report, Appendix 5.1, Volume II
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.	Section 6.0, LVIA Report, Appendix 5.1, Volume II
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.	Section 6.0, LVIA Report, Appendix 5.1, Volume II
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.	Section 6.0, LVIA Report, Appendix 5.1, Volume II

5.6 ASSESSMENT PRE-MITIGATION (INCLUDING DESIGN INTERVENTION)

Landscape Receptors

There is no change to the assessment pre-mitigation since the 2019 ES. It is acknowledged that there are benefits arising from the reduction in the extent of built development and associated reduction in residential density and numbers, however, this is not considered to change the magnitude or significance of pre-mitigation landscape effects.

As demonstrated by the revised ZTV and wireframes (Figures 12 and 13 respectively) there is little perceptible difference between the likely visibility of the September 2019 application scheme and May 2020 application scheme.

For ease of reference the assessment of landscape impacts is re-provided in the table below.

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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II

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PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II

Visual Receptors

There is no change to assessment pre-mitigation since the 2019 ES, with the exception of the magnitude of effects in relation to the Crow Drive, Armstrong Close and Fort Drive visual receptor. While construction activity / built development will remain visible within the north-eastern part of the application site, built development is no longer proposed within the helipad site. Overall it is considered that this will reduce pre-mitigation magnitude / significance of effect from Medium / Moderate to Medium-Low / Moderate-Minor.

It is acknowledged that there are benefits arising from the reduction in the extent of built development and associated reduction in residential density and numbers, however, this is not considered to change the magnitude or significance of pre-mitigation visual effects (including those visual receptors at Crow Drive, Armstrong Close and Fort Drive who will still experience views of construction activity and the completed development).

As demonstrated by the revised ZTV and wireframes (Figures 12, 13 and 14) there is little perceptible difference between the likely visibility of the September 2019 application scheme and May 2020 application scheme.

For ease of reference the assessment of visual impacts is re-provided in the table below, with relevant updates made to visual receptors at Crow Drive, Armstrong Close and Fort Drive.

PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Settlement						
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. 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-Small	Moderate-Minor Adverse	Yes	Section 7.0, LVIA Report, Appendix 5.1, Volume II

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PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
Principal Routes						
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
Local Roads						
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
Recreational Routes						
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II

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PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
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 is 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		Section 7.0, LVIA Report, Appendix 5.1, Volume II
Settlement						
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 building 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 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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
Operation	Knockholt and Knockholt Pound	Intervening vegetation screen views of the application site and the new built form is unlikely to be visible.	Negligible	Negligible Neutral	Yes	Section 7.0, LVIA Report, Appendix 5.1, Volume II
Operation	Otford (incl. 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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
Principal Routes						
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
Operation	A224 Polhill	The new built form would be generally screened from view, set back from the scarp slope an sitting below the tree line. The removal of be 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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
Operation	A25	The new built form would be screened from view, set back from the scarp slope and would sitting below the tree line.	Negligible	Negligible Neutral	Yes	Section 7.0, LVIA Report, Appendix 5.1, Volume II
Local Roads						
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 from itself 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	Section 7.0, LVIA Report, Appendix 5.1, Volume II

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PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	Otford 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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
Recreational Routes						
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
Operation	Other Public Rights of Way	The removal of the perimeter security fencing (baring 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 from proposed development will not generally be visible. Please refer to Viewpoints 2, 3, 4, 5 and 12.	Medium	Moderate Beneficial	Yes	Section 7.0, LVIA Report, Appendix 5.1, Volume II

5.7 MITIGATION & ENHANCEMENT MEASURES

There is no change to the proposed mitigation and enhancement measures since the 2019 ES. For ease of reference the summary of design interventions is re-provided in the table below.

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 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	Section 7.0, LVIA Report, Appendix 5.1, Volume II
Construction & 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	Section 7.0, LVIA Report, Appendix 5.1, Volume II

5.8 ASSESSMENT POST-MITIGATION

There is no change to the assessment post-mitigation since the 2019 ES, with the exception of the significance of effects in relation to the Crow Drive, Armstrong Close and Fort Drive visual receptor (as summarised above).

For ease of reference the assessment of post-mitigation impacts is re-provided in the table below.

Landscape Receptors

PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT					
			SIGNIFICANCE	ADV/BEN	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 Assessment Pre-Mitigation	Minor	ADV	MT	Direct	T	R
Construction	3a: Knockholt and Halstead Wooded Downs	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Minor	ADV	MT	Direct	T	R
Construction	5a: Chevening Scarp LCA	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	MT	Direct	T	R

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

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	RESIDUAL EFFECT					
			SIGNIFICANCE	ADV/BEN	ST/MT/LT	D/IND	P/T	R/IRR
Settlement								
Construction	Crow Drive, Armstrong Close and Fort Road	The effect would slightly to those reported in Section 7.6 Assessment Pre-Mitigation	Moderate-Minor	ADV	MT	D	T	R
Construction	Halstead	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	MT	D	T	R
Construction	Knockholt and Knockholt Pound	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	MT	D	T	R
Construction	Otford (inc. Twitton and Shoreham	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	MT	D	T	R
Construction	Sevenoaks (inc. Dunton Green and Riverhead)	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	MT	D	T	R
Principal Routes								
Construction	M25	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	MT	D	T	R
Construction	A224 Pole Hill	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Minor	ADV	MT	D	T	R
Construction	A25	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	MT	D	T	R
Local Roads								
Construction	Star Hill	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Minor	ADV	MT	D	T	R
Construction	Otford Lane	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	MT	D	T	R
Recreational Routes								
Construction	North Downs Way	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	MT	D	T	R
Construction	Darent Valley Path	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	MT	D	T	R
Construction	PRoW around the Application Site	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Moderate	ADV	MT	D	T	R
Settlement								
Operation	Crow Drive, Armstrong Close and Fort Road	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Minor	BEN	LT	D	P	IRR
Operation	Halstead	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	LT	D	P	IRR
Operation	Knockholt and Knockholt Pound	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	LT	D	P	IRR
Operation	Otford (inc. Twitton and Shoreham)	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	LT	D	P	IRR
Operation	Sevenoaks (inc. Dunton Green and Riverhead)	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	LT	D	P	IRR
Principal Routes								
Operation	M25	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	LT	D	P	IRR

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PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT					
			SIGNIFICANCE	ADV/BEN	ST/MT/LT	D/IND	P/T	R/IRR
Operation	A224 Pole Hill	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	LT	D	P	IRR
Operation	A25	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	LT	D	P	IRR
Local Roads								
Operation	Star Hill	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Minor	BEN	LT	D	P	IRR
Operation	Otford Lane	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	LT	D	P	IRR
Recreational Routes								
Operation	North Downs Way	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	LT	D	P	IRR
Operation	Darent Valley Path	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Negligible	Neutral	LT	D	P	IRR
Operation	Other Public Rights of Way	The effect would remain the same as those reported in Section 7.6 Assessment Pre-Mitigation	Moderate	BEN	LT	D	P	IRR

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

5.9 LANDSCAPE & VISUAL: INTER-CUMULATIVE SCHEME IMPACTS

There is no change to the landscape and visual inter-cumulative scheme impacts since the 2019 ES. As recorded no cumulative schemes have been considered in the EIA.

6 HISTORIC ENVIRONMENT & BUILT HERITAGE

6.1 INTRODUCTION

Company

Built Heritage

The assessment of built heritage effects reported in this chapter has been undertaken by RPS Group (formerly CgMs).

Archaeology

The assessment of archaeological effects reported in this chapter has been undertaken by Waterman Infrastructure & Environment.

Author

Built Heritage: Thomas Copp BA (Hons) MA AssocIHBC

Archaeology: Ian Barnes BSc (Hons) MCIfA

Chapter Purpose

The purpose of this chapter of the ES Addendum is to assess the changes to the likely significant effects of the proposed development on the environment in terms of built heritage and archaeology since the 2019 ES was complied. The chapter and its supporting appendices should be read in conjunction with *Chapter 8 Historic Environment & Built Heritage* from the 2019 ES which describes 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 remain as follows:

- Outline the legislative and policy framework in regard to the historic environment;
- Identify and appraise the known and unknown heritage assets and historic environment resource at the site and in the surrounding area, which could be affected by the proposed development;
- Assess the likely impacts to these heritage assets;
- Identify suitable mitigation measures to reduce any adverse impacts; and
- Assess the residual significance of effect to the heritage assets.

Figures

N/A

Appendices

The appendices for the 2019 ES remain unchanged. They comprise:

- **Appendix 8.1**: Built Heritage Statement Site Wide (CGMS, 2019);
- **Appendix 8.2**: Built Heritage Statement Q14 Building (CGMS, 2019); and
- **Appendix 8.3**: Archaeological Desk-Based Assessment (ADBA), Fort Halstead (Waterman, 2019).

These baseline reports remain valid for the purposes of the ES Addendum and have not been updated.

An updated Conservation Management Plan has been prepared by RPS Group and is contained within **Appendix 6.1** of this ES Addendum.

6.2 METHODOLOGY

The methodology is unchanged from the 2019 ES.

Guidance

Built Heritage

- Historic Environment Good Practice Advice in Planning: 3 (2nd edition): The Setting of Heritage Assets (Historic England; 2017) [21].

Archaeology

- Standard and Guidance for historic environment desk-based assessment (Chartered Institute for Archaeologists (CIfA), 2017) [22];
- Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (English Heritage, 2008) [23];
- Design Manual for Roads and Bridges (DMRB), Volume 11 Environmental Assessment, Section 3 Environmental Topics, Part 2, HA 208/07 (Cultural Heritage Highways Agency, 2007) [24];
- Historic Environment Good Practice Advice in Planning Note 2 (GPA 2) – Managing Significance in Decision Taking (Historic England, 2015) [25]; and
- Historic Environment Good Practice Advice in Planning Note 3 – The Setting of Heritage Assets (Historic England, 2017) [26].

Legislation & Policy

- Planning (Listed Buildings and Conservation Areas) Act 1990 [27];
- Ancient Monuments and Archaeological Areas Act 1979 [28];
- NPPF (2019) (see Section 16 Conserving and enhancing the historic environment) [7];
- Sevenoaks District Council, Core Strategy, 2011(see Policy SP1) [19]; and
- Sevenoaks District Council, Allocations and Development Management Plan, 2015 (see Policy EN4) [29].

Consultees

Following the submission of the 2019 ES, further consultation has been undertaken with SDC and Historic England.

This included a meeting with relevant officers at SDC, including the Conservation Officer, on 4th February 2020 and a site meeting with Historic England on 2nd March 2020. The layout and design of the Village Centre (the detailed phase of the scheme) were discussed, with minor amendments made. These amendments do not alter the assessment within the Built Heritage Statement or the findings of the 2019 ES.

In addition, written consultation was also undertaken with Wendy Rogers (Senior Archaeological Officer, Heritage Conservation, KCC – archaeological advisor to SDC) on 10th March 2020. This reconfirmed the scope of archaeological work in terms of the desk-based assessment content and also the focus of mitigation with respect to the historic landscape.

Scoping

The scoping remains unchanged from the 2019 ES.

Consideration of Climate Change

As with the 2019 ES, climate change is not considered relevant to this chapter and is not discussed further.

Consideration of Human Health

As with the 2019 ES, human health is not considered relevant to this chapter and is not discussed further.

Consideration of Risk of Major Accidents and/or Disasters

As with the 2019 ES, risk of major accidents and/or disasters is not considered relevant to this chapter and is not discussed further.

Alternatives

As with the 2019 ES, alternatives specifically related to the historic environment have been considered.

Assessment of Baseline Conditions & Receptor Sensitivity

The baseline sources and information for built heritage and archaeology remain unchanged from the 2019 ES and are still valid.

HISTORIC ENVIRONMENT & BUILT HERITAGE

Assessment of Magnitude

The assessment of magnitude from the 2019 ES is unchanged and remains valid.

Assessment of Significance

The assessment of magnitude from the 2019 ES is unchanged and remains valid.

Relevant Associated Development

As with the 2019 ES, no relevant associated development has been identified or assessed.

Assumptions/Limitations

The assumptions and limitations of the 2019 ES remain unchanged.

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6.3 BASELINE CONDITIONS

Built Heritage

The built heritage baseline and future baseline is unchanged from the 2019 ES. The current baseline has been re-provided below.

KEY RECEPTORS	DESCRIPTION	SENSITIVITY	FURTHER INFORMATION
Fort Halstead including buildings F2, F3, F4, F5, F6, F7, F8, F9 and the Second World War Firewatcher's Post (Scheduled Monument; NHLE 1004214)	The Fort and all listed buildings contained within it are located centrally on the eastern edge of the site. Fort Halstead is a polygonal fort originally constructed as part of the London Defence Positions Scheme. The monument was later used for the development of the atomic bomb, at which point a number of purpose-built buildings were constructed within it. The monument includes two listed buildings (F11 and F16 & F17 (Listed as a single building)) which are discussed separately below. The remaining buildings within the Scheduled Monument are not listed or considered as non-designated and comprise a range of late 19th century structures constructed as part of the original Fort. They are predominantly constructed from red brick with limited architectural detailing. The monument also includes some post-war buildings, including gate lodges, constructed to serve the development of the atomic bomb. Its setting comprises the wider Fort Halstead complex and those buildings contained within it, which have been constructed from the early twentieth century.	High	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building F16, Grade II* Listed Building; NHLE 1412293)	Bomb chamber constructed in 1947 and specifically designed to assist the development of Britain's first atomic bomb. The building is constructed from reinforced concrete and is unique. It is listed for its historic interest as a purpose-built building constructed to aid the development of the atomic bomb. Its setting is intrinsically linked with the Detonation Chamber (the two buildings form part of the same listing) and it sits within the Fort Halstead Scheduled Monument.	High	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building F17 (Grade II* Listed Building; NHLE 1412293)	Detonation chamber constructed in 1947 and specifically designed to assist the development of Britain's first atomic bomb. The building is constructed from reinforced concrete and red brick and is unique. It is listed for its historic interest as a purpose-built building constructed to aid the development of the atomic bomb. Its setting is intrinsically linked with the Bomb Chamber (the two buildings form part of the same listing) and it sits within the Fort Halstead Scheduled Monument.	High	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building F11 (Grade II Listed Building; NHLE 1412292)	Filling Shed constructed in 1938. This building is one of the earliest buildings in the country specifically designed for rocketry research and an extremely rare pre-Second World War survival. It is listed for its rarity and role in developing the atomic bomb. It is located within the Fort Halstead Scheduled Monument and shares a close functional and visual relationship with those immediately surrounding buildings.	Medium	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building Q14 (Grade II Listed Building NHLE 1396578)	The Assembly Building was constructed to assemble the constituent parts of the prototype atomic bomb. It is located to the west of the Scheduled Monument. The building is constructed from red brick probably encasing a steel frame with a concrete roof. It is listed for its historic interest as a purpose-built construction built to serve the development of the atomic bomb. The setting of the building includes its links with the surrounding research and manufacturing buildings that were purpose-built to manufacture Britain's first atomic bomb.	Medium	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building F14 (Non-designated Heritage Asset, recorded in the Kent HER)	Laboratory building constructed in 1922 as part of the re-use of Fort Halstead following the First World War. It was later converted to a house. The building possesses historic interest linked to its research role following the First World War when the fortification began to assume other uses, beyond being a purely defensive structure. It is a single-storey brick building of no architectural interest. The building is constructed from brick and has an enclosed setting within the scheduled area. It has a functional link with the surrounding buildings.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building F18 (Non-designated Heritage Asset, recorded in the Kent HER)	The Recording Laboratory constructed in 1948. The building's importance derives from its historic interest as part of the development of the atomic bomb. It has limited architectural interest, being a simple red-brick construction. The building functioned alongside buildings F16 and 17 and shares a strong functional association which is central to its sensitivity and importance.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building A14 (Non-designated Heritage Asset, recorded in the Kent HER)	Late 19th century caretakers' cottages constructed to accommodate the caretakers of the Fort. They are located immediately north of the Scheduled Monument and demonstrate the origins of the Fort and share a functional link with the Scheduled Monument. They are constructed from brick with a pitched slate roof and are of limited architectural interest.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building A13 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	Tool Store constructed for the original Mobilisation centre around the turn of the 20th century. The building demonstrates the origins of the Fort and its original use, which contributes to its importance. The building is located immediately north of the Scheduled Monument and to the west of A14. Its	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)

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KEY RECEPTORS	DESCRIPTION	SENSITIVITY	FURTHER INFORMATION
	importance is derived from its historic role and important role within the fortification.		
Building A10 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	Constructed between 1936-44 to accommodate workers associated with rocketry research. The building is located to the north-east of the Scheduled Monument and is surrounded by infrastructure and buildings associated with rocketry research and the later development of the atomic bomb. This is integral to the importance of the building because, while it is of limited importance in its own right, it played an important role in the development of the atomic bomb and in facilitating the wider development and operation of the Fort.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building A11 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	A11 is a single-storey building constructed at approximately the same time as A10 and served as an additional research building. It is located to the north-east of the Scheduled Monument. It is surrounded by infrastructure and buildings associated with rocketry research and the later development of the atomic bomb which relate to its importance as a research building assisting the development of the atomic bomb.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building F1 and F10 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	A pair of entrance lodges constructed in 1946-47. The buildings are small, red-brick constructions that were built to provide additional security to the Fort given the sensitive nature of works undertaken there. Their setting is linked to their function and position on the edge of the wider Fort.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building F12 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	Constructed in 1938-39. Although its exact function is unknown, it is presumed to have been constructed to provide additional research rooms to assist the development of rocketry technology. It shares a functional association with the surrounding contemporary buildings and is located within the Fort. The importance of the building is derived from its historic role in developing the atomic bomb.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building F13 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	Small brick magazine constructed in 1938-39. It shares a functional association with the surrounding contemporary buildings within the Scheduled Monument.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building F15 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	Single-storey toilet block constructed between 1936-46. It shares a functional association with the surrounding buildings and infrastructure within the Scheduled Monument.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building Q1 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	Laboratory, offices and dark room constructed in or after 1939. The building is a single-storey brick construction which shares a functional link with the surrounding buildings, particularly those associated with the development of rocketry research and manufacture. It is located to the north-west of the Scheduled Monument and its importance is derived from its role in developing the atomic bomb. The surrounding buildings therefore contribute to its importance.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building Q3 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	Double-height brick workshop constructed between 1947-49 to aid research into the detonators for the atomic bomb. It is located to the north-west of the Scheduled Monument. The building shares a functional link with the contemporary buildings associated with the research and manufacture of the atomic bomb. It is a simple red-brick construction and its importance is derived from its role in developing the atomic bomb.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Buildings Q4 and Q4-1 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	Storage building constructed in 1947-49 to hold casings and parts associated with the development of the prototype atomic bomb. The buildings share a functional link with the contemporary buildings associated with the research and manufacture of the atomic bomb which contributes to their importance. They are located centrally within the site.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Building Q13 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	Constructed in approximately 1939 as the chemical laboratory to aid rocketry research. It is a large and prominent, two-storey building and shares a functional link with the surrounding buildings and infrastructure. It is located immediately east of the listed G14 building and its importance is derived from its important role in rocketry research and, ultimately, the development of the atomic bomb.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Buildings X2 and X3 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	Single-storey brick buildings constructed between 1939-44. Their original function is not known but they were constructed to aid rocketry research. They form part of a grouping of contemporary buildings which contributes to their sensitivity and are located immediately west of the Scheduled Monument.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Buildings X4, X5 X6, X7 and X11, X12, X13 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	These buildings comprise a series of interlinked magazines constructed between 1936-47. The buildings form part of the wider complex of buildings constructed to aid rocketry research which is the key element of their sensitivity. The buildings are located southwest of the schooled monument within the southern extent of the site.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Buildings X8 and X9 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	These are a pair of explosive testing chambers with associated control rooms. They were purpose built between 1936-47 and aided the ongoing research. They are located within the southern part of the site.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Buildings X38 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	Single-storey brick building constructed between 1936-44 and later served as a physics laboratory. It forms part of the X enclave and is associated with the other buildings constructed to aid rocketry research which is integral to its importance. It is located centrally within the site.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)

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KEY RECEPTORS	DESCRIPTION	SENSITIVITY	FURTHER INFORMATION
Buildings X44 and X45 (Other Non-designated Heritage Assets identified by the authors of this Chapter)	Series of flat-roofed buildings constructed to provide testing facilities and associated buildings. They were developed between 1949-57 to aid ongoing research and share a functional link with the surrounding buildings. They are located within the western area of the site, immediately south of Crow Drive.	Low	Section 3.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)

Archaeology

The archaeology baseline and future baseline is unchanged from the 2019 ES. The current baseline has been re-provided below.

KEY RECEPTORS	DESCRIPTION	SENSITIVITY	FURTHER INFORMATION
Fort Halstead Scheduled Monument	The scheduled fort is located within the south-eastern extent of the site. It consists of a post-medieval to modern defensive structure which is polygonal in plan and surrounded by earthen ramparts and a deep external moat. The Fort was scheduled based on its many important functions since its construction; including a late 19th century mobilisation centre as part of the London Defence Positions Scheme modified in the 1930s for research purposes (rocketry research) and again in the late 1940s for research into atomic bombs. Its setting comprises the wider complex of Fort Halstead and associated research and office buildings contained within it, which primarily date to the early 20th century. The monument contains two Listed Buildings (Grade II and Grade II*), which are discussed separately. The monument is however included within the archaeological assessment due to the possibility of revealing archaeological remains such sections of the late 19th century perimeter ditch. The ditch which was likely infilled in the late 1940s to facilitate access to the wartime explosives filling sheds (such as experimental filling shed F11, erected in 1938 for filling cordite rocket motors). There is therefore, the potential for explosive materials to be present within the moat infill as a result of the backfilling operation. Due to the scheduled status of the Fort its sensitivity is considered to be high.	High	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)
Prehistoric trackway	The course of a suspected prehistoric trackway has been projected across the most northern extent of the site, which is currently occupied by roads and buildings (such as Armstrong Close and Crow Drive). A small section of the projected trackway crosses a grassed area within the north-eastern corner of the site, which has historically been used as a sports and social facility. It is suggested the trackway originated in the prehistoric period and used in the medieval period, however, no supporting field investigations have been undertaken to confirm its location and preservation within the site. This asset is considered of low sensitivity based on its potential localised value.	Low	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)
Outfarms south of Polhill Arms Public House and north-west of Dunton Green Lime Works	The sites of 2 outfarms have been identified within the northern extent of the site off Pollhill (the A224) and to the north-east of the Scheduled Monument. The buildings have now been demolished but associated archaeological remains may survive buried below ground. The assets are of low sensitivity based on their potential local value.	Low	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)
Historic landscape	The Historic Landscape Character (HLC) types within the site and surrounding study area indicate the land has continued to be mainly agricultural fields (some of which display elements of post 1801 settlement), woodland and fields bounded by paths and tracks. As per the Area of Outstanding Natural Beauty (AONB) report submitted as part of this ES, the ancient woodland together with areas of chalk and semi-improved and neutral grassland form a key landscape feature within the site. Although the majority of the site was covered by woodland up until the end of the 19th century, there is evidence of a suspected prehistoric trackway within the northern extent of the site and a likely post-medieval bank boundary that defines part of the limits of part of the woodland at a time when it was divided into three parcels (recorded as Beaumont Wood, Dutchmore Wood and Anisbirches Wood). This is evidenced from the 1871 OS map, which shows it running into the northern extent of the site and separating woodland from open fields. This landscape feature is of low sensitivity given it still survives to a greater extent outside of the site and is considered to be of low value.	Low	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)

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KEY RECEPTORS	DESCRIPTION	SENSITIVITY	FURTHER INFORMATION
As yet unknown buried archaeological remains – Prehistoric (500,000 BC to AD 43)	The only known prehistoric evidence within the site is the suspected prehistoric route of Pilgrim's Way. Prehistoric activity within the study area is primarily represented by isolated finds. It is likely that the site remained densely wooded at this time, and the trackway may have formed part of a formalised route through the wood. While the construction of buildings and landscaping would have led to the truncation and possible loss of any surviving below ground archaeology, the extent of such disturbance is currently not understood due to a lack of previous archaeological investigations within the site. The combination of the extent of historic development and sparse nature of archaeological material of this date in the surrounding area supports the conclusion that there is low potential for further as yet unknown prehistoric remains within the site.	Low	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)
As yet unknown buried archaeological remains – Romano-British (AD 43 to AD 410)	No known archaeological remains of this period have yet been identified within the Site. Romano-British activity is principally located within or to the north of a cremation cemetery at Frog Farm approximately 1.4km east of the site. While the construction of buildings and landscaping would have led to the truncation and possible loss of any surviving below ground archaeology, the extent of such disturbance is currently not understood due to a lack of previous archaeological investigations within the site. The combination of the extent of historic development and the interpretation of archaeological material of this date within the study area (as presented within the ADBA) supports the conclusion that there is low potential for further as yet unknown Romano-British remains within the site.	Low	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)
As yet unknown buried archaeological remains – Early medieval (AD 410 to AD 1066)	No known archaeological remains of this period have yet been identified within the site. The Anglo-Saxon cemetery at Polhill, approximately 200m south-east of the site, is the primary known early medieval asset within the study area. While the presence of a cemetery suggests a settlement within the study area, no corroborating evidence has been identified. While the construction of buildings and landscaping would have led to the truncation and possible loss of any surviving below ground archaeology, the extent of such disturbance is currently not understood due to a lack of previous archaeological investigations within the site. The combination of the extent of historic development and sparse nature of archaeological material of this date within the study area supports the conclusion that there is low potential for further as yet unknown early medieval remains within the site.	Low	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)
As yet unknown buried archaeological remains – Medieval (AD 1066 to AD 1540)	No known archaeological remains of this period have yet been identified within the Site. It is likely that the Site was wooded in this period, though evidence of moated sites, timber framed buildings and findspots exist predominantly to the north, north-east, east and south of the site. While the construction of buildings and landscaping would have led to the truncation and possible loss of any surviving below ground archaeology, the extent of such disturbance is currently not understood due to a lack of previous archaeological investigations within the site. The combination of the extent of historic development and strong likelihood that the site would have been wooded during this period (as summarised within the ADBA) supports the conclusion that there is low potential for further as yet unknown medieval remains within the site.	Low	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)
As yet unknown buried archaeological remains – Post-medieval (AD 1540 to AD 1901)	Historic mapping suggests the site began to develop from at least the 1870s onwards with more substantial changes to the woodland. Widespread farming activity is noted within the study area during the post-medieval period. While the construction of buildings and landscaping would have led to the truncation and possible loss of any surviving below ground archaeology, the extent of such disturbance is currently not understood due to a lack of previous archaeological investigations within the site. The combination of the extent of historic development and concentrated nature of such archaeological material, particularly in known areas of development such as surrounding the woodland boundary, the fort and within the study area, supports the conclusion that there is medium potential for further as yet unknown post-medieval remains within the site.	Low	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1 of this ES Addendum)

6.4 POTENTIAL SIGNIFICANT EFFECTS

Built Heritage

The potential significant impacts to built heritage are unchanged from the 2019 ES and have been re-provided below.

PHASE	DESCRIPTION	ADVERSE/BENEFICIAL
Construction	Demolition of existing buildings and loss of existing historic context, as a result.	Adverse
Construction	Repairs and alterations to existing buildings, including reinstatement of historic features.	Beneficial
Construction	Creation of new views by demolition and/or vegetation clearance to allow greater appreciation of heritage assets.	Beneficial

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PHASE	DESCRIPTION	ADVERSE/BENEFICIAL
Operation	Provision of long-term viable uses for the retained heritage assets.	Beneficial
Operation	Enhanced public access, including creation of new public square and heritage trail.	Beneficial

Archaeology

The potential significant impacts to archaeology are unchanged from the 2019 ES and have been re-provided below.

PHASE	DESCRIPTION	ADVERSE/BENEFICIAL
Construction	General intrusive works, including excavations and any ancillary associated works (such as service trenching and excavations for ecological mitigation areas and attenuation ponds) which could lead to the truncation or complete removal of known (such as the woodland bank) and as yet unknown buried archaeological remains.	Adverse

6.5 DESIGN INTERVENTIONS

The design interventions are unchanged from the 2019 ES and have been re-provided below.

DESIGN INTERVENTION	DESCRIPTION	REASON FOR INTERVENTION	FURTHER INFORMATION
Retention of most important heritage assets within the masterplan	The masterplan has been developed to retain the most important buildings and those elements of setting that make the greatest contribution to the importance of the retained designed heritage assets. More buildings will be retained than the approved masterplan.	To retain as many non-designated heritage assets as possible and those elements of setting that make the greatest contribution to the importance of the designated heritage assets and minimise any adverse impacts.	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)

No design interventions have been implemented in regards to archaeology.

6.6 ASSESSMENT PRE-MITIGATION (INCLUDING DESIGN INTERVENTION)

Built Heritage

The changes to the proposed development include a reduction in the quantum and density of residential development. The changes to the parameter plans demonstrating the land use and building heights will not alter the settings of the identified built heritage assets. The proposed demolition also remains unchanged and the proposed uses for the retained buildings are unchanged. Therefore, the previous built heritage assessment pre-mitigation remains unchanged from the 2019 ES and has been re-provided below.

PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Construction	Fort Halstead, including buildings F2, F3, F4, F5, F6, F7, F8, F9 and the Second World War Firewatcher's Post	Demolition of existing buildings within setting. This includes the demolition of a number of buildings that have not been identified as non-designated heritage assets (with the exception of Buildings Q1, Q3, Q4 and Q4-1). The buildings currently provide context and reflect the historic interest of the Scheduled Monument, which was originally constructed as a mobilisation centre before being converted to assist rocketry research and the development of Britain's atomic bomb. The buildings to be demolished are 20th century buildings constructed to assist this process and contribute to its importance by demonstrating the development of the wider Fort in the 20th century. However, all buildings to be demolished were previously consented to be demolished as part of the 2015 application and the current scheme includes the retention of a greater number of buildings than the previous application. The overall significance of effect does, however, remain unchanged from that previous assessed in the 2015 ES.	Large	Major Adverse	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Fort Halstead, including buildings F2, F3, F4, F5, F6, F7, F8, F9 and the Second World War Firewatcher's Post	Creation of new views by demolition and/or vegetation clearance to allow greater appreciation of heritage assets. This will include vegetation clearance on the Scheduled Monument to enable a greater appreciation of its structure and defensive properties. The demolition of buildings within the Q area and the creation of the Town Square will allow additional views from the north-west and a greater appreciation of the Fort. Together these changes will better reveal the importance of the building and allow its architectural and historic interest to be experienced and appreciated from within the site.	Medium	Moderate Beneficial	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)

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PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Construction	Building F16 and Building F17	Demolition of existing buildings within setting. This includes the demolition of a number of buildings that have not been identified as non-designated heritage assets (with the exception of Buildings Q1. Q3, Q4 and Q4-1). The buildings currently provide context and reflect the historic interest of listed buildings, which were originally constructed as a mobilisation centre before being converted to assist rocketry research and the development of Britain's atomic bomb. The buildings to be demolished are 20th century buildings constructed to assist this process and contribute to its importance by demonstrating the development of the wider Fort in the 20th century. However, all buildings to be demolished were previously consented to be demolished as part of the 2015 application.	Medium	Moderate Adverse	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Building F16 and Building F17	Creation of new views by demolition and/or vegetation clearance to allow greater appreciation of heritage assets. This will include vegetation clearance from the Scheduled Monument and the demolition of buildings within the Q area. However, the magnitude of impact will be limited due to the setting of the heritage assets which is primarily focused on their location within the Fort and their relationship with other buildings within the Fort.	Small	Minor Beneficial	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Building F11	Demolition of existing buildings within setting. This includes the demolition of a number of buildings that have not been identified as non-designated heritage assets (with the exception of Buildings Q1. Q3, Q4 and Q4-1). The buildings currently provide context and reflect the historic interest of listed buildings, which were originally constructed as a mobilisation centre before being converted to assist rocketry research and the development of Britain's atomic bomb. The buildings to be demolished are 20th century buildings constructed to assist this process and contribute to its importance by demonstrating the development of the wider Fort in the 20th century. However, all buildings to be demolished were previously consented to be demolished as part of the 2015 application.	Medium	Minor Adverse	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Building F11	Creation of new views by demolition and/or vegetation clearance to allow greater appreciation of heritage assets. This will include vegetation clearance from the Scheduled Monument and the demolition of buildings within the Q area. However, the magnitude of impact will be limited due to the setting of the heritage assets which is primarily focused on their location within the Fort and their relationship with other buildings within the Fort.	Small	Negligible Beneficial	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Building Q14	Demolition of existing buildings within setting, including the majority of the buildings within Q section and four non-designated heritage assets. Although the number of buildings to be demolished is reduced from the 2015 application, this will still lead to the loss of historic context and limit the ability to understand the importance of the building as an integral component of the development of the atomic bomb.	Large	Moderate Adverse	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Building Q14	Creation of new views by demolition to allow greater appreciation of heritage assets. The buildings will be incorporated into, and become a prominent part of, the new Town Square. Views will be created by the demolition of the surrounding buildings while the public space will provide additional prominence to the building and allow its architectural interest to be appreciated.	Small	Negligible Beneficial	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Building Q14	Repairs and alterations to existing building, including reinstatement of historic features. These repairs are subject to a separate Listed Building Consent application and will include the reinstatement of windows and doors and the removal of later insertions to better reveal the historic footprint of the listed building, which is linked to its original use.	Large	Moderate Beneficial	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Building F14 and Building F18	Demolition of existing buildings within setting. This includes the demolition of a number of buildings that have not been identified as non-designated heritage assets (with the exception of Buildings Q1. Q3, Q4 and Q4-1). The buildings currently provide context and reflect the historic interest of listed buildings, which were originally constructed as a mobilisation centre before being converted to assist rocketry research and the development of Britain's atomic bomb. The buildings to be demolished are 20th century buildings constructed to assist this process and contribute to its importance by demonstrating the development of the wider Fort in the 20th century. However, all buildings to be demolished were previously consented to be demolished as part of the 2015 application.	Moderate	Minor Adverse	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Building F14 and Building F18	Creation of new views by demolition and/or vegetation clearance to allow greater appreciation of heritage assets. This will include vegetation clearance from the Scheduled Monument and the demolition of buildings within the Q area. However, the magnitude of impact will be limited due to the setting of the heritage assets which is primarily focused on their location within the Fort and their relationship with other buildings within the Fort.	Small	Negligible Beneficia	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Q1, Q3, Q4 and Q4-1	Demolition of existing buildings (including Q1, Q3, Q4 and Q4-1). This will lead to the total loss of these non-designated heritage assets.	Very Large	Moderate Adverse	Building Recording	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Building A10, Building A11, Building A13, Building A14, Building Q13	Demolition of existing buildings within setting. This will include the demolition of some buildings within the A area and H area which share an historic association with these buildings. Their historic uses and associations with one another will however remain legible.	Large	Minor Adverse	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Building A10, Building A14,	Creation of new views by demolition to allow greater appreciation of heritage assets. This would include some buildings within close proximity to open up additional	Small	Negligible Beneficial	No	Section 4.0, Appendix 8.1

HISTORIC ENVIRONMENT & BUILT HERITAGE

PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
	Building A11, Building A13, Building A14, Building Q13	views of these non-designated heritage assets. However, any such impact would be limited.				(contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Building Q13	Repairs and alterations to existing building, including reinstatement of historic features. This will include the reinstatement of windows and removal of later additions to better reveal the original form of the building.	Medium	Minor Beneficial	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Building F1, Building F10, Building F12, Building F13, Building F15, Building X2, Building X3, Building X4, Building X5, Building X6, Building X7, Building X11, Building X12, Building X13, Building X8, Building X9, Building X38, Building X44 and Building X45	Demolition of existing buildings within setting. This would include the demolition of a number of buildings in Areas F and X that have not been identified as non-designated heritage assets but do provide historic context.	Medium	Minor Adverse	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Building F1, Building F10, Building F12, Building F13, Building F15, Building X2, Building X3, Building X4, Building X5, Building X6, Building X7, Building X11, Building X12, Building X13, Building X8, Building X9, Building X38, Building X44 and Building X45	Creation of new views by demolition and/or vegetation clearance to allow greater appreciation of heritage assets. This would include views from the surrounding areas, although much of the existing built form to be demolished within these assets' settings will be replaced by new development and any such impacts will be limited in magnitude.	Small	Negligible Beneficial	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Operation	Fort Halstead, including buildings F2, F3, F4, F5, F6, F7, F8, F9 and the Second World War Firewatcher's Post and Building F16 and Building F17	Provision of long-term viable uses for the retained structures and enhanced public access, including creation of new public square and heritage trail. This will ensure the long-term conservation of these heritage assets and greater appreciation of them by the public. The creation of the heritage centre and heritage trail may be led by a conservation management plan (to be secure by condition) and would be informed by additional research and consultation.	Large	Major Beneficial	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Operation	Building F11 and Building Q14	Provision of long-term viable uses for the retained structures and enhanced public access, including creation of new public square and heritage trail. This will ensure the long-term conservation of these heritage assets and greater appreciation of them by the public.	Large	Moderate Beneficial	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Operation	Building F14, Building F18 and A14	Provision of long-term viable uses for the retained structures and enhanced public access, including creation of new public square and heritage trail. This will ensure the long-term conservation of these heritage assets and greater appreciation of them by the public.	Large	Minor Beneficial	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)

HISTORIC ENVIRONMENT & BUILT HERITAGE

PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	Building A13, Building A10, Building A11, Building F1, Building F12, Building F13, Building F15, Building Q1, Building Q3, Building Q4, Building Q4-1, Building Q13, Building X2, Building X3, Buildings X4, Building X5, Building X6, Building X7, Building X11, Building X12, Building X13, Building X8, Building X9, Building X38, Building X44 and Building X45	Provision of long-term viable uses for the retained structures and enhanced public access, including creation of new public square and heritage trail. This will ensure the long-term conservation of these heritage assets and greater appreciation of them by the public.	Large	Minor Beneficial	No	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)

Archaeology

Similarly, the changes to the proposed development have not resulted in a change to the archaeological pre-mitigation assessment identified in the 2019 ES and has been re-provided below.

PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE/EFFECT PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Construction	Fort Halstead Scheduled Monument	The proposed development would likely have a physical impact on the scheduled fort, especially where it is required to make alterations to facilitate conversion into a heritage interpretation centre. Any physical works, including the removal of trees within and immediately adjacent to the Scheduled Monument boundary may reveal associated archaeological remains such as a suggested infilled section of late 19th century ditch. Any such works would require Scheduled Monument Consent (SMC) prior to the commencement of such works. The assessed effect would be the same as the consented scheme.	Large	Major Adverse	Yes	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Prehistoric trackway	The proposed development could have a physical impact on a part of the suspected prehistoric trackway, especially where construction for residential housing is required in the current grassland area within the north-eastern extent of the site. Although the part of the trackway that be affected by the works within the site is relatively small in relation to its projected entire route, the partial loss of the asset would still need to be considered. The assessed effect would be the same as the consented scheme.	Small	Minor Adverse	Yes	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Outfarms south of Polhill Arms Public House and north-west of Dunton Green Lime Works	As the outfarm south of the former Polhill Arms Public House within the northern extent of the site does not lie within an area where intrusive works are proposed, it shall not be considered further in this assessment. However, the site of the former outfarm north-west of Dunton Green lies within an area planned for employment uses bordering the eastern part of the Scheduled Monument. As such, there is potential for construction works associated with the development of the employment area to impact associated buried archaeological remains should they survive. The assessed effect would be the same as the consented scheme.	Small	Minor Adverse	Yes	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	As yet unknown buried archaeological remains (associated with Scheduled Monument)	It is considered that there may be as yet unknown buried archaeological remains associated with the Scheduled Monument within the site which could be subject to physical impacts due to the construction phase. Due to their direct association with the Scheduled Monument, such remains would likely be considered to be of equal value to the monument. The assessed effect would be the same as the consented scheme.	Medium	Major Adverse	Yes	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Historic landscape	The historic landscape has been characterised as being predominantly woodland until the end of the 19th century, with elements of field boundaries (see above). The assessed effect would be the same as the consented scheme.	Medium	Moderate Adverse	No	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)

HISTORIC ENVIRONMENT & BUILT HERITAGE

PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE/EFFECT PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Construction	As yet unknown buried archaeological remains – Prehistoric (500,000 BC to AD 43)	The presence of any as yet unknown buried archaeological remains dating from the prehistoric period cannot be discounted in areas of historically undisturbed ground. As such, as yet unknown assets could experience physical impacts due to construction activities. The assessed effect would be the same as the consented scheme.	Medium	Minor Adverse	Yes	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	As yet unknown buried archaeological remains – Romano-British (AD 43 to AD 410)	The presence of any as yet unknown buried archaeological remains dating from the Romano-British period are likely to be encountered in areas of historically undisturbed ground. As such, as yet unknown assets could experience physical impacts due to construction activities. The assessed effect would be the same as the consented scheme.	Medium	Minor Adverse	Yes	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	As yet unknown buried archaeological remains – Early medieval (AD 410 to AD 1066)	The presence of any as yet unknown buried archaeological remains dating from the early medieval period are likely to be encountered in areas of historically undisturbed ground due to construction and landscaping works from the early 1900s onwards. As such, as yet unknown assets could experience physical impacts due to construction activities. The assessed effect would be the same as the consented scheme.	Medium	Minor Adverse	Yes	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	As yet unknown buried archaeological remains – Medieval (AD 1066 to AD 1540)	The presence of any as yet unknown buried archaeological remains dating from the medieval period are likely to be encountered in areas of historically undisturbed ground due to construction and landscaping works from the early 1900s onwards. As such, as yet unknown assets could experience physical impacts due to construction activities. The assessed effect would be the same as the consented scheme.	Medium	Minor Adverse	Yes	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	As yet unknown buried archaeological remains – Post-medieval (AD 1540 to AD 1901)	The presence of any as yet unknown buried archaeological remains dating from the post-medieval period are likely to be encountered in areas of historically undisturbed ground due to construction and landscaping works from the early 1900s onwards. As yet unknown buried archaeological remains associated with Scheduled Monument are discussed separately above. As such, as yet unknown assets could experience physical impacts due to construction activities. The assessed effect would be the same as the consented scheme.	Medium	Minor Adverse	Yes	Appendix 8.3 (contained within the 2019 ES, Appendix 1.1, Volume II)

6.7 MITIGATION & ENHANCEMENT MEASURES

Built Heritage

The mitigation and enhancement measures related to built heritage are unchanged from the 2019 ES and have been re-provided below.

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER	MAGNITUDE POST-MITIGATION	ADVERSE/BENEFICIAL	FURTHER INFORMATION
Construction	Loss of existing buildings with heritage value, specifically Buildings Q1, Q3, Q4 and Q4-1	Building Recording to appropriate level to allow recording, dissemination and archiving to provide a permanent record of the buildings and any features of architectural and/or historic interest they possess	Planning condition	Very Large	Adverse	Section 4.0, Appendix 8.1 (contained within the 2019 ES, Appendix 1.1, Volume II)

HISTORIC ENVIRONMENT & BUILT HERITAGE

Archaeology

The mitigation and enhancement measures related to archaeology are unchanged from the 2019 ES aside from that recommended for the Historic Landscape receptor following consultation with KCC Heritage Conservation (KCCHC). The previous measure and additional detail on the new measure is provided below.

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER	MAGNITUDE POST-MITIGATION	ADVERSE/BENEFICIAL	FURTHER INFORMATION
Construction	Potential for truncation and/or complete removal of known and as yet buried archaeological remains (non-designated prehistoric to modern remains and post-medieval to modern designated remains)	A programme of archaeological monitoring and recording during ground intrusive works (including for example attenuation ponds, ecological mitigation sites, service excavation, grubbing out of foundations where buildings are being demolished etc) is proposed. It is currently understood that the development would be undertaken in phases (likely 13 phases between 2020-2031). The scope and programme of appropriate archaeological phasing of works (such as watching briefs, evaluation and strip, map and record excavation) would need to be confirmed in consultations with KCCHC following submission of the EIA. The methodology for any archaeological works would be subject to an Archaeological Written Scheme of Investigation for the approval of KCCHC. Outline Planning Application for the extant scheme was granted in December 2015 (application reference SE/15/00628/OUT). The following conditions were attached: • *Prior to commencement of any works to the Scheduled Ancient Monument details shall be submitted to, and approved in writing by the Local Planning Authority of any proposed landscaping works, including the removal of trees within the curtilage of the Scheduled Ancient Monument. No development will be carried out otherwise than in accordance with the approved details.* • *Before each phase of development identified pursuant to condition 5 is commenced no development shall take place until a written scheme of archaeological investigations has been submitted to and improved in writing by the Local Planning Authority. No development shall take place other in accordance with the programme of archaeological work provided for tin the written scheme of investigation. No development may take place in any area which is identified in the scheme of investigations (or by the work provided for by that scheme) as requiring a programme of archaeological investigation work until that programme has been completed in accordance with the scheme of investigation.* The potential presence of explosive materials in the moat represents a health and safety concern. The proposed development does not seek to expose the moat. As a result, it is not envisaged that examination or exploration of this feature would be proportionate or necessary as part of any archaeological mitigations as the moat will be preserved *in situ*.	Planning condition	Moderate	Adverse	N/A
Construction	Potential for truncation and/or complete removal of elements of the historic landscape	A programme of historic landscape survey will be completed prior to the commencement of intrusive works. This would involve: i. survey and assessment in accordance with a specification and written timetable which has been submitted to and approved by Heritage Conservation; and ii. a statement of safeguarding measures to ensure preservation in situ of important historic landscape features and/or further historic landscape recording.	Planning condition	Moderate	Adverse	Specification to be agreed with Heritage Conservation

HISTORIC ENVIRONMENT & BUILT HERITAGE

6.8 ASSESSMENT POST-MITIGATION

Built Heritage

The post-mitigation effects, and overall residual significance of effect, to built heritage assets are unchanged from the 2019 ES. They are re-provided below.

PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT					
			SIGNIFICANCE	ADV/BEN	ST/MT/LT	D/IND	P/T	R/IRR
Construction	Fort Halstead, including buildings F2, F3, F4, F5, F6, F7, F8, F9 and the Second World War Firewatcher's Post	Demolition of existing buildings and consequent loss of historic context. This will be mitigated by building recording of those non-designated heritage assets identified above, specifically Buildings Q1, Q3, Q4 and Q4-1. This will aid understanding and interpretation of these buildings and the wider Fort, including its historic development. Construction will also include the creation of new views to the Fort through clearance of buildings and vegetation.	Moderate	ADV	MT	D	T	IRR
Construction	Building F16 and Building F17	Demolition of existing buildings within the setting of the listed buildings and consequent loss of historic context. Demolition works will also create new views to the listed building.	Minor	ADV	MT	D	T	IRR
Construction	Building F11	Demolition of existing buildings within the setting of the listed building and consequent loss of historic context. Demolition works will also create new views to the listed building.	Minor	ADV	MT	D	T	IRR
Construction	Building Q14	Repairs to building, including the reinstatement of metal windows. Demolition of existing buildings and consequent loss of historic context. Demolition works will also create new views to the listed building.	Negligible	BEN	MT	D	T	IRR
Construction	Building F14 and Building F18	Demolition of existing buildings within the buildings' settings and consequent loss of historic context. Demolition works will also create new views to the listed buildings.	Minor	ADV	MT	D	T	IRR
Construction	Q1, Q3, Q4 and Q4-1	Demolition, which will be mitigated by building recording and dissemination of information.	Moderate	ADV	LT	D	P	IRR
Construction	Building A10, Building A11, Building A13 and Building A14	Demolition of existing buildings within the setting of the buildings and consequent loss of historic context. Demolition works will also create new views to the listed building.	Minor	ADV	MT	D	T	IRR
Construction	Building Q13	Repairs to building, including the reinstatement of metal windows. Demolition of existing buildings and consequent loss of historic context. Demolition works will also create new views to the listed building.	Negligible	BEN	MT	D	T	IRR
Construction	Building F1, Building F10, Building F12, Building F13, Building F15, Building X2, Building X3, Building X4, Building X5, Building X6, Building X7, Building X11, Building X12, Building X13, Building X8, Building X9, Building X38, Building X44 and Building X45	Demolition of existing buildings within the setting of the buildings, including buildings both within and outside of the Fort. This will lead to the loss of historic context. Demolition works will also create new views to the listed building.	Minor	ADV	MT	D	T	IRR
Operation	Fort Halstead, including buildings F2, F3, F4, F5, F6, F7, F8, F9 and the Second World War Firewatcher's Post and Building F16 and Building F17	Provision of long-term viable use and increased public appreciation, including public access and heritage trail.	Major	BEN	LT	D	P	IRR
Operation	Building F11 and Building Q14	Provision of long-term viable use and increased public appreciation, including public access and heritage trail.	Moderate	BEN	LT	D	P	IRR
Operation	Building F14, Building F18 and A14	Provision of long-term viable use and increased public appreciation, including public access and heritage trail.	Minor	BEN	LT	D	P	IRR

HISTORIC ENVIRONMENT & BUILT HERITAGE

PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT					
			SIGNIFICANCE	ADV/BEN	ST/MT/LT	D/IND	P/T	R/IRR
Operation	Building A13, Building A10, Building A11, Building F1, Building F12, Building F13, Building F15, Building Q1, Building Q3, Building Q4, Building Q4-1, Building Q13, Building X2, Building X3, Buildings X4, Building X5, Building X6, Building X7, Building X11, Building X12, Building X13,Building X8, Building X9, Building X38, Building X44 and Building X45	Provision of long-term viable use and increased public appreciation, including public access and heritage trail.	Minor	BEN	LT	D	P	IRR

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

Archaeology

The post-mitigation effects, and overall residual significance of effect, to archaeology are unchanged from the 2019 ES. They are re-provided below.

PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT					
			SIGNIFICANCE	ADV/BEN	ST/MT/LT	D/IND	P/T	R/IRR
Construction	Fort Halstead Scheduled Monument	No ongoing loss is anticipated after a programme of archaeological monitoring and recording during ground intrusive works and the subsequent construction phase have been completed.	Negligible	N/A	LT	D	P	IRR
Construction	Prehistoric trackway	No ongoing loss is anticipated after a programme of archaeological monitoring and recording during ground intrusive works and the subsequent construction phase have been completed.	Negligible	N/A	LT	D	P	IRR
Construction	Outfarm north-west of Dunton Green Lime Works	No ongoing loss is anticipated after a programme of archaeological monitoring and recording during ground intrusive works and the subsequent construction phase have been completed.	Negligible	N/A	LT	D	P	IRR
Construction	As yet unknown buried archaeological remains (associated with Scheduled Monument)	No ongoing loss is anticipated after a programme of archaeological monitoring and recording during ground intrusive works and the subsequent construction phase have been completed.	Negligible	N/A	LT	D	P	IRR
Construction	Historic landscape	No ongoing loss is anticipated after a programme of historic landscape survey, followed by archaeological monitoring and recording during ground intrusive works, and the subsequent construction phase have been completed.	Negligible	N/A	LT	D	P	IRR
Construction	As yet unknown buried archaeological remains – Prehistoric (500,000 BC to AD 43)	No ongoing loss is anticipated after a programme of archaeological monitoring and recording during ground intrusive works and the subsequent construction phase have been completed.	Negligible	N/A	LT	D	P	IRR
Construction	As yet unknown buried archaeological remains – Romano-British (AD 43 to AD 410)	No ongoing loss is anticipated after a programme of archaeological monitoring and recording during ground intrusive works and the subsequent construction phase have been completed.	Negligible	N/A	LT	D	P	IRR
Construction	As yet unknown buried archaeological remains – Early medieval (AD 410 to AD 1066)	No ongoing loss is anticipated after a programme of archaeological monitoring and recording during ground intrusive works and the subsequent construction phase have been completed.	Negligible	N/A	LT	D	P	IRR

HISTORIC ENVIRONMENT & BUILT HERITAGE

PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT					
			SIGNIFICANCE	ADV/BEN	ST/MT/LT	D/IND	P/T	R/IRR
Construction	As yet unknown buried archaeological remains – Medieval (AD 1066 to AD 1540)	No ongoing loss is anticipated after a programme of archaeological monitoring and recording during ground intrusive works and the subsequent construction phase have been completed.	Negligible	N/A	LT	D	P	IRR
Construction	As yet unknown buried archaeological remains – Post-medieval (AD 1540 to AD 1901)	No ongoing loss is anticipated after a programme of archaeological monitoring and recording during ground intrusive works and the subsequent construction phase have been completed.	Negligible	N/A	LT	D	P	IRR

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

6.9 HISTORIC ENVIRONMENT & BUILT HERITAGE: INTER-CUMULATIVE SCHEME IMPACTS

The inter-cumulative scheme impacts are unchanged from the 2019 ES and no inter-cumulative impacts have been identified.

7 BIODIVERSITY

7.1 INTRODUCTION

Company

Middlemarch Environmental Ltd.

Author

The preparation of *Chapter 9 Biodiversity* of the 2019 ES was overseen by Tom Docker, Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM) (Associate Director: EIA) has been a professional ecologist for 14 years, having qualified with an MSc in Ecology and Management of the Natural Environment from the University of Bristol. Tom currently manages the EIA team at Middlemarch Environmental Ltd and has authored and/or supervised over 20 ecology ES chapters in the past five years.

This chapter of the ES Addendum has been prepared by Hannah Train, Graduate member of the Chartered Institute of Ecology and Environmental Management (GradCIEEM). Hannah has worked in ecological consultancy for over six years, having qualified with an MSc in Environmental Biosciences in a Changing Climate from the University of Warwick. Hannah works in the EIA team at Middlemarch Environmental Ltd and has contributed to or authored over ten ecology ES chapters in the past four years.

Chapter Purpose

The purpose of this chapter of the ES Addendum is to describe the changes associated with the likely significant effects of the proposed development on the environment in terms of biodiversity since the 2019 ES was compiled. The chapter and its supporting appendices should be read in conjunction with *Chapter 9 Biodiversity* contained within the 2019 ES which 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 remain as follows:

- Consider the likely significant effects of construction phase impacts (such as habitat loss and disturbance) on designated sites of international, national and local importance, Habitats of Principal Importance and protected and notable species pre- and post-mitigation; and
- Consider the likely significant effects of operational impacts (such as recreation and lighting) on designated sites of international, national and local importance, Habitats of Principal Importance and protected and notable species pre- and post-mitigation.

Figures

Since 2019, all figures have been updated to take account of the scheme amendments. In addition, the previously submitted **Figure 9.2** (now **Figure 7.2**) has been updated to include two additional target notes (Target Notes 6 and 7) to show the location of non-native invasive plant species and the previously submitted **Figure 9.4** (now **Figure 7.4**) has been updated to reflect the results of the Updated Badger Survey, completed in 2020.

The updated figures have been provided within this ES Addendum and are listed below.

- **Figure 7.1**: Drawing C127947-ES-01 Rev A – Summary of Nature Conservation Sites;
- **Figure 7.2**: Drawing C127947-ES-02 Rev B – Summary of Habitats;
- **Figure 7.3**: Drawing C127947-ES-03 Rev A – Summary of Species; and
- **Figure 7.4**: Drawing C127947-ES-04 Rev B – Summary of Badger Activity (CONFIDENTIAL).

Appendices

The appendices which accompanied *Chapter 9 Biodiversity* of the 2019 ES are as follows:

- **Appendix 9.1**: Preliminary Ecological Appraisal (Report RT-MME-127947-01;
- **Appendix 9.2**: Preliminary Bat Roost Assessment (Report RT-MME-127947-03);
- **Appendix 9.3**: Nocturnal Emergence and Dawn Re-Entry Bat Surveys (Report RT-MME-127947-03);
- **Appendix 9.4**: Bat Activity Surveys (Report RT-MME-127947-04);
- **Appendix 9.5**: Badger Survey (Report RT-MME-127947-05), which has been updated in 2020 (see Appendix 7.2);
- **Appendix 9.6**: Breeding Bird Survey (Report RT-MME-127947-06);
- **Appendix 9.7**: Botanical Survey (Report RT-MME-127947-07);
- **Appendix 9.8**: Terrestrial Invertebrate Survey (Report RT-MME-127947-08);
- **Appendix 9.9**: Reptile Survey (Report RT-MME-127947-09);
- **Appendix 9.10**: Dormouse Survey (Report RT-MME-127947-10);
- **Appendix 9.11**: Winter Bird Survey (Report RT-MME-127947-11); and
- **Appendix 9.12**: Framework Ecological Mitigation Strategy (Report RT-MME-127947-12), which has been updated in 2020 (see Appendix 7.3).

The additional appendices which accompany this ES Addendum are as follows:

- **Appendix 7.1**: Updated Ecological Walkover (Report RT-MME-151857-01);
- **Appendix 7.2**: Updated Badger Survey (CONFIDENTIAL) (Report RT-MME-151857-02), which supersedes Appendix 9.5 from the 2019 ES;
- **Appendix 7.3**: Framework Ecological Mitigation Strategy (CONFIDENTIAL) (Report RT-MME-127947-12 Rev A), which supersedes Appendix 9.12 from the 2019 ES; and
- **Appendix 7.4**: Outline Landscape and Ecological Management Plan (Report RT-MME-151857-03).

7.2 METHODOLOGY

Guidance

There have been no changes to the guidance referred to in *Chapter 9 Biodiversity* of the 2019 ES:

- Chartered Institute of Ecology and Environmental Management (CIEEM) 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (2018) [30], herein referred to as the 'CIEEM Guidelines'.

Legislation & Policy

The legislation and policy documents listed below have not changed since the 2019 ES was submitted:

- Conservation of Habitats and Species Regulations 2017 (The Habitat Regulations 2017) [31];
- The Wildlife and Countryside Act 1981 (as amended) [32];
- The Countryside and Rights of Way Act 2000 [33];
- The Natural Environment and Rural Communities Act 2006 [34];
- The Hedgerow Regulations 1997 [35];
- UK Post-2010 Biodiversity Framework [36];
- NPPF (2019) [7];
- Sevenoaks District Council Core Strategy Adopted February 2011 – Policy SP 11: Biodiversity [37]; and
- Sevenoaks District Council Local Plan: Proposed Submission Version (2018) [8].

Consultees

Prior to the submission of the 2019 ES, scoping responses of relevance to biodiversity were received from KCC's Ecological Advice Service (EAS) (dated 18th December 2018) and Natural England (dated 19th

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December 2018). Further information is provided in the 'Scoping' section below.

Following the submission of the 2019 ES, KCC's EAS provided a consultation response (dated 28th November 2019), requesting that additional ecological information be provided in relation to measures to avoid adverse impacts on ancient woodland, badgers and bats and ensure that measures to control non-native invasive species could be implemented. In addition, it was requested that an Outline Landscape and Ecological Management Plan (LEMP) be produced.

A meeting attended by personnel from CBRE, Middlemarch Environmental Ltd, SDC and KCC's EAS was held on Monday 9th March 2020 to discuss the consultation response in detail and agree a suitable way forward. The following points were agreed:

- The FEMS would be updated to include additional information relating to connectivity of habitats for badger and mitigation/compensation requirements for roosting bats;
- An outline lighting strategy would be prepared;
- The 'Summary of Habitats' drawing (**Figure 7.2**) would be updated to show the location of invasive non-native plant species;
- An Outline LEMP would be produced and would include measures relating to the eradication/control of non-native invasive species and measures to be implemented to limit negative impacts on ancient woodland.

Scoping

The scoping response from KCC's EAS received on 18th December 2018 comprised the following points:

- That they were satisfied with the range of ecological surveys undertaken at the site.
- Reference to the mitigation hierarchy (avoidance, mitigation, compensation and enhancement) was made and it was noted that areas of ecological interest should be retained and connectivity throughout the site maintained.
- It was stated that in accordance with the NPPF, development resulting in the loss or deterioration of ancient woodland should be refused, and a suitable compensation strategy be compiled. The potential need for updated National Vegetation Classification (NVC) surveys of the woodland was highlighted. Reference was made to Natural England's standing advice and the need to provide a 15m buffer zone around ancient woodland.

The 2019 ES confirmed that the development had been designed to ensure that all woodland (including ancient woodland) and other valuable habitats (e.g. unimproved calcareous grassland) are retained, and a 15m buffer around ancient woodland would be implemented. The 2019 ES also confirmed that a Botanical Survey was completed at the site in 2018 and included an updated assessment of the woodland. The 2019 ES stated that measures to ensure that retained habitats are protected during construction works will be implemented through the use of a Construction Ecological Management Plan (CEcMP) and retained and created habitats would be subject to long-term management and monitoring in accordance with a LEMP, to ensure that their biodiversity value is maintained and/or enhanced.

The design of the development to ensure that all woodland (including ancient woodland) and other valuable habitats (e.g. unimproved calcareous grassland) are retained, and a 15m buffer around ancient woodland would be implemented remains the same as the 2019 ES. The proposed use of a CEcMP to ensure that retained habitats are protected during construction works remains the same as the 2019 ES.

Since the 2019 ES was submitted, an Outline LEMP (**Appendix 7.4**, Volume II) has been prepared, and accompanies this ES Addendum.

The scoping response from Natural England received on 19th December 2018 outlined general requirements for ecological aspects of ES, comprising an assessment of potential for proposals to affect designated sites, regionally and locally important sites, protected species and notable habitats and species. The assessment for both the 2019 ES and this ES Addendum has been carried out in accordance with the CIEEM Guidelines and consider potential impacts on all relevant ecological features.

Consideration of Climate Change

The consideration of climate change remains the same as in the 2019 ES.

Consideration of Human Health

The consideration of human health remains the same as in the 2019 ES.

Consideration of Risk of Major Accidents and/or Disasters

The consideration of isk of major accidents and/or disasters remains the same as in the 2019 ES.

Alternatives

The consideration of alternatives remains the same as in the 2019 ES.

Assessment of Baseline Conditions

There have been no changes to the assessment of baseline conditions since the 2019 ES was submitted.

The 'Zone of Influence' for this assessment has been defined in accordance with the CIEEM guidelines, which state that the Zone of Influence with respect to ecology does not simply relate to the red line boundary of an application site. Activities and impacts that occur outside of the application site during the construction and operational phases of a development can still have a negative or positive effect on ecological features. The Zone of Influence in this assessment will therefore consider direct and indirect effects on ecological features both within and adjacent to the application site, and potentially associated with other areas that could be affected e.g. through transportation or excavation.

The assessment takes into account all ecological features within the Zone of Influence that are material considerations in the planning process. This includes the following:

- Statutory and non-statutory nature conservation sites;
- Statutory protected species;
- Habitats and Species of Principal Importance in England (as identified in Section 41 of the NERC Act) [34];
- Priority habitats and species identified in the local Biodiversity Action Plan [38]; and
- Features of importance by virtue of their location, role or function within the ecological landscape.

A suite of baseline surveys was completed by Waterman Group between 2006 and 2013, the results of which are provided in an Ecological Appraisal report (Ref: EED12715-102.R.2.3.7.LM) and a Protected Species and Habitats Survey report (Ref: EED12715-102.R.3.3.6.LM). These surveys informed the ecology chapter of the EIA associated with the 2015 extant outline planning permission (2015 OPP).

Middlemarch Environmental Ltd completed the following survey work and assessments for the application site in 2018 and 2019:

- Preliminary Ecological Appraisal (comprising a desk study and Phase 1 Habitat Survey);
- Preliminary Bat Roost Assessment;
- Bat Activity Surveys;
- Badger Survey;
- Breeding Bird Survey;
- Botanical Survey;
- Terrestrial Invertebrate Survey;
- Reptile Survey;
- Dormouse Survey; and
- Winter Bird Survey.

Methodologies for each of these surveys and assessments are provided in the relevant reports (**Appendices 9.1 to 9.11**, Volume III of the 2019 ES).

The following updated survey work has been completed by Middlemarch Environmental in 2020 to provide updated information in support of this ES Addendum:

- Updated Ecological Walkover; and
- Updated Badger Survey.

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Methodologies for each of these surveys and assessments are provided in the relevant reports (**Appendices 7.1 and 7.2**, Volume II of this ES Addendum).

Future Baseline

There have been no changes to the future baseline since the 2019 ES was submitted.

The following mitigation and enhancement measures were previously committed to and are detailed in the ecology chapter of the EIA associated with the 2015 extant outline planning permission (2015 OPP):

- Provide a purpose-built bat house in the south-western part of the site adjacent to the woodland and the QinetiQ area. The bat house would be constructed early 2016 in Phase 1;
- Provide an artificial badger set in 2016 within the 'wildlife area' in advance of the construction of the new QinetiQ security fence in Phase 2;
- Provide dormice, bird and bat boxes to be installed in the woodland and new builds. In addition to the provision of terrestrial invertebrate boxes and reptile refugia (in Phase 1 onwards to Phase 7);
- Provide 'wildlife area' created in 2016 (in Phase 1) to the south-west of the site in the wider Survey Area. The 'wildlife area' would comprise a species-rich wildflower grassland area;
- create and enhance habitats of ecological value to provide a net biodiversity gain (Phase 4 to Phase 7);
- Retain protect and enhance all woodland including Ancient Woodland;
- Provide a minimum of a 15m buffer between the development plots and all Ancient Woodland;
- Maintain and enhance woodland connectivity with the wider landscape;
- Include native woodland infill and scrub planting, of regional provenance;
- Retain scattered trees, wherever possible;
- Include new tree planting, where possible, including fruiting varieties;
- Retain, protect and enhance all areas of calcareous grassland;
- Include ponds and sustainable drainage features to provide aquatic habitat;
- Create green infrastructure corridors to increase connectivity;
- Provide clearly defined pathways away from habitats of greatest value;
- Enhancement of existing pathways into areas of greatest ecological value;
- Creation of wild areas within the green infrastructure for domestic pets; and,
- Provide an appropriate lighting mitigation strategy using low level / directional lighting along woodland edges and habitats of ecological value to retain and create dark corridors.

These measures were referred to, where appropriate, in section 9.7 'Mitigation and Enhancement Measures' of the 2019 ES, and are now referred to, where relevant, in section 7.7 of this ES Addendum. Section 9.8 'Assessment Post-Mitigation' of the 2019 ES included a comparison of the predicted residual impacts of the proposed development with the future baseline associated with the 2015 extant outline planning permission (2015 OPP). There have been no changes to this assessment since the 2019 ES was submitted. Section 7.8 of this ES Addendum includes the same comparison of the predicted residual impacts of the proposed development with the future baseline associated with the 2015 extant outline planning permission (2015 OPP).

Assessment of Importance

There have been no changes to the assessment of importance since the 2019 ES was submitted.

The assessment has been undertaken in accordance with the CIEEM Guidelines. The CIEEM Guidelines represent the current best practice for assessing the ecological impact of development projects.

The CIEEM guidelines state that ecological features should be considered within a '*defined geographical context*' (i.e. spatial scale), using the following frame of reference:

- International and European (e.g. Special Areas of Conservation, Special Protection Areas and Ramsar sites);
- National (e.g. Sites of Special Scientific Interest (SSSI) and National Nature Reserves);
- Regional (e.g. large-scale Wildlife Sites that fall short of SSSI selection criteria, regionally rare or valuable habitat, or important species population in the context of the region);
- County (e.g. County Wildlife Sites or Local Nature Reserves, county rare or valuable habitat, or important species population in the context of the county); or
- Local (this could include habitats or species populations important in the context of the District or other locally defined areas, such as at the scale of the site).

Assigning importance to ecological features is based on professional judgement informed by available guidance and information, and expert advice.

Assessment of Significance

There have been no changes to the assessment of significance since the 2019 ES was submitted.

The CIEEM guidelines define a significant effect in the context of an ecological impact assessment as 'an effect that either supports or undermines biodiversity conservation objectives for important ecological features or for biodiversity in general'. A significant effect is therefore an effect that is 'sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project'.

Significant effects are determined by assessing any deviation in the baseline conditions of a feature of ecological importance that may occur as a result of individual and cumulative impacts (effect interactions as a result of the proposed development in isolation and in-combination effects arising as a result of the proposed development in combination with other projects) during the construction and operational phases. These effects are expressed in terms of the geographical scale, as outlined above, however the geographical scale at which an effect is significant can vary from the geographical importance of the ecological feature being assessed. This assessment uses the above methodology to describe all significant effects on features of ecological importance within the zone of influence.

Conformity with the ES

This section remains the same as the 2019 ES.

The impact assessment has been carried out in accordance with the CIEEM Guidelines and therefore all conclusions about significant impacts in this chapter are consistent with the above methodology. However, the geographical scale for determining significance in accordance with the CIEEM Guidelines differs from the approach for determining significance in the remainder of this ES.

The CIEEM guidelines state the following regarding alternative approaches for determining the significance of effects on ecological features, including '*methods for scoring and ranking impacts on the basis of subjective criteria*':

'Results are often presented in the form of a matrix in which ecological value/importance and magnitude of impact are combined into a significance score. A matrix approach is commonly used in EIA by disciplines other than ecology to assign significant residual effects to categories (e.g. major, moderate, minor). In many cases, its use is required to provide consistency across all the topics of an Environmental Statement. If using this approach, it is very important to make a clear distinction between evidence-based and value-based judgements so that decision makers and other stakeholders are aware of the level of subjective evaluation that has been used. Spurious quantification should be avoided in which numerical scores or significance rankings/ categories are used without a clear definition of the criteria and thresholds that underpin them.

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These Guidelines avoid and discourage use of the matrix approach and categorisation.'

However, the CIEEM Guidelines make reference to an alternative approach outlined by Box et al (2017) which is not based on a matrix of importance (or value) and '*magnitude*' but can be used for categorising significant residual effects if specifically required within an ES. Where residual ecological effects are identified within this chapter, the significance of these effects at the geographical scale (in accordance with the CIEEM Guidelines) is converted into effects deemed to be significant at the minor, moderate and major level, which is consistent with the remainder of this ES. This approach is outlined in **Table 7.1** and has been used to outline what may be considered a minor, moderate or major effect.

Table 7.1
Significance Matrix

CIEEM GUIDELINES GEOGRAPHICAL SCALE FOR RESIDUAL EFFECT SIGNIFICANCE	SIGNIFICANT RESIDUAL EFFECT CATEGORY FOR ES CONFORMITY
International, national or regional	Major
Regional, metropolitan, county, vice-county or other local authority-wide area	Moderate
Local (District or Site)	Minor

Relevant Associated Development

This section remains the same as the 2019 ES.

There is no relevant associated development to the proposed development. This remains unchanged.

Assumptions/Limitations

This section remains the same as the 2019 ES, with the exception of the reference to **Figure 7.4** (which was provided as **Figure 9.4** when the 2019 ES was submitted).

In undertaking the biodiversity assessment of the application site and wider surrounding area, there are a number of limitations and constraints affecting the outputs from this work. These include:

- The ecological surveys do not produce a comprehensive list of flora and fauna for the site as any ecological surveys will be limited by factors which affect their presence. These factors include weather, time of year, migration patterns and behaviour. However, it is considered that the results of the surveys, together with the information from the data gathering exercise, will enable an assessment of the nature conservation interest of the application site to be made in sufficient detail for the likely significant effects of the proposed development on features of nature conservation importance to be adequately undertaken.
- All surveys were completed at the appropriate times of year and in accordance with best practice wherever possible. Any deviations from best practice, together with any implications this may have for the survey conclusions, are discussed in the survey reports.
- The location of badger setts is confidential and as such, the specific location of setts is shown on **Figure 7.4** (which supersedes **Figure 9.4**, submitted as part of the 2019 ES) only, which will be provided to the Council and Natural England as required.

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7.3 BASELINE CONDITIONS

The baseline conditions have generally remained unchanged since the 2019 ES was submitted and they have been provided again for reference in the table below.

An Updated Badger Survey (**Appendix 7.2**, Volume II of this ES Addendum) was undertaken in March 2020 to provide an updated baseline. The updated results are provided within the table below, although the assigned importance rating for the badger population at the site remains the same.

KEY RECEPTORS	DESCRIPTION	IMPORTANCE	FURTHER INFORMATION
Westerham Mines Site of Special Scientific Interest (SSSI)	Located 6.55km to the south-west of the site. Comprises abandoned ragstone mines, used by five species of hibernating bat.	National	Sections 4.2, 6.2, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Chevening Estate Local Wildlife Site (LWS)	Located 10m south-west of the site. Reference to aerial imagery indicates that this LWS comprises woodland.	County	Sections 4.2, 6.2, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Woodlands West of Shoreham LWS	Encompasses several parcels of ancient semi-natural and replanted woodland, located 10m east of the site at its nearest point.	County	Sections 4.2, 6.2, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Polhill Bank Kent Wildlife Trust Reserve	Located 150m north-east of the site. Comprises almost 4 ha of chalk grassland on a south-east-facing slope.	County	Sections 4.2, 6.2, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Ancient Woodland / Broadleaved semi-natural woodland	81 parcels of ancient woodland have been identified within a 2km radius of the site, 17 of which form part of the site. Ancient woodlands are areas that have been continuously wooded for at least 400 years. They are an important and biodiverse habitat. The majority of broadleaved semi-natural woodland within the site is classed as ancient woodland. A variety of species form the canopy, including ash, beech, English oak and yew. Ground flora species indicative of ancient woodlands comprised bluebell, dog's mercury, primrose, wood anemone, wood spurge and yellow archangel.	County	Sections 4.2, 5.3, 6.2, 6.3, 7.1, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Broadleaved plantation woodland	This habitat is present along the western site boundary and extends around much of the semi-improved grassland in the western part of the site. Species present include ash, beech and oak. Although not a Habitat of Principal Importance, broadleaved plantation woodland contributes to the structural and ecological diversity of the site, provides connectivity and has the potential to support a range of protected and notable species.	Local (District)	Sections 5.3, 6.3, 7.2, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Coniferous plantation woodland	Two narrow strips of coniferous plantation woodland, dominated by Scots pine, are present to the north and south-west of the central block of buildings. Although not a Habitat of Principal Importance, coniferous plantation woodland contributes to the structural and ecological diversity of the site and has the potential to support protected species such as nesting birds.	Local (Site)	Sections 5.3, 6.3, 7.2, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Hedgerows	Sections of species-poor defunct, species-poor intact and species-rich hedgerows are present across the site, primarily comprising hawthorn and blackthorn.	Local (District)	Sections 5.3, 6.3, 7.2, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Mixed plantation woodland	Three parcels of mixed plantation woodland were present on site; one area was located along Crow Drive in the north-eastern part of the site, one area was located to the north of Armstrong Close and west of Fort Road, and another area was located in the south-western corner of the site. The canopy was dominated by hemlock with ash, English oak, rowan, silver birch and sweet chestnut also present. Although not a Habitat of Principal Importance, mixed plantation woodland contributed to the structural and ecological diversity of the site and has the potential to support protected species such as roosting bats and nesting birds.	Local (District)	Sections 5.3, 6.3, 7.2, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Scattered trees	A number of early-mature and mature scattered trees were present throughout the site, species included ash, beech, cherry, crab apple, English oak, hawthorn, hemlock, Leyland cypress, rowan, silver birch, sweet chestnut, whitebeam and yew. Early-mature and mature trees have intrinsic value and cannot be readily replaced if lost.	Up to Local (District)	Sections 5.3, 6.3, 7.2, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Unimproved calcareous grassland	Unimproved calcareous grassland dominated the southern part of the site. This habitat was divided into two areas by a fence line. The sward was dominated by grass species such as fescue with other species including bird's-foot trefoil, buttercup, daisy, field scabious, ragwort, self-heal, speedwell, wild marjoram, wild strawberry and wild thyme present. In some areas pyramidal orchid was also present. The calcareous grassland on site is classed as a Habitat of Principal Importance under the 'Lowland Calcareous Grassland' habitat.	Local (District)	Sections 5.3, 6.3, 7.2, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)

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KEY RECEPTORS	DESCRIPTION	IMPORTANCE	FURTHER INFORMATION
Bats	Surveys completed by Waterman Group between 2007 and 2013 confirmed the presence of roosting bats in ten buildings: A13, A14, A25, F6, H38, HR1, HR2, M10, N10 and R29. Roosts used by low numbers of common pipistrelle were recorded in Buildings A13, A14, A25, M10, N10 and R29. Buildings HR1 and HR2 were each found to support a single hibernating brown long-eared bat. A small number of droppings resembling those of a Myotis species were recorded in Building F6, indicating use of this building as a summer roost. Since these surveys were completed, Buildings A25 and M10 have been demolished, and R29 has been subject to repair works. The 2018 surveys completed by Middlemarch Environmental Ltd identified bat roosts in six buildings: A3, F11, N2, Q4, Q7 and R64. Building R64 was found to support a brown long-eared bat maternity roost. The other buildings supported day roosts for common pipistrelle. No bats emerged from or re-entered buildings A13, A14, F6, H38, HR1, HR2 or N10 during the 2018 surveys. However, bats are known to regularly move between roosts and as such these buildings remain a roost whether occupied or not. Nine species of bat (common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Daubenton's bat, whiskered bat, Natterer's bat, brown long-eared bat and serotine) were recorded utilising the application site for foraging and commuting purposes during the 2018 suite of surveys. Common pipistrelle was the most frequently recorded species, whilst low levels of activity by other species were recorded. Activity was concentrated around the site peripheries, particularly around areas of woodland.	Local (District)	Appendices 9.2, 9.3 and 9.4 (contained within the 2019 ES, Appendix 1.1, Volume II)
Badger	During the 2018 Badger Survey, three badger setts in current use were identified within the application site, comprising one main sett (Sett 1) and two subsidiary setts (Setts 5 and 6). A further eight setts were recorded within the application site and wider survey area. The application site and wider survey area were considered to provide a range of high-quality foraging and sett-building habitat for badgers, with extensive areas of largely undisturbed woodland and grassland present. During the Updated Badger Survey completed in 2020, 12 badger setts (Setts 1 to 12) were identified, comprising two main setts (Setts 5 and 11), two annex setts (Setts 4 and 12), two subsidiary setts (Setts 3 and 6) and six outlier setts (Setts 1, 2, 7, 8, 9 and 10). Of these setts, eight (Setts 1, 2, 4, 5, 6, 8, 9 and 11) showed signs of recent use. Latrines and snuffle holes were also noted. Due to the apparent presence of two main setts, it is likely that the site is used by more than one badger clan. Specific sett locations are shown on Figure 9.4. The application site and wider survey area remain unchanged and continue to provide a range of high-quality foraging and sett-building habitat for badgers, with extensive areas of largely undisturbed woodland and grassland present.	Local (Site)	Appendix 9.5 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.2, Volume II
Brown hare	Sixteen historical records of brown hare were provided within the desk study. Suitable habitat for brown hare, in the form of open grassland and arable land is present on site and in the surrounding area.	Local (Site)	Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Dormouse	The 2018 survey work confirmed the presence of dormice at the site. A single dormouse was recorded in October 2018, in a nest tube located within an area of bramble scrub adjoining broadleaved semi-natural woodland in the south of the site opposite the southern security fence.	Local (District)	Appendix 9.10 (contained within the 2019 ES, Appendix 1.1, Volume II)
Hedgehog	Five records of hedgehog were identified in the desk study. The hedgerows, scrub, woodland and grassland on site offer suitable refuge, foraging and commuting opportunities for hedgehog.	Local (Site)	Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Breeding birds	During the 2018 Breeding Bird Survey, a total of 55 bird species were recorded, of which 44 were confirmed to have bred or probably/possibly did so, comprising: ■ Linnet, skylark, song thrush, spotted flycatcher, yellowhammer and marsh tit, all Species of Principal Importance in England and Birds of Conservation Concern 4 (BoCC4) Red List species; ■ Bullfinch and dunnock, both Species of Principal Importance in England and BoCC4 Amber List species; ■ Mistle thrush and nightingale, both BoCC4 Red List Species; and, ■ Kestrel, stock dove and tawny owl, all BoCC4 Amber List Species. Overall, the site is considered to be of local/district value in terms of its breeding bird interest, supporting a number of species of conservation concern, in addition to a range of more common generalist bird species.	Up to Local (District)	Appendix 9.6 (contained within the 2019 ES, Appendix 1.1, Volume II)
Reptiles	During the 2018 Reptile Survey, the following reptile populations were recorded within the southern part of the survey area: ■ A good population of slow-worm and a good population of common lizard, supported within an area of semi-improved calcareous grassland (Transect C) located within the southern part of the application site; ■ An exceptional population of slow-worm and a low population of common lizard, supported within an area of semi-improved neutral grassland (Transect E) located outside of the application site boundary but within the ownership boundary; and ■ A low population of slow-worm, supported within an area of grazed semi-improved calcareous grassland (Transect F) located outside of the application site boundary but within the ownership boundary.	Local (District)	Appendix 9.9 (contained within the 2019 ES, Appendix 1.1, Volume II)

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7.4 POTENTIAL SIGNIFICANT EFFECTS

The potential significant effects remain the same as those reported in the 2019 ES and they have been provided again for reference in the table below.

PHASE	DESCRIPTION	ADVERSE/BENEFICIAL
Construction	Localised increase in air pollutants and dust as result of construction activities (increased movement of vehicles, site clearance and building demolition works), leading to temporary, minor changes to habitat assemblage within Chevening Estate LWS, Woodlands West of Shoreham LWS, ancient woodland sites and unimproved calcareous grassland and subsequent decline in favourable conservation status.	Adverse
Construction	Potential loss of small areas of broadleaved semi-natural woodland to accommodate attenuation ponds.	Adverse
Construction	Removal of scattered trees within site.	Adverse
Construction	Physical damage or disturbance of retained woodland, hedgerows and trees, through compaction of soils and damage to the root stock, leading to localised degradation and loss of these habitats.	Adverse
Construction	Loss, damage or disturbance of a bat roost. Killing/injury of individual roosting bats.	Adverse
Construction	Loss, damage or disturbance of bat foraging and commuting habitat.	Adverse
Construction	Loss, damage or disturbance of a badger sett. Killing/injury of individual badgers.	Adverse
Construction	Loss or fragmentation of badger foraging and commuting habitat.	Adverse
Construction	Killing/injury of individual dormice.	Adverse
Construction	Loss or fragmentation of dormouse foraging and commuting habitat.	Adverse
Construction	Killing/injury or disturbance of hedgehogs during vegetation clearance.	Adverse
Construction	Temporary reduction in foraging success of terrestrial mammals due to killing/injury as a result of falling into open excavations or colliding with vehicles.	Adverse
Construction	Loss, damage or disturbance of a birds nest. Killing/injury of nesting birds.	Adverse
Construction	Loss, damage or disturbance of bird nesting and foraging habitat.	Adverse
Construction	Killing/injury of individual reptiles.	Adverse
Construction	Loss or fragmentation of reptile foraging/basking/refuge habitat.	Adverse
Operation	Increased illumination leading to severance of commuting routes or reduction of suitable foraging habitats for bats using Westerham Mines SSSI.	Adverse
Operation	Recreational disturbance and damage to Chevening Estate LWS, Woodlands West of Shoreham LWS, Polhill Bank Kent Wildlife Trust Reserve, ancient woodland sites and retained habitats within application site, resulting in degradation and a decline in favourable conservation status.	Adverse
Operation	Increased illumination leading to disturbance/fragmentation of Chevening Estate LWS, Woodlands West of Shoreham LWS, Polhill Bank Kent Wildlife Trust Reserve, ancient woodland sites and retained habitats within application site, resulting in degradation and a decline in favourable conservation status.	Adverse
Operation	Loss of biodiversity value of woodland, hedgerows, trees and unimproved calcareous grassland due to a lack of, or inappropriate, management.	Adverse
Operation	Increased illumination leading to disturbance/fragmentation of bat roosting, foraging and/or commuting habitat.	Adverse
Operation	Increase in road-related mortality of terrestrial mammals (badgers and hedgehogs) due to increase in vehicle movements within application site, leading to decline in favourable conservation status.	Adverse
Operation	Increased predation of reptiles, dormice and birds by domestic pets, leading to decline in favourable conservation status.	Adverse
Operation	Killing/injury of nesting birds during habitat management.	Adverse

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7.5 DESIGN INTERVENTIONS

The design interventions remain the same as those reported in the 2019 ES and they have been provided again for reference in the table below.

DESIGN INTERVENTION	DESCRIPTION	REASON FOR INTERVENTION	FURTHER INFORMATION
Development layout	Development within existing built footprint, respecting the 15m offset buffer from areas of ancient woodland.	Ensures that the majority of higher value habitats (ancient woodland / broadleaved semi-natural woodland and unimproved calcareous grassland, in particular) are retained.	Chapter 3: Application Site & Proposed Development (contained within the 2019 ES, Appendix 1.1, Volume II)
Habitat creation and landscaping	New areas of enhanced grassland, woodland buffer planting and SuDS ponds have been incorporated into the design of the proposed development. Creation and enhancement of habitats of ecological value to provide a biodiversity net gain.	Creates valuable ecological habitats which are well connected to the retained habitats. Improves ecological and structural diversity and connectivity. Provides suitable habitat for a range of protected and notable species.	Land Use and Green Infrastructure Plan (JTP Drawing 00556I_PP0 Rev P2)

7.6 ASSESSMENT PRE-MITIGATION (INCLUDING DESIGN INTERVENTION)

The assessment pre-mitigation remains the same as reported in the 2019 ES and has been provided again for reference in the table below.

PHASE	RECEPTOR(S) AFFECTED	IMPACT	SCALE OF EFFECT PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Construction	Chevening Estate LWS, Woodlands West of Shoreham LWS, ancient woodland sites and unimproved calcareous grassland	Temporary, minor changes to habitat assemblage due to construction phase pollution and dust from vehicles accessing site, site clearance and demolition works.	Adverse effect, significant at Local (District) scale / minor adverse	Yes	Section 6.2, Appendix 9.1, 2019 ES (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Broadleaved semi-natural woodland	Potential loss of small areas of habitat to accommodate attenuation ponds. Enhancement of retained woodland and creation of new habitats to improve ecological and structural diversity and connectivity incorporated into design of proposed development.	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 7.3, Volume II
Construction	Scattered trees	Loss of some habitat within site. Replacement tree planting incorporated into design of proposed development.	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 7.3, Volume II
Construction	Retained woodland, hedgerows and trees	Physical damage or disturbance through compaction of soils and damage to the root stock, leading to localised degradation and loss of these habitats.	Adverse effect, significant at Local (District) scale / minor adverse	Yes	Section 6.3, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Bats	Loss, damage or disturbance of a bat roost during building demolition works. Killing/injury of individual bats.	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 and Appendices 9.2 and 9.3, (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Bats	Loss, damage or disturbance of foraging and commuting habitat during site clearance and due to construction lighting.	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 and Appendices 9.2, 9.3 and 9.4 (contained within the 2019 ES, Appendix 1.1, Volume II)

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PHASE	RECEPTOR(S) AFFECTED	IMPACT	SCALE OF EFFECT PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Construction	Badgers	Loss, damage or disturbance of a sett during site clearance. Killing/injury of individual badgers.	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 9.5 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.2, Volume II
Construction	Badgers	Loss or fragmentation of foraging and commuting habitat during site clearance.	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 9.5 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.2, Volume II
Construction	Dormice	Killing/injury of individual dormice during vegetation clearance.	Adverse effect, significant at Local (District) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 and Appendix 9.10 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Dormice	Loss or fragmentation of foraging and commuting habitat during site clearance.	Adverse effect, significant at Local (District) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 and Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Hedgehog	Killing/injury or disturbance during vegetation clearance.	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Terrestrial mammals	Temporary reduction in foraging success due to killing/injury as a result of falling into open excavations or colliding with vehicles	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Nesting birds	Loss, damage or disturbance of a nest during site clearance. Killing/injury of nesting birds.	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 and Appendix 9.6 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Birds	Loss, damage or disturbance of suitable nesting and foraging habitat during site clearance.	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 and Appendix 9.6 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Reptiles	Killing/injury of individual reptiles during site clearance.	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 and Appendix 9.9 (contained within the 2019 ES, Appendix 1.1, Volume II)

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PHASE	RECEPTOR(S) AFFECTED	IMPACT	SCALE OF EFFECT PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Construction	Reptiles	Loss or fragmentation of foraging/basking/refuge habitat during site clearance.	Adverse effect, significant at Local (District) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 and Appendix 9.9 (contained within the 2019 ES, Appendix 1.1, Volume II)
Operation	Chevening Estate LWS, Woodlands West of Shoreham LWS, Polhill Bank Kent Wildlife Trust Reserve, ancient woodland sites and retained habitats within application site	Recreational disturbance and damage resulting in degradation and a decline in favourable conservation status.	Adverse effect, significant at Local (District) scale / minor adverse	Yes	Section 6.2, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Operation	Chevening Estate LWS, Woodlands West of Shoreham LWS, Polhill Bank Kent Wildlife Trust Reserve, ancient woodland sites and retained habitats within application site	Although illumination at height will be limited, the proposed development could still result in minor increases in illumination, leading to disturbance/fragmentation resulting in degradation and a decline in favourable conservation status.	Adverse effect, significant at Local (District) scale / minor adverse	Yes	Sections 6.2 and 6.3, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Operation	Retained woodland, hedgerows, trees and unimproved calcareous grassland	Loss of biodiversity value due to a lack of, or inappropriate, habitat management.	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Section 6.3, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Operation	Bats	Although illumination at height will be limited, the proposed development could still result in minor increases in illumination, leading to disturbance/fragmentation of roosting, foraging and/or commuting habitat	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 and Appendices 9.2, 9.3 and 9.4 (contained within the 2019 ES, Appendix 1.1, Volume II)
Operation	Terrestrial mammals (badgers and hedgehogs)	Increase in road-related mortality due to increase in vehicle movements within application site, leading to decline in favourable conservation status.	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 9.5 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.2, Volume II
Operation	Reptiles, dormice and birds	Increased predation by domestic pets, leading to decline in favourable conservation status.	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 and Appendices 9.6, 9.9 and 9.10 (contained within the 2019 ES, Appendix 1.1, Volume II)
Operation	Nesting birds	Killing/injury during habitat management.	Adverse effect, significant at Local (Site) scale / minor adverse	Yes	Section 6.4, Appendix 9.1 and Appendix 9.6 (contained within the 2019 ES, Appendix 1.1, Volume II)
Operation	Bats, badgers, hedgehogs, reptiles, dormice, birds and invertebrates	Enhancement of retained habitat and provision of new habitats will provide suitable roosting/nesting/refuge/foraging opportunities for a range of species groups.	Beneficial effect, significant at up to Local (District) scale	Yes	Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 7.3, Volume II

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7.7 MITIGATION & ENHANCEMENT MEASURES

The mitigation and enhancement measures have generally remained unchanged since the 2019 ES was submitted and they have been provided again for reference in the table below.

The main update since the 2019 ES was submitted is that an Outline LEMP (**Appendix 7.4**, Volume II of this ES Addendum) has now been produced. Where relevant, this is highlighted in the 'Mitigation Measure' column of the table below. However, it should be noted that the 'Scale of Effect Post-Mitigation' remains unchanged.

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER	SCALE OF EFFECT POST-MITIGATION	ADVERSE/BENEFICIAL	FURTHER INFORMATION
Construction	Temporary, minor changes to habitat assemblage of Chevening Estate LWS, Woodlands West of Shoreham LWS, ancient woodland sites and unimproved calcareous grassland due to construction phase pollution and dust.	Implementation of best practice construction measures, including maintenance checks of construction vehicles and dust suppression measures. In accordance with extant outline planning permission, all ancient woodland will be retained and a minimum 15m buffer will be implemented between development plots and ancient woodland. Appropriate protection measures outlined in a Framework Ecological Mitigation Strategy (FEMS) and implemented via a Construction Ecological Management Plan (CEcMP), prepared for each phase of the development.	Planning condition	Negligible	N/A	Sections 6.2 and 7.1, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II)
Construction	Potential loss of small areas of broadleaved semi-natural woodland to accommodate attenuation ponds.	Although it may not be possible to avoid the initial loss of habitat, the enhancement of retained woodland and creation of new habitats will improve ecological and structural diversity and connectivity in the long-term and has been incorporated into the design of the proposed development. Retained and created habitats to be managed in accordance with a LEMP. Since the 2019 ES was submitted, an Outline LEMP has been prepared. Retained and created habitats will be managed in accordance with this Outline LEMP and subsequent detailed LEMPs which will be prepared for each phase of the development.	Planning condition	Medium-term, Local (Site) scale / minor	Adverse	Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendices 7.3 and 7.4, Volume II
Construction	Removal of scattered trees within site.	New replacement tree planting incorporated into design of proposed development. Trees will take time to establish but will provide valuable habitat in the long-term. Habitat management in accordance with a LEMP. Since the 2019 ES was submitted, an Outline LEMP has been prepared. Planted trees will be managed in accordance with this Outline LEMP and subsequent detailed LEMPs which will be prepared for each phase of the development.	Planning condition	Medium-term, Local (Site) scale / minor	Adverse	Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendices 7.3 and 7.4, Volume II
Construction	Physical damage or disturbance of retained woodland, hedgerows and trees, through compaction of soils and damage to the root stock, leading to localised degradation and loss of these habitats.	Implementation of a tree protection plan in accordance with British Standard 5837: 2012 Trees in relation to design, demolition and construction. In accordance with extant outline planning permission, all woodland will be retained, and scattered trees will be retained where possible. Appropriate protection measures outlined in a FEMS and implemented via a Construction Ecological Management Plan (CEcMP), prepared for each phase of the development.	Planning condition	Negligible	N/A	Sections 6.3 and 7.2, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 9.12, (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 9.3, Volume II
Construction	Loss, damage or disturbance of a bat roost. Killing/injury of individual roosting bats.	All works carried out in accordance with a method statement, formally approved by Natural England through receipt of development licence. Compliance with legislation will inform need for licence/s on a phased basis. In accordance with extant outline planning permission, a purpose-built bat house will be provided in the south-western part of the site and additional bat boxes will be installed in the woodland and within new builds, providing additional roosting habitat for bats.	Compliance with legislation requiring Natural England Licence	Local (Site) / minor	Beneficial	Section 6.4, Appendix 9.1, (contained within the 2019 ES, Appendix 1.1, Volume II), Appendices 9.2 and 9.3, (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendices 7.3 and 7.4, Volume II
Construction	Loss, damage or disturbance of bat foraging and commuting habitat.	Appropriate measures for protection of retained habitats and control of construction-phase lighting, noise and vibration outlined in a FEMS and implemented via a CEcMP, prepared for each phase of the development. Method statement/s submitted in support of Natural England development licence application/s will confirm how favourable conservation status of bat populations at the site will be maintained.	Planning condition, compliance with legislation requiring Natural England Licence	Negligible	N/A	Section 6.4, Appendix 9.1; Appendices 9.2, 9.3, 9.4 (contained within the 2019 ES, Appendix 1.1, Volume II) and 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.3, Volume II

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PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER	SCALE OF EFFECT POST-MITIGATION	ADVERSE/BENEFICIAL	FURTHER INFORMATION
Construction	Loss, damage or disturbance of a badger sett. Killing/injury of individual badgers.	All works carried out in accordance with a method statement, formally approved by Natural England through receipt of development licence. Compliance with legislation will inform need for licence/s on a phased basis. The 2019 ES stated that at least one sett (Sett 5, Figure 9.4, 2019 ES) would need to be temporarily closed to accommodate works, but the main sett (Sett 1, Figure 9.4, 2019 ES) would be retained. The 2019 ES confirmed that an artificial badger sett was unlikely to be required in accordance with the extant outline planning permission. The Updated Badger Survey completed in March 2020 confirmed the presence of two main setts (Setts 5 and 11, Figure 7.4, ES Addendum), both of which are to be retained. As such, the conclusion drawn in the 2019 ES that an artificial badger sett is unlikely to be required in accordance with the extant outline planning permission remains unchanged. To ensure that there are no disturbance impacts on retained setts, all works will still need to be carried out in accordance with a method statement, formally approved by Natural England through receipt of development licence. Compliance with legislation will inform need for licence/s on a phased basis.	Compliance with legislation requiring Natural England Licence	Negligible	N/A	Section 6.4, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendices 9.5 and 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendices 7.2 and 7.3, Volume II, respectively
Construction	Loss or fragmentation of badger foraging and commuting habitat.	There have been no significant changes to the mitigation measures since the 2019 ES was submitted: Appropriate measures for protection of retained habitats (broad-leaved semi-natural woodland, broad-leaved plantation woodland and grassland) which form part of likely foraging range for badgers using active setts. Provision of suitable gaps in construction-phase fencing and control of construction-phase lighting, noise and vibration outlined in a FEMS and implemented via a CEcMP, prepared for each phase of the development. Method statement/s submitted in support of Natural England development licence application/s will confirm how favourable conservation status of badger populations at the site will be maintained. Tunnels to be provided under proposed security fencing for QinetiQ Group, to ensure badgers can continue to move through the site. Although detailed in the FEMS submitted in support of the 2019 ES, the Chapter 9 Biodiversity did not state that tunnels would also be provided under the main access road. This mitigation is still proposed to be provided. The 2019 ES stated that the active setts were Setts 1, 5 and 6, as shown on Figure 9.4, 2019 ES. The Updated Badger Survey completed in March 2020 identified eight active setts: Setts1, 2, 4, 5, 6, 8, 9 and 11, as shown on Figure 7.4, which accompanies this ES Addendum.	Planning condition, compliance with legislation requiring Natural England Licence	Negligible	N/A	Section 6.4, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendices 9.5 and 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendices 7.2 and 7.3, Volume II, respectively
Construction	Loss, damage or disturbance of dormice nesting habitat. Killing/injury of individual dormice.	All works carried out in accordance with a method statement, formally approved by Natural England through receipt of development licence. Compliance with legislation will inform need for licence/s on a phased basis. In accordance with extant outline planning permission, dormice boxes will be installed in the woodland, providing additional nesting habitat for this species.	Compliance with legislation requiring Natural England Licence	Local (Site) / minor	Beneficial	Section 6.4, Appendix 9.1 and Appendix 9.10 (contained within the 2019 ES, Appendix 1.1, Volume II) and 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.3, Volume II
Construction	Loss or fragmentation of dormouse foraging and commuting habitat.	Appropriate measures for protection of retained habitats and control of construction-phase lighting, noise and vibration outlined in a FEMS and implemented via a CEcMP, prepared for each phase of the development. Method statement/s submitted in support of Natural England development licence application/s will confirm how favourable conservation status of dormice populations at the site will be maintained.	Planning condition, compliance with legislation requiring Natural England Licence	Negligible	N/A	Section 6.4, Appendix 9.1 and Appendix 9.10 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.3, Volume II

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PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER	SCALE OF EFFECT POST-MITIGATION	ADVERSE/BENEFICIAL	FURTHER INFORMATION
Construction	Killing/injury or disturbance of hedgehogs during vegetation clearance.	Appropriate measures for protection of retained habitats and control and timing of vegetation clearance outlined in a FEMS and implemented via a CEcMP, prepared for each phase of the development.	Planning condition	Negligible	N/A	Section 6.4, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.3, Volume II
Construction	Temporary reduction in foraging success of terrestrial mammals due to killing/injury as a result of falling into open excavations or colliding with vehicles	Appropriate measures for covering excavations and pipework outlined in a FEMS and implemented via a CEcMP, prepared for each phase of the development.	Planning condition	Negligible	N/A	Section 6.4, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.3, Volume II
Construction	Loss, damage or disturbance of a birds nest. Killing/injury of nesting birds.	Appropriate measures for protection of retained habitats and control and timing of vegetation clearance outlined in a FEMS and implemented via a CEcMP, prepared for each phase of the development. In accordance with extant outline planning permission, bird boxes will be installed in the woodland and within new builds, providing additional nesting habitat.	Planning condition	Local (Site) / minor	Beneficial	Section 6.4, Appendix 9.1 and Appendix 9.6 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.3, Volume II
Construction	Loss, damage or disturbance of bird nesting and foraging habitat.	Appropriate measures for protection of retained habitats and control of construction-phase lighting, noise and vibration outlined in a FEMS and implemented via a CEcMP, prepared for each phase of the development.	Planning condition	Negligible	N/A	Section 6.4, Appendix 9.1 and Appendix 9.6 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.3, Volume II
Construction	Killing/injury of individual reptiles.	Appropriate measures for protection of retained habitats and control and timing of vegetation clearance outlined in a Reptile Mitigation Strategy, incorporated into the FEMS.	Planning condition	Negligible	N/A	Section 6.4, Appendix 9.1 and Appendix 9.9 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.3, Volume II
Construction	Loss or fragmentation of reptile foraging/basking/refuge habitat.	Appropriate measures for protection of retained habitats outlined in a Reptile Mitigation Strategy, incorporated into the FEMS. In accordance with extant outline planning permission, reptile refugia will be installed within appropriate habitats, providing additional habitat for this species group.	Planning condition	Local (Site) / minor	Beneficial	Section 6.4, Appendix 9.1 and Appendix 9.9 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.3, Volume II

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PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER	SCALE OF EFFECT POST-MITIGATION	ADVERSE/BENEFICIAL	FURTHER INFORMATION
Operation	Recreational disturbance and damage to Chevening Estate LWS, Woodlands West of Shoreham LWS, Polhill Bank Kent Wildlife Trust Reserve, ancient woodland sites and retained habitats within application site, resulting in degradation and a decline in favourable conservation status.	The 2019 ES stated that access management measures, such as the provision of clearly defined pathways away from habitats of greatest value in accordance with the extant outline planning permission, would be outlined in a LEMP. Since the 2019 ES was submitted, an Outline LEMP has been prepared. Access management measures are detailed within this Outline LEMP and will be provided in subsequent detailed LEMPs which will be prepared for each phase of the development.	Planning condition	Negligible	N/A	Section 6.2, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II), Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.3 Volume II and Appendix 7.4, Volume II
Operation	Increased illumination leading to disturbance/fragmentation of Chevening Estate LWS, Woodlands West of Shoreham LWS, Polhill Bank Kent Wildlife Trust Reserve, ancient woodland sites and retained habitats within application site, resulting in degradation and a decline in favourable conservation status.	The 2019 ES stated that an Operational Lighting Strategy designed with ecological input, in accordance with best practice guidance, would be provided and that in accordance with extant outline planning permission, low level / directional lighting would be used in proximity to woodland edges and habitats of ecological value to retain and create dark corridors. Since the 2019 ES was submitted, a Summary Lighting Assessment and lighting contour plans for roadways have been prepared, with ecological input and in accordance with best practice guidance. This includes the use of directional LED lighting with no upward spill of light and reduced lighting columns.	Planning condition	Negligible	N/A	Sections 6.2 and 6.3, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II) and Summary Lighting Assessment, Appendix XXX, Volume II
Operation	Loss of biodiversity value of woodland, hedgerows, trees and unimproved calcareous grassland due to a lack of, or inappropriate, management.	The 2019 ES stated that habitat management and monitoring measures would be outlined in a LEMP and that in accordance with the extant outline planning permission, the following measures would be implemented: enhancement of woodland connectivity and native woodland infill and scrub planting; provision of a species-rich wildflower grassland 'wildlife area'; new tree planting and creation of ponds and SuDS. Appropriate long-term management of retained and created habitats will increase structural and species diversity within woodland and grassland areas, contribute to providing a net gain in biodiversity and create valuable green connective corridors. Since the 2019 ES was submitted, an Outline LEMP has been prepared. Habitat management and monitoring measures are detailed within this Outline LEMP and will be provided in subsequent detailed LEMPs which will be prepared for each phase of the development.	Planning condition	Up to County scale / moderate for ancient woodland and up to Local (District) scale / minor for grassland habitats	Beneficial	Section 6.2, Appendix 9.1 (contained within the 2019 ES, Appendix 1.1, Volume II), Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.3 Volume II and Appendix 7.4, Volume II
Operation	Increased illumination leading to disturbance/fragmentation of bat roosting, foraging and/or commuting habitat	The 2019 ES stated that an Operational Lighting Strategy designed with ecological input, in accordance with best practice guidance, would be provided and that in accordance with extant outline planning permission, low level / directional lighting would be used in proximity to woodland edges and habitats of ecological value to retain and create dark corridors. Since the 2019 ES was submitted, a Summary Lighting Assessment and lighting contour plans for roadways have been prepared, with ecological input and in accordance with best practice guidance. This includes the use of directional LED lighting with no upward spill of light and reduced lighting columns.	Planning condition	Negligible	N/A	Section 6.4, Appendix 9.1 and Appendices 9.2, 9.3, 9.4 (contained within the 2019 ES, Appendix 1.1, Volume II), Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.3, Volume II and Summary Lighting Assessment, Appendix XXX, Volume II

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PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER	SCALE OF EFFECT POST-MITIGATION	ADVERSE/BENEFICIAL	FURTHER INFORMATION
Operation	Increase in road-related mortality of terrestrial mammals (badgers and hedgehogs) due to increase in vehicle movements within application site, leading to decline in favourable conservation status.	Implementation of speed limit within site. The design of the internal highway network will be compatible with the requirements for designation as a 20mph zone. This has resulted in a number of traffic calming features within the internal site which have been agreed with KCC. Tunnels to be provided under Crow Road, to ensure badgers can continue to move through the site.	Planning condition	Negligible	N/A	Section 6.4, Appendix 9.1 and Appendix 9.5 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.3, and ES Chapter 10: Transportation & Access (contained within the 2019 ES, Appendix 1.1, Volume II)
Operation	Increased predation of reptiles, dormice and birds by domestic pets, leading to decline in favourable conservation status.	In accordance with the extant outline planning permission, wild areas will be created within the green infrastructure for domestic pets. However, it will not be possible to prevent domestic pets (particularly cats) from entering more valuable habitat areas which support reptiles, dormice and nesting birds.	n/a	Local (Site)	Adverse	Section 6.4, Appendix 9.1 and Appendices 9.6, 9.9 and 9.10 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded by Appendix 7.3, Volume II
Operation	Killing/injury of nesting birds during habitat management	The 2019 ES stated that suitable timing of habitat management would be outlined in a LEMP. Since the 2019 ES was submitted, an Outline LEMP has been prepared. The suitable timing of habitat management is detailed within this Outline LEMP and will be provided in subsequent detailed LEMPs which will be prepared for each phase of the development.	Planning condition	Negligible	N/A	Section 6.4, Appendix 9.1 and Appendix 9.6 (contained within the 2019 ES, Appendix 1.1, Volume II) and Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded Appendix 7.3, Volume II and Appendix 7.4, Volume II
Operation	Enhancement of retained habitat and provision of new habitats providing suitable roosting/nesting/refuge/foraging opportunities for bats, badgers, hedgehogs, reptiles, dormice, birds and invertebrates	The 2019 ES stated that habitat retention and creation would be incorporated into design of proposed development and that retained and created habitats would be managed in accordance with a LEMP. Since the 2019 ES was submitted, an Outline LEMP has been prepared. Management measures for retained and created habitats are detailed within this Outline LEMP and will be provided in subsequent detailed LEMPs which will be prepared for each phase of the development.	Planning condition	Up to Local (District) scale	Beneficial	Appendix 9.12 (contained within the 2019 ES, Appendix 1.1, Volume II) superseded Appendix 7.3, Volume II and Appendix 7.4, Volume II

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7.8 ASSESSMENT POST-MITIGATION

The assessment post-mitigation has generally remained unchanged since the 2019 ES was submitted and has been provided again for reference in the table below.

The main update since the 2019 ES was submitted is that an Outline LEMP (**Appendix 7.4**, Volume II of this ES Addendum) has now been produced. Where relevant, this is highlighted in the table below. However, it should be noted that the 'residual effects' remain unchanged.

PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT						COMPARISON WTH FUTURE BASELINE
			SIGNIFICANCE	ADV/BEN	ST/MT/LT	D/IND	P/T	R/IRR	
Construction	Nature conservation sites (Chevening Estate LWS, Woodlands West of Shoreham LWS, ancient woodland sites).	Subject to the implementation of the measures detailed in the CEMP, construction phase impacts on nature conservation sites (minor changes in habitat assemblage due to localised increase in air pollutants and dust) can be reduced to a level at which they are not significant. No residual impacts.	Negligible	-	-	-	-	-	Consistent with future baseline
Construction	Broadleaved semi-natural woodland	Potential loss of small areas of habitat to accommodate attenuation ponds. Although it may not be possible to avoid the initial loss of habitat, the enhancement of retained woodland and creation of new habitats (in accordance with the LEMP) will improve ecological and structural diversity and connectivity in the long-term. Since the 2019 ES was submitted, an Outline LEMP has been prepared. Retained and created habitats will be managed in accordance with this Outline LEMP and subsequent detailed LEMPs which will be prepared for each phase of the development.	Local (Site)	ADV	MT	D	P	IRR	Greater effect predicted in comparison to future baseline
Construction	Scattered trees	Loss of some habitat within site. Although this loss is unavoidable, replacement tree planting has been incorporated into the design of the proposed development, and habitats will be managed long-term in accordance with the LEMP. Since the 2019 ES was submitted, an Outline LEMP has been prepared. Retained and created habitats will be managed in accordance with this Outline LEMP and subsequent detailed LEMPs which will be prepared for each phase of the development.	Local (Site)	ADV	MT	D	P	IRR	Greater effect predicted in comparison to future baseline
Construction	Retained habitats (woodland, hedgerows and trees).	Subject to the implementation of the measures detailed in the CEMP, construction phase impacts on retained habitats (physical damage or disturbance leading to degradation) can be reduced to a level at which they are not significant. No residual impacts.	Negligible	-	-	-	-	-	Consistent with future baseline
Construction	Protected and notable species (bats, badgers, dormice, hedgehog, birds, reptiles).	Subject to the implementation of the measures detailed in the CEMP and the completion of works in accordance with Natural England Licences, as required, construction phase impacts on protected and notable species (killing, injury, disturbance, habitat loss) and breaches of legislation can be avoided. No residual impacts.	Negligible	-	-	-	-	-	Consistent with future baseline
Construction	Protected and notable species (bats, dormice, birds, reptiles).	Provision of additional bat, bird and dormice boxes and reptile refugia will increase the available roosting/nesting/refuge habitat for these species.	Local (Site)	BEN	LT	IND	P	IRR	Consistent with future baseline

BIODIVERSITY

PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT						COMPARISON WTH FUTURE BASELINE
			SIGNIFICANCE	ADV/BEN	ST/MT/LT	D/IND	P/T	R/IRR	
Operation	Nature conservation sites (Chevening Estate LWS, Woodlands West of Shoreham LWS, ancient woodland sites).	Subject to the implementation of measures detailed in the LEMP, recreational disturbance impacts on nature conservation sites will be minimised. Since the 2019 ES was submitted, an Outline LEMP has been prepared. Measures to minimise recreational disturbance impacts on nature conservation sites are included in this Outline LEMP and will be provided in subsequent detailed LEMPs which will be prepared for each phase of the development. Subject to the implementation of the Operational Lighting Strategy, illumination impacts on nature conservation sites will be minimised. Since the 2019 ES was submitted, a Summary Lighting Assessment and lighting contour plans for roadways have been prepared, with ecological input and in accordance with best practice guidance. This includes the use of directional LED lighting with no upward spill of light and reduced lighting columns. No residual impacts.	Negligible	-	-	-	-	-	Consistent with future baseline
Operation	Nature conservation sites (ancient woodland sites) and retained habitats (woodland, grassland hedgerows and trees).	Subject to the implementation of habitat management measures outlined in the LEMP, the structural and species diversity within the ancient woodland, other woodland, grassland and hedgerows will be enhanced. Ecological connectivity will be improved. Since the 2019 ES was submitted, an Outline LEMP has been prepared. Habitat management measures are included in this Outline LEMP and will be provided in subsequent detailed LEMPs which will be prepared for each phase of the development.	Up to County for ancient woodland, up to Local (District) for other habitats	BEN	LT	D	P	IR	Consistent with future baseline
Operation	Roosting, foraging and commuting bats	Subject to the implementation of a suitable operational lighting strategy, impacts on bats as a result of lighting can be avoided. Since the 2019 ES was submitted, a Summary Lighting Assessment and lighting contour plans for roadways have been prepared, with ecological input and in accordance with best practice guidance. This includes the use of directional LED lighting with no upward spill of light and reduced lighting columns. No residual impacts. This row is an addition to the 2019 ES, although the same conclusion would have been reached then as is reported in this ES Addendum.	Negligible	-	-	-	-	-	Consistent with future baseline
Operation	Terrestrial mammals (badgers and hedgehogs)	Subject to the implementation of speed limit within site and provision of tunnels under Crow Road, road-related mortality of terrestrial mammals can be avoided. No residual impacts. This row is an addition to the 2019 ES, although the same conclusion would have been reached then as is reported in this ES Addendum.	Negligible	-	-	-	-	-	Consistent with future baseline
Operation	Reptiles, dormice and birds	Increased predation by domestic pets, leading to decline in favourable conservation status.	Local (Site) scale / minor	ADV	LT	D	P	IRR	Greater effect predicted in comparison to future baseline
Operation	Nesting birds	Subject to the implementation of measures detailed in the LEMP, impacts on nesting birds as a result of inappropriate habitat management can be avoided. Since the 2019 ES was submitted, an Outline LEMP has been prepared. Habitat management measures are included in this Outline LEMP and will be provided in subsequent detailed LEMPs which will be prepared for each phase of the development. No residual impacts. This row is an addition to the 2019 ES, although the same conclusion would have been reached then as is reported in this ES Addendum.	Negligible	-	-	-	-	-	Consistent with future baseline

BIODIVERSITY

PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT						
			SIGNIFICANCE	ADV/BEN	ST/MT/LT	D/IND	P/T	R/IRR	COMPARISON WTH FUTURE BASELINE
Operation	Bats, badgers, hedgehogs, reptiles, dormice, birds and invertebrates	Enhancement of retained habitat and provision of new habitats will provide suitable roosting/nesting/refuge/foraging opportunities for a range of species groups.	Up to Local (District) scale / minor	BEN	LT	IND	P	R	Consistent with future baseline
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 BIODIVERSITY: INTER-CUMULATIVE SCHEME IMPACTS

The inter-cumulative scheme impacts are unchanged from the 2019 ES and no inter-cumulative impacts have been identified.

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8.1 INTRODUCTION

Company

Stantec is a leading consultancy of engineers, planners, environmental consultants, and economists working on major development and infrastructure projects.

Our environmental consultants and engineers work alongside our planners and economists ensuring key environmental issues are identified at the earliest inception stage of a project. We help shape high-quality schemes that optimise environmental performance and commercial outcomes whilst delivering lasting benefits for local communities.

Author

Jason Lewis is a Director of Transport Planning for Peter Brett Associates, now Part of Stantec. He has a total of 29 years' experience in the highways and transport field, of which 19 has been spent in consultancy. He is an experienced expert witness and has attended numerous public inquiries and appeals.

Jason, in a previous role, was part of a team that successfully gained IEMA accreditation and certification for a planning and transport consultancy firm. He is experienced in the field of assessing the transport aspects of Environmental Assessment, on a range of schemes of the size and scale similar to the proposals.

In accordance with Regulation 18(5) of the EIA Regulations 2017, as amended, a statement outlining the relevant expertise and qualifications of competent experts, in the context of the EIA Regulations and for contributions to the Environmental Statement, is provided in Appendix A.5, contained within the Transport Assessment, **Appendix 8.2**, Volume II of this ES Addendum.

Chapter Purpose

The purpose of this chapter of the ES Addendum, prepared by Stantec, is to describe the changes associated with the likely significant effects of the proposed development on the existing transport conditions within the area local to the application site and the wider surrounding area since the 2019 ES was compiled.

The chapter and its supporting appendices should be read in conjunction with *Chapter 10 Transportation & Access* contained within the 2019 ES which provides a description of the methods used in the transport assessment, a description of the relevant baseline conditions of the application site and surrounding area, and an assessment of the likely significant environmental effects relating to transport during the demolition and construction works and once the proposed development is completed and operational.

The scheme amendments comprise a reduction in the number of dwellings proposed from an additional 300 to 185 compared to the 2015 OPP, with the former being assessed in the 2019 ES and the latter in this ES Addendum. Mitigation measures are identified, where appropriate, to avoid, reduce or offset any adverse effects of the proposed development during the demolition and construction works and once the proposed development is completed and operational. The chapter concludes by examining the nature and significance of likely residual effects taking account of the mitigation measures.

A Transport Assessment (TA) has been submitted in alongside the planning application for the proposed development. This chapter has been prepared on the basis of the detailed assessment within the TA at **Appendix 8.2**, Vol II and refers to the TA and its supporting appendices where further information is required.

Appendices

- **Appendix 8.1**: Transportation & Access Assessment Pre-Mitigation Tables; and
- **Appendix 8.2**: Updated Transport Assessment and appended Travel Plan. This supersedes the 2019 ES TA and Travel Plan previously within Appendix 10.1.

8.2 METHODOLOGY

Guidance

This chapter has been prepared in accordance with the requirements set out in the EIA Regulations 2017 and has taken account of the guidance presented within the following:

- Guidelines for Environmental Impact Assessment (Institute of Environmental Management and Assessment (IEMA), 2004) [40];
- Guidelines for the Environmental Assessment of Road Traffic (Institute of Environmental Assessment (now IEMA), 1993) (the 'IEMA Guidelines') [41]; and
- Volume 11 of the Design Manual for Roads and Bridges (DMRB) – Environmental Assessment (Highways Agency et al., 2007 / 2008 / 2009 / 2011) [42].

The above listed 'Guidelines for the Environmental Assessment of Road Traffic' refer to the 'Manual of Environment Appraisal' (MEA) published by the (then) Department of Transport in 1983, has since been superseded. Reference has therefore been made to the relevant sections of the DMRB - specifically Volume 11 entitled 'Environmental Assessment'.

Legislation & Policy

No policy has changed since the submission of the 2019 ES chapter and therefore details for the following legislation and policies can be seen within the 2019 ES.

National Policy

- Ministry of Housing, Communities and Local Government – National Planning Policy Framework (February 2019) [7]; and
- Ministry of Housing, Communities and Local Government – Planning Practice Guidance (2014, updated in 2020) [4].

Regional Planning Policy

- KCC Local Transport Plan 3: 2011-2016 (2011) [43]; and
- Kent Downs AONB Management Plan 2014 – 2019 (2014) [44].

Local Planning Policy

- Sevenoaks District Council, Core Strategy Development Plan Document (2011) [19]; and
- Sevenoaks District Council, Allocations and Development Management Plan (2015) [29].

Consultees

Kent County Council – Highways, Transportation and Waste

- Louise Rowlands (18/10/2018, 22/1/2019, 30/01/2019 & meetings 30/01/2020, 02/04/2020)
- Dave Barton (22/1/2019, 30/01/2019 & meetings 30/01/2020, 02/04/2020)
- Laura McKenzie (19/12/2019 & 30/01/2019, meetings 30/01/2020, 02/04/2020)
- Dan Bruce (05/05/2020)
- Pre-Application Comments (22/04/2020)

Sevenoaks District Council – Planning

- Alison Salter (18/10/2018)
- Claire Shearing (22/1/2019)

Scoping

A Transport Scoping Report was submitted for the proposed development to KCC in September 2018. Following this submission, further information was submitted to KCC during the pre-application stage.

A number of meetings were undertaken with KCC through late 2018 and ongoing up to the planning application stage, on matters including but not limited to: means of access, bus access, walking and cycling provisions, and on and off-site vehicle access design and safety. Various correspondence with SDC and KCC has supported these discussions. The Transport Scoping Report and pre-application discussion for the TA can be found in Appendix A of the TA which is contained in **Appendix 8.2**, Volume II of the ES Addendum. Further scoping discussions have been

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undertaken with KCC Highways and Transportation including a meeting held on 30th January 2020 where the updated scheme and TA work to be completed was discussed and agreed. This was followed by an online meeting held on 2nd April 2020 where the updated scheme TA, Bus Note, Travel Plan and Cycle Route Note draft was reviewed with KCC, followed by KCC's pre-application comments. Further discussions were held with KCC's Policy, Infrastructure and Community Team Leader - Public Transport team in respect of bus transport.

In regard to the EIA Scoping Report, no consultation response was provided by KCC (the Highway authority); however, Highways England (HE) provided a response, which was included within the Scoping Opinion. The response stated that HE had no comment on whether or not an EIA is required but that they would be concerned with proposals that have potential to impact on the Strategic Road Network (SRN), which in this area is the M25 and M26. Potential effects on the M25 have been assessed in this chapter. Effects on the M26 have not been assessed as there is no direct route for vehicles to enter the M26 from the site without entering the M25, travelling to Junction 6 at Godstone before travelling in the opposite direction to the M26.

Consideration of Climate Change

It is not considered that climate change will have an effect on the development in terms of transport. However, policies on electric vehicle (EV) charging have been considered in the TA and will be provided on the development at a level required by the council and government at the reserved matters stage. It is anticipated that an increase in electric vehicles and public transport, walking and cycling improvements would assist in tackling climate change. This is the same as within the 2019 ES chapter.

Consideration of Human Health

Human health would be affected by the change of traffic flows due to the development; however, this would be as a result of changes in air quality and noise. Therefore, consideration of human health in this regard is addressed in *Chapter 11 Air Quality* and *Chapter 12 Noise & Vibration*, of the 2019 ES. This is the same as within the 2019 ES chapter.

Consideration of Risk of Major Accidents and/or Disasters

Five years' worth of accident data has been considered within the TA and within this chapter. Consideration has been made as to how the development may impact on accident rates for cluster areas (excluding the M25). Details of the accidents considered can be found in section 2.9 of the TA in **Appendix 8.2**, Volume II of this ES Addendum. This is the same as within the 2019 ES chapter.

Alternatives

Consideration has been made to the Certificate of Lawfulness of Existing Use or Development (CLEUD), which has been classed as an alternative baseline test within this ES addendum.

Assessment of Baseline Conditions & Receptor Sensitivity

This assessment is the same as within the 2019 ES, with the addition of driver delay assessments at M25 Junction 4 and the M25/A21/A25 junctions in response to HE comments on the 2019 TA. The assessment of transport and access related impacts has been carried out in accordance with the 'Guidelines for the Environmental Assessment of Road Traffic' and the 'Design Manual for Roads and Bridges'.

The baseline conditions year that has been considered is 2018, in line with the assessments carried out within the TA, **Appendix 8.2**, Volume II of this ES Addendum.

Within The TA, the focus of the assessment is on the impacts of the development upon the highway. For the purpose of this assessment individual assessments have not been completed for public transport, cycling and pedestrian networks as these were not seen as a concern by KCC and SDC. These have therefore been scoped out the assessment. Baseline conditions of the existing cycle, walking and bus routes are provided within section 2 of the TA **Appendix 8.2**, Volume II of this ES Addendum.

The TA sets out trips which could occur under the CLEUD, as agreed with SDC, based on the pre-and post-development floor areas within the certificate. Trip offsets against the proposed development are then set out, confirming the residual vehicle trip generations. Within this chapter the effects of the CLEUD has been tested as a sensitivity test against the proposed development. This has been included within the 2035 Baseline (removing the OLP from the baseline) and is termed an alternative baseline.

The IEMA Guidelines suggest two broad rules to identify the appropriate extent of the highways assessment area, as follows:

- Road links with all vehicle or Heavy Vehicles traffic flow increases in any assessment year of +30%; and
- Road links with medium or high sensitivity receptors with flow increases greater than 10%.

Based on these rules, the highway assessment area includes all links of the application site's surrounding local and strategic road network that are subject to daily traffic flow changes as a result of the proposed development's construction or operation.

The area that has been assessed to determine the likely significant impacts of the proposed development includes links (roads) and junctions of significant importance to the local and strategic road networks in the vicinity of the application site, i.e. links and junctions which connect the site to the main local destinations and to the wider strategic road network (A21 towards Bromley, M25 at junctions 4 and 5, and A25), where changes in traffic would be likely to occur because of the proposed development.

A combination of Manual Classified Counts (MCC) junction counts and Automatic Traffic Counts (ATC) data has been collected to establish a 2018 baseline. This data has been extracted from previous planning applications for the site. To supplement recent traffic surveys that were conducted in 2017 and 2018, counts have been taken from the 2015 Outline Planning Permission (2015 OPP) and uplifted using Tempro to form a baseline. Full details of which junctions and links were assessed and when can be found at section 6 within the updated TA, **Appendix 8.2**, Volume II of this ES Addendum.

The receptors that have been identified for the proposed development, along with their main features and sensitivity, have been determined based on professional judgement taking into account their relative importance for all road users, and are summarised in Section 8.3 of this chapter. The majority of the identified receptors are links, but a number of junctions have been identified in relation to the potential for driver delay.

A number of the links have varying characteristics along their length. For example, Otford Lane is mainly a rural lane with little frontage or pedestrian activity, although when it enters the village of Halstead, it is subject to a much higher level of frontage activity and has a more important role for pedestrian movement. In such cases the link has been categorised in relation to the most sensitive part. **Table 8.1** sets out the scale of sensitivity that has been applied to receptors identified and considered within this assessment.

Table 8.1
Scale of Sensitivity used in the Assessment

SENSITIVITY	DESCRIPTION
Very High	High frontage activity and pedestrian activity: access to many residential properties and local facilities, including a school.
High	Medium frontage and pedestrian activity: access to properties and facilities
Medium	Some frontage and medium pedestrian activity.
Low	Little frontage and low pedestrian activity.
Negligible	No frontage and no pedestrian activity.

Assessment of Magnitude

The re-assessment has been undertaken based on the variations to the description of development contained within *Chapter 3 Application Site & Proposed Development* of this ES Addendum.

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The IEMA Guidelines identify that the main transport effects that could arise from the construction and operation of new developments relate to the following:

- Severance;
- driver delay;
- pedestrian delay and amenity;
- fear and intimidation;
- accidents and road safety;
- dust and dirt; and
- hazardous loads.

The 'dust and dirt' criterion has not been considered within this assessment, as this topic is covered within *Chapter 11 Air Quality* of the 2019 ES.

The 'Hazardous Loads' criterion has also not been considered in this assessment, as at this stage it is deemed unlikely that the construction or operation of the proposed development will require the transportation of hazardous loads.

As the details of the approach to the assessment in respect of each of the above criteria is the same as the ES chapter submitted in 2019, please refer to the details within that submission.

Assessment of Significance

The assessment of significance within this chapter is based on the matrix presented in Section 10.2 of the 2019 ES, contained in **Appendix 1.1**, Volume II of this ES Addendum.

Relevant Future Baseline & Cumulative Schemes

The baseline conditions and cumulative schemes have not changed since the submission of the 2019 ES, other than the addition of driver delay assessments at M25 Junction 4 and the M25/A21/A25 junctions.

The following developments have been assessed within this chapter and added to the future baseline scenarios. The section below sets out in bullet points the baseline and cumulative schemes, with more detail found in the 2019 ES, contained in **Appendix 1.1**, Volume II of this ES Addendum.

- Fort Halstead Outline Planning Permission (OPP) – The previous permission (15/00628/OUT).

Mitigation from the OPP carried forward to the proposed development include:

- Star Hill Road Access;
- Otford Lane/A224 Junction;
- Star Hill Traffic Calming;
- Internal Highway Traffic Calming;
- Star Hill Road/Rushmore Hill;
- Pedestrian and Cycle Mitigation;
- Public Transport Improvements; and
- A detailed site-wide Travel Plan.

Cumulative Scheme

- The West Kent Cold Store (WKCS) planning permission (09_02635/FUL) includes for up to 500 houses, commercial units and a medical centre.

Relevant Associated Development

The associated developments have not changed since the submission of the 2019 ES. These have been pullet pointed below with more detail found within the 2019 submission.

- Star Hill Road Access;
- Otford Lane/A224 Junction;
- Star Hill Traffic Calming;
- Internal Highway Traffic Calming;
- Star Hill Road/Rushmore Hill monitoring;
- Pedestrian and Cycle Mitigation; and
- Public Transport Improvements.

Assumptions/Limitations

All of the assumptions and limitations outlined within the 2019 ES have been carried across to this chapter. In addition to these, the time penalty outlined within the TA to reduce the traffic using the Star Hill Road access has not been applied to the development traffic in this chapter, to provide a worst-case scenario for Star Hill Road, given it is a more sensitive receptor than London Road. Whilst this is the case with most of the impacts, driver delay has been taken from the TA and therefore modelling includes for the driver penalty as explained within the TA.

It should also be noted that it is expected that the completion year of the development would be 2031, although the assessments have been undertaken to 2035 in line with KCC requests for highway traffic modelling.

Details of the limitations and assumptions for each of the calculations can be found in the appropriate sections of the TA in **Appendix 8.2**, Volume II of this ES Addendum.

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8.3 BASELINE CONDITIONS

The baseline conditions within the TA and this chapter have remained unchanged since the 2019 ES. The table below has been re-provided for this chapter, although is the same as within the 2019 ES.

KEY RECEPTORS	DESCRIPTION	SENSITIVITY	FURTHER INFORMATION
Old London Road - Link	Local distributor with some frontage activity on one side of road and limited pedestrian activity.	Low	Section 2 of the TA in Appendix 8.2, Volume II
Knockholt Main Road - Link	Rural lane with moderate frontage activity: access to many properties and some local facilities, including a primary school.	Medium	Section 2 of the TA in Appendix 8.2, Volume II
Shoreham Lane / Knockholt Road - Link	Rural lane with moderate frontage activity within the village of Halstead: access to some residential properties and local facilities.	Medium	Section 2 of the TA in Appendix 8.2, Volume II
Otford Lane - Link	Rural lane with frontage activity within the village of Halstead: access to some residential properties and local facilities.	Medium	Section 2 of the TA in Appendix 8.2, Volume II
Star Hill Road (South) - Link	Rural lane with little frontage or pedestrian activity: access to very few residential properties on one side of road.	Low	Section 2 of the TA in Appendix 8.2, Volume II
Crow Drive - Link	Rural lane with little direct frontage activity.	Medium	Section 2 of the TA in Appendix 8.2, Volume II
A224 London Road - Link	Local distributor with little frontage activity: access to few local facilities.	Low	Section 2 of the TA in Appendix 8.2, Volume II
M25 (south of A21) - Link	Strategic motorway with no frontage activity.	Low	Section 2 of the TA in Appendix 8.2, Volume II
Rushmore Hill - Link	Rural lane with moderate frontage activity: access to many properties and some local facilities.	Medium	Section 2 of the TA in Appendix 8.2, Volume II
A224 Orpington By-Pass - Link	Local distributor with little frontage activity: access to a few residential properties.	Low	Section 2 of the TA in Appendix 8.2, Volume II
A21 Sevenoaks Road - Link	Strategic distributor with little frontage activity.	Low	Section 2 of the TA in Appendix 8.2, Volume II
A224 Polhill - Link	Local distributor with no frontage activity.	Low	Section 2 of the TA in Appendix 8.2, Volume II
Otford High Street - Link	Rural lane with moderate to high frontage activity: access to many residential properties high and local facilities, including a school.	High	Section 2 of the TA in Appendix 8.2, Volume II
A224 London Road (Aisher Way to A25 Riverhead) - Link	Local distributor with medium frontage and pedestrian activity: access to properties and facilities.	High	Section 2 of the TA in Appendix 8.2, Volume II
A224 London Road (Morants Court Road roundabout to Aisher Way) - Link	Local distributor with medium frontage and pedestrian activity: access to properties and facilities.	High	Section 2 of the TA in Appendix 8.2, Volume II
Star Hill Road (north) - Link	Rural lane with some frontage's activity within the village of Knockholt Pound.	Medium	Section 2 of the TA in Appendix 8.2, Volume II
Hewitt's roundabout - Junction	Strategic junction	High	Section 2 of the TA in Appendix 8.2, Volume II
Shacklands roundabout - Junction	Distributor junction	Medium	Section 2 of the TA in Appendix 8.2, Volume II

Details of the local transport network within the vicinity of the site can be found within the TA, **Appendix 8.2**, Volume II of this ES Addendum. These details include information about walking, cycling and public transport infrastructure and services. This has aided the classification of the key receptors within this section.

8.4 POTENTIAL SIGNIFICANT IMPACTS

The potential impacts outlined within the 2019 ES have remained the same, other than for M25 Junction 4 and the M25/A21/A25 junction where the scope has been extended for the driver delay assessment in response to queries raised by HE to the TA. The table below has been re-provided for this chapter, although is the same as within the 2019 ES.

PHASE	DESCRIPTION	ADVERSE/BENEFICIAL
Construction	The potential impacts of traffic generated by the construction works on severance, driver delay, pedestrian delay and amenity, fear and intimidation, accidents and road safety, pedestrian network, cycle network and public transport network.	Adverse
Operation	The potential impacts of traffic generated by the operational scheme on severance, driver delay, pedestrian delay and amenity, fear and intimidation, accidents and road safety, pedestrian network, cycle network and public transport network.	Adverse

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8.5 DESIGN INTERVENTIONS

The design interventions outlined within the 2019 ES have remained the same. The table below has been re-provided for this chapter, although is the same as within the 2019 ES.

DESIGN INTERVENTION	DESCRIPTION	REASON FOR INTERVENTION	FURTHER INFORMATION
Vehicular Accesses	The proposed development includes for the use of two available vehicle accesses: Crow Drive/A224 Polhill (Roundabout) and Crow Drive/Star Hill Road (Priority Junction).	KCC have stated that the application site must have two vehicular accesses in accordance with the Kent Design Guide requirement for residential developments of more than 300 units to have two access points.	Section 4 of the TA in Appendix 8.2, Volume II
Traffic Calming Measures	This includes reduction of speed limit within vicinity of the site access, speed warning signs. This includes traffic calming measures along Crow Drive.	Intervention previously requested in the 2015 OPP, carried over for proposed development	Section 4 of the TA in Appendix 8.2, Volume II
Pedestrian and Cycle Measures	Highway measures proposed will improve connectivity for pedestrians and cyclists between the existing highway network and the site. On street cycle lanes on London Road to connect site to Knockholt Station.	Ensure good connectivity between the site and the surrounding areas.	Section 4 of the TA in Appendix 8. 2, Volume II
Cycle Parking	Cycle parking will be supplied to the minimum standards set out for the use by the Local Highway Authority.	Requirement within policy	Section 8 of the TA in Appendix 8.2, Volume II
EV Charging	Charging for EVs to meet Government or Council policy requirements at the Reserved matters stage.	Requirement within policy	Section 3 of the TA in Appendix 8.2, Volume II

8.6 ASSESSMENT PRE-MITIGATION (INCLUDING DESIGN INTERVENTION)

The information outlined below has remained unchanged since the 2019 ES. The following assessments have been undertaken in line with the IEMA guidance criteria outlined at the beginning of this chapter. This includes; Severance, Driver Delay, Pedestrian Delay & Amenity, Fear & Intimidation, and Accidents & Safety; the associated assessment pre-mitigation tables are within **Appendix 8.1**, Volume II of this ES Addendum. The assessments have been undertaken for both the construction phase and once the scheme is fully operational in 2035. The future year of 2035 has been assessed in line with the TA, to align with the end of the emerging Local Plan. It is expected that all uses would be occupied and operational by 2035 and, as such, the use of this year for the operational phase assessment is considered robust. For the construction year, the peak year of construction has been used which is 2023 as this is the peak year of construction considering cumulatively and concurrently occurring site building activities, utility works and roadworks. The peak year for cumulative construction and proposed development occurs in 2029, just before the development construction is finished, however the construction traffic element in this scenario is lower than in 2023 when the construction only peak occurs. The 2035 proposed development scenario produced a greater traffic flow that the aforementioned 2029 scenario, and is a worst-case, therefore the 2029 scenario has not been tested within the construction phase.

The peak construction year has also been assessed including the development traffic associated with the level of occupation expected by this year. Only four links have been assessed within the construction phase as these are the links that construction vehicles would use as defined within the Construction Management Plan (CMP) for the scheme, which can be seen in section 7 of the TA contained within **Appendix 8.2**, Volume II of this ES Addendum.

It is noted that the proposed full occupation year is 2031, although as KCC have requested 2035 this has been assessed for the TA and this chapter as a worst-case scenario. The 'during occupation' scenarios compare the 2035 Baseline (Do Minimum); which includes the 2035 background traffic, the existing residential elements of the site, committed developments including the West Kent Cold Store and the OPP scheme, with the 2035 Baseline with proposed development (Do Something) to understand the impact of the proposed development on the key links identified. An alternative baseline test has also been undertaken which includes the CLEUD within the baseline. This alternative baseline comprises; the 2035 background traffic, the existing residential elements of the site, committed developments including the West Kent Cold Store but not the OPP scheme. The OPP scheme has not been considered within the sensitivity test as it is not possible for the CLEUD and the OPP to be in operation at the same time. The sensitivity test is an alternative baseline and should therefore be considered against the 'with development' scenarios already presented.

Severance

The results shown for severance have changed slightly due to the change in residential numbers, however the conclusions from this assessment are the same as within the 2019 ES submission. A summary is provided below with further details contained within **Appendix 8.1**, Volume II of this ES Addendum.

Construction

As can be seen within the table contained within **Appendix 8.1**, Volume II of this ES Addendum, with the exception of Crow Drive, all links affected by construction traffic experience a maximum of 7.8% increase of traffic due to the construction. Crow Drive experiences a 126.7% increase of traffic. There are no construction flows for the OPP site for 2023 and therefore cannot be compared directly. As there are no OPP flows the baseline flows for the construction year are lower and therefore Crow Drive (an internal road with little activity) has a very low baseline. Although the flow increase is large, this is a short-term impact of the peak construction period. On this basis, the construction traffic is seen to have a Major Adverse effect, however, this will be managed throughout the construction period and would therefore not have a significant effect.

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Operation

As can be seen the majority of links experience an increase in severance in the proposed development scenario when compared against the future baseline scenario, however, the majority are below 30% increase and therefore have a Negligible effect. The only link to receive a reduction is Rushmore Hill. There is one link that experiences an increase in vehicles over 30%, which is Crow Drive. Due to the nature of these roads and the receptor sensitivity level given, these links experience an adverse – minor effect due to the development, albeit baseline flows are seen to be low. On the whole, the development is anticipated to have a Minor Adverse – Negligible effect.

Negative percentage impacts denote links where the 2035 With Development flows are lower compared to the 2035 Future Base flows. This is because the 2035 Future Base scenario contains flows from the 2015 OPP consent for the site based on a single access from Polhill whereas the current proposed development includes Star Hill as a secondary access. As such, a single access point results in higher flows across various links and junctions as the flows are not distributed depending on origin and destination and all development flows would have to route via the north of the site. Having a secondary access point from Star Hill results in lower flows across the links shown despite the 2015 consent for the site having a lower quantum of residential development.

Alternative Baseline

As can be seen the majority of links experience a reduction in severance in the proposed development scenario when compared against the alternative future baseline scenario with the CLEUD, with very few links experiencing an increase in traffic. Crow Drive sees the largest increase with 7% uplift, however this is due to the increased use of the southern access for the CLEUD use and therefore the site has an increased number of vehicles using the Polhill access. Due to the nature of this road and the receptor sensitivity level given, this link experiences an adverse – minor effect due to the development. On the whole, the development is anticipated to have a Minor Adverse – Negligible effect. Negative percentage impacts denote links where the 2035 With Development flows are lower compared to the 2035 Future Alternative Base flows with the CLEUD.

Driver Delay

Changes have been made to the Driver Delay section, with the addition of the A25/A21/M25 and M25 Junction 4 junctions being added in HE's response to the 2019 TA. A summary is provided below with further details contained within **Appendix 8.1**, Volume II of this ES Addendum. The introduction of the A25/A21/M25 junction has increased the extent of the results reporting due to the number of links required within TRANSYT and therefore the full results can be found in **Appendix 8.2**, Volume II of this ES Addendum.

Construction traffic has not been assessed for driver delay as the majority of movements to and from the site throughout the construction period would be outside of the AM and PM peaks and therefore would not be travelling within the busiest period of the day and will be less likely to affect driver delay.

The following junctions have been assessed for delay; Site Access/Star Hill, Hewitts Roundabout, Shacklands Roundabout, Otford Lane/A224, A224 Polhill junction/ Pilgrims Way West Link Road junction, Morants Court Road Roundabout, A25/A21/M25 interchange and M25 Junction 4. These junctions have been assessed for driver delay in the TA. The driver delay section includes delay experienced by bus users as they would be on the links that have been assessed and therefore would be affected in the same manner as car drivers. No 2035 Future baseline has been modelled for the Star Hill access as the 2015 OPP was consented for one access and therefore would not be applicable within the scenario, however the alternative baseline including the CLEUD would utilise two accesses and therefore has been modelled.

Construction

Driver delay has not been assessed for the construction period, as the flows are only proposed to use a few links within the network and are expected to have a lower impact on the junctions that the fully occupied scheme. On this basis, the worst-case scenario assessed is within the 2035 full occupation scheme.

Operation

The M25/A25/A21 junction both see a larger delay as a result of the development within Moderate Adverse effects in the 'with development' scenarios; however, when compared to the impact of the CLEUD within the alternative baseline, the development is significantly improved. In addition, the M25/A25/A21 junction was not included within modelling undertaken by the 2015 OPP (the assessment was requested by HE in late 2019) and therefore the flows have not been included within the baseline scenario.

As such the 'with development' scenario effects are shown to be higher, however in reality this is not the case as OPP trips would be present at the junction. As a result the junction effects have been described as Moderate rather than Major. It is expected that this is a worst-case scenario as it is believed that as the Westerham Road junction is difficult to navigate, that trips would use the cross roads at Sundridge instead and not use the Westerham Road arm of the junction, and therefore reducing the impact to Negligible. Indeed the Google journey mapping tool suggests this is more likely to be the preferable route to access the A21, suggesting a balance between the two junctions is more likely. As the highest impact is seen on one arm of the junction it is seen that the junction as a whole has a Negligible effect as a result of the development.

As can be seen from the table contained within **Appendix 8.1**, Volume II of this ES Addendum, there are no other junctions that experience more than a 9.97 seconds per Passenger Car Unit (PCU) delay in the AM as a result of the development and 8.29 second in the PM peak as a result of the development. The majority of junction arms experience a slight reduction in delay as a result of the development. On this basis, it is seen that the development will have a Negligible effect on driver delay for both car and bus users.

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Alternative Baseline

The M25 Junction 4 sees large increases and reductions in delay within the alternative baseline scenario due to the tidality of the two development types. As such it is considered that the impact is negligible as the reductions are higher than the increases as in line with the tidal nature experienced at this junction.

As can be seen from the table contained within **Appendix 8.1**, Volume II of this ES Addendum, there are no other junctions that experience more than a 9.97 second delay in the AM as a result of the development in comparison to the CLEUD alternative baseline and 120.9 second in the PM peak as a result of the development. The majority of junction arms experience a reduction in delay as a result of the development as the CLEUD generally produces larger movements within the peaks than the proposed development. On this basis, it is seen that the development will have a Negligible effect on driver delay for both car and bus users.

Pedestrian Delay & Amenity

The results shown for Pedestrian Delay & Amenity have changed slightly due to the change in residential numbers, however the conclusions from this assessment are the same as within the 2019 ES. A summary is provided below with further details contained within **Appendix 8.1**, Volume II of this ES Addendum.

Construction

As can be seen from the table contained within **Appendix 8.1**, Volume II of this ES Addendum, during the construction period only one of the four links experience a doubling of traffic and HGVs when compared to the baseline. However, as previously stated, Crow Drive is an internal route which has a low traffic usage in the 2023 construction year. This increase in movements would be a short-term effect of the construction period. As it is a short-term impact, it is anticipated that this would have a Negligible effect on pedestrian delay and amenity and would be heavily managed on- site. It should also be noted that construction traffic flows would be spread out throughout the day and construction workers would be instructed to arrive and depart outside of the peak hours.

Operation

As can be seen from the table above, during the operation of the proposed development, there is no link that is anticipated to experience either a doubling or halving of vehicles when comparing the future baseline and the future baseline with proposed development scenarios. As can be seen, many of the links experience a reduction in hourly two-way flows. The only link that sees a double of HGVs are on Otford Lane. This is not severe as the link goes from one HGV to two HGVs. In addition to this, the pedestrian and cycle improvements works proposed within the TA would assist pedestrian and cycle delay. On this basis, the development is expected to have a Negligible effect on the links assessed.

Alternative Baseline

As can be seen from the table contained within **Appendix 8.1**, Volume II of this ES Addendum, during the operation of the proposed development, there is no link that is anticipated to experience either a doubling or halving of vehicles when comparing the alternative future baseline with the CLEUD and the future baseline with proposed development scenarios. As can be seen, many of the links experience a reduction in hourly two-way flows. The only link that sees a double of HGVs are on Otford Lane. This is not severe as the link goes from zero HGV to two HGVs. In addition to this, the pedestrian and cycle improvements works proposed within the TA would assist pedestrian and cycle delay. On this basis, the development is expected to have a Negligible effect on the links assessed.

Fear & Intimidation

The results shown for Fear and Intimidation have changed slightly due to the change in residential numbers, however the conclusions from this assessment are the same as within the 2019 ES. A summary is provided below with further details contained within **Appendix 8.1**, Volume II of this ES Addendum.

Construction

As can be seen from the table contained within **Appendix 8.1**, Volume II of this ES Addendum, the only link to see a change in magnitude is A224 London Road, which sees a change due to the increase of HGVs. This is expected due to the large number of HGVs expected for the development of the scheme. However, this is the peak year of construction and only just goes over the threshold to fall into a medium magnitude. As this is expected for a short-term period, it is considered that this would cause a Negligible effect on fear and intimidation. It should also be noted that construction traffic flows would be spread out throughout the day and construction workers would be instructed to arrive and depart outside of the peak hours and therefore would not arrive all at once, so would not be expected to change the characteristics of any links assessed.

Operation

As can be seen from the table contained within **Appendix 8.1**, Volume II of this ES Addendum, no link assessed has seen a change in magnitude as a result of the development and therefore the characteristics of the links will not change. On this basis, the development is to have a Negligible effect on all links assessed.

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Alternative Baseline

As can be seen from the table contained within **Appendix 8.1**, Volume II of this ES Addendum, no link assessed has seen a change in magnitude as a result of the development in comparison to the alternative baseline including the CLEUD and therefore the characteristics of the links will not change. On this basis, the development is to have a Negligible effect on all links assessed.

Accidents & Safety

The results shown for Accidents and Safety have remained unchanged since the 2019 ES. A summary is provided below with further details contained within **Appendix 8.1**, Volume II of this ES Addendum.

As the operation of the development in 2035 is seen to have higher flows than the construction period, the effect of construction vehicles on accidents and safety has not been considered as the 2035 with development scenario is worst-case. The alternative baseline scenario including the CLEUD has not been put within the table contained within **Appendix 8.1**, Volume II of this ES Addendum, as the figures expected are the same as the 'do minimum' scenario within the table.

For the purpose of this assessment, accidents along the M25 have not been considered, as the development is seen to have a beneficial effect on the M25 as there is a reduction of 0.4% daily two-way trips along the M25 in comparison to the 2035 Baseline as seen within the Severance table.

8.7 MITIGATION & ENHANCEMENT MEASURES

There have been no changes to the mitigation and enhancement measures outlined within the 2019 ES and the table has been re-provided below.

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER	MAGNITUDE POST-MITIGATION	ADVERSE/BENEFICIAL	FURTHER INFORMATION
Construction	Potential for HGV movements to be uncontrolled	Implementation of a Construction Logistics Plan and a Construction Environmental Managemental Plan to reduce the effects of HGVs and worker vehicles throughout construction.	Planning condition	Small	Negligible Beneficial	Section 4 of the TA in Appendix 8. 2, Volume II
Operation	Number of vehicles generated by the development	Implementation of a Travel Plan to reduce car vehicle trip generation and promote sustainable modes share.	Planning condition	Small	Negligible Beneficial	Section 4 of the TA in Appendix 8. 2, Volume II
Operation	Traffic Flows	Periodic monitoring of traffic flows along Star Hill Road/Rushmore Hill is proposed to inform if the developer should be required to design additional traffic calming measures.	Planning condition	Small	Negligible Beneficial	Section 4 of the TA in Appendix 8. 2, Volume II
Operation	Number of people driving to and from site	The main public transport improvements include the diversion of the existing 3 bus service (formerly the 431 service) into the site and provision of a new community bus service into the site.	Planning condition	Small	Negligible Beneficial	Section 4 of the TA in Appendix 8. 2, Volume II

8.8 ASSESSMENT POST-MITIGATION

There have been no changes to the assessment results post-mitigation outlined within the 2019 ES and the table has been re-provided below.

PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT					
			SIGNIFICANCE	ADV/BEN	ST/MT/LT	D/IND	P/T	R/IRR
Construction	Severance	Implementation of the CEMP will agree routes for construction vehicles	Negligible	BEN	ST	IND	T	IRR
Construction	Driver Delay	Implementation of the CEMP will ensure that HGVs operate within specific hours which will help to ensure construction vehicles are on the Local Highway Network outside of Peak hours to reduce the impact of the construction on the operation of junctions within both the AM and PM peak.	Negligible	BEN	ST	IND	T	IRR
Construction	Pedestrian and Cycle Delay	Implementation of the CEMP will ensure that HGVs operate within specific hours which will help to reduce the likely interaction between people and HGVs.	Negligible	BEN	ST	IND	T	IRR
Construction	Fear and Intimidation	Implementation of the CEMP will ensure that HGVs operate within specific hours which will help to reduce the likely interaction between people and HGVs.	Negligible	BEN	ST	IND	T	IRR
Construction	Accident and Safety	Limited Impact	Negligible	BEN	ST	IND	T	IRR
Operation	Severance	Bus measures, monitoring and Travel Plan expected to reduce car trips which would reduce severance	Negligible	BEN	LT	IND	P	IRR

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PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT					
			SIGNIFICANCE	ADV/BEN	ST/MT/LT	D/IND	P/T	R/IRR
Operation	Driver Delay	Bus, monitoring and Travel Plan and mitigation at junctions is anticipated to relieve driver delays at the assessed junctions.	Negligible	BEN	LT	IND	P	IRR
Operation	Pedestrian and Cycle Delay	Bus, monitoring and Travel Plan expected to reduce car trips which would reduce effect on pedestrian and cycle delay.	Negligible	BEN	LT	IND	P	IRR
Operation	Fear and Intimidation	Bus, monitoring and Travel Plan expected to reduce car trips which would reduce effect on fear and intimidation.	Negligible	BEN	LT	IND	P	IRR
Operation	Accident and Safety	Bus, monitoring and Travel Plan expected to reduce car trips which would reduce effect on accidents and safety.	Negligible	BEN	LT	IND	P	IRR
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								

8.9 TRANSPORTATION & ACCESS: INTER-CUMULATIVE SCHEME IMPACTS

CUMULATIVE SCHEME	SCHEME DESCRIPTION	POTENTIAL FOR CUMULATIVE IMPACTS?	CONSIDERED WITHIN ASSESSMENT?
West Kent Cold Store	500 residential units, commercial units and a medical centre	The West Kent Cold Store scheme would have the potential to produce cumulative effects alongside the current proposals on local health, education, jobs and housing provision as a result of bringing 500 additional new residents to the area.	Yes – already inherently considered within assessment set out within this chapter.

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9.1 INTRODUCTION

Company

Hydrock Consultants Ltd.

Author

Eddy Goldsmith, Principal Acoustic Engineer – B.Eng (Hons) Acoustics, MIOA

Chapter Purpose

The purpose of this chapter of the ES Addendum is to describe the changes associated with the likely significant effects of the proposed development on the environment in terms of noise since the 2019 ES was compiled. The chapter and its supporting appendices should be read in conjunction with *Chapter 12 Noise & Vibration* contained within the 2019 ES which describe the planning policy context, the assessment methodology; the baseline conditions at and in the vicinity of the application site; the likely significant effects; 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 remain as follows:

- Present an assessment of the potential noise impacts associated with the proposed development; and
- Ensure that impacts on human health and the wider environment are assessed and mitigated appropriately.

Appendices

The following appendices remain valid from the 2019 ES:

- **Appendix 12.1**: Baseline Noise Monitoring; and
- **Appendix 12.2**: Demolition and Construction Noise Assessment.

The following appendices supersede the documents associated with the 2019 ES:

- **Appendix 9.1**: Road Traffic Noise Assessment (replaces Appendix 12.3 from 2019 ES); and

  The following figures supersede those associated with Appendix 12.3 from the 2019 ES:

  - Figure 9.1.1: Predicted Road Traffic Noise Levels – 2018 Baseline (replaces Appendix 12.3.1, Figure 1);
  - Figure 9.1.2: Predicted Road Traffic Noise Levels – 2035 Without Development (replaces Appendix 12.3.2, Figure 2);
  - Figure 9.1.3: Predicted Road Traffic Noise Levels – 2035 With Development (replaces Appendix 12.3.3, Figure 3); and
  - Figure 9.1.4: Predicted Change in Road Traffic Noise Levels – 2035 Without and With Development (replaces Appendix 12.3.4, Figure 4.)
- **Appendix 9.2**: Trace Mineral Explosives Summary (replaces Appendix 12.4 from 2019 ES).

  The following figures are exclusive to this ES Addendum:

  - Figure 9.2.1: Noise Levels Associated with Trace Mineral Explosives at the Downs Range;
  - Figure 9.2.2: Noise Levels Associated with Trace Mineral Explosives at the Building X8/9; and
  - Figure 9.2.3: Noise Levels Associated with Trace Mineral Explosives at the Building X19.

Figures

The details of the following figure remain valid as per the 2019 ES although the redline boundary has been updated accordingly:

- Figure 9.1: Baseline Noise Survey Locations.

9.2 METHODOLOGY

Changes in Methodology

The assessment methodology employed in this ES Addendum largely remains the same as detailed within the 2019 ES, with the exception of the following:

- Development Generated Road Traffic: the assessment of noise impacts associated with development generated road traffic has been carried out via comparison of without and with development scenarios in the future year 2035. Although the proposed development is scheduled to be completed by 2031, impacts have been assessed in the year 2035 in order to provide a robust assessment of potential impacts when the development is fully operational. Further details provided in **Appendix 9.1**, Volume II and discussed in *Chapter 8: Transportation & Access* of this ES Addendum.
- Trace Mineral Explosives: a detailed assessment of trace mineral explosives has been carried out, in order to provide additional information. In comparison to the high-level assessment included in the 2019 ES, this ES Addendum provides a more accurate and prediction of associated noise levels and subsequent impacts. Further details are provided in **Appendix 9.4**, Volume II of this ES Addendum.

Guidance

No changes to national noise and vibration guidance have been published since the 2019 ES. Therefore, the guidance used for the purposes of this assessment remains as follows:

- Planning Practice Guidance (2014, updated in 2020) [4];
- British Standard 5228: 2009 + A1:2014 - Code of Practice for Noise and Vibration Control on Construction and Open Sites [45];
- British Standard 4142: 2014 - Methods for Rating and Assessing Industrial and Commercial Sound [46];
- British Standard 8233: 2014 – Guidance on Sound Insulation and Noise Reduction for Buildings [47];
- BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites [45];
- World Health Organisation Guidelines for Community Noise (1999) [48];
- Calculation of Road Traffic Noise (1988) [49];
- Institute of Environmental Management and Assessment - Guidance Note 1 Guidelines for the Environmental Assessment of Road Traffic (1993) [41];
- Professional Practice Guidance on Planning and Noise – New Residential Development (2017) [50]; and
- Institute of Environmental Management and Assessment Guidelines for Environmental Noise Impact Assessment (2014) [51].

Legislation & Policy

- Control of Pollution Act 1974 [52];
- Environmental Protection Act 1990 [53];
- National Planning Policy Framework (2014, updated in 2020) [7];
- Noise Policy Statement for England (2010) [54];
- Sevenoaks District Council adopted Core Strategy (2011) [37];
- Sevenoaks District Council Allocations and Development Management Plan (2015) [29]; and
- Sevenoaks Local Plan Proposed Submission Version (2018) [8].

Consultees

Correspondence with Mr Colin Alden, Environmental Health Officer, Dartford and Sevenoaks District Council (DSDC) was established in November 2018 with respect to the proposed acoustic survey, methodologies and assessment. Although this was carried out in relation to the 2019 ES, the methodology discussed and agreed is considered to remain relevant to this ES Addendum.

Agreement was made in principle with the SDC that the previous 2015 extant planning permission acoustic report survey methodology and scope is appropriate for the new proposed development. Hydrock confirmed that the background noise monitoring locations chosen for the most recent survey would be similar to the locations accepted in the 2015 planning application acoustic report. This allows for some direct

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comparison of data and provides consistency wherever practicable for assessment purposes.

Further consultation was undertaken with Mr Colin Alden in 2020, with specific reference to additional details requested for the assessment of retained employment and Trace Mineral Explosives at QinetiQ. Subsequently, extensive discussions were undertaken with QinetiQ in order to characterize operations with respect to noise. Information provided by QinetiQ pertaining to Trace Mineral Explosives has been reviewed by DSDC and agreed to be satisfactory for the purposes of this assessment.

Scoping

Scoping opinion comments remain the same as detailed within the 2019 ES Chapter. However additional consultee comments were received from Colin Alden, following the submission, as follows:

"I have reviewed the submission relating to noise and have some queries concerning the information provided and the guidance used in the assessment. Whilst it appears the assessment takes account of the latest National Planning Policy Framework then likewise, they should be using the latest Planning Practice Guidance, the guidance on noise relates to paragraphs 170, 180(a)&(b) and 182 [of the NPPF]. The assessment does not appear to have addressed the requirements of paragraph 182 of NPPF for the retained employment on the site and whilst BS 4142:2014 has been revised it makes no difference for this assessment, the World Health Organisation Environmental Noise Guidelines for the European Region should be considered in relation to road traffic noise.

Furthermore, in light of the retained employment area, this has protected rights in terms of noise under paragraph 182 of the NPPF, however we appear to have no specific information on noise from "energetic testing", this appears to be significant oversight when building an accurate picture of the potential future noise environment of the development site.

Overall apart from the cited omissions this appears an accurate representation of the site."

World Health Organisation (WHO) Environmental Noise Guidelines for the European Region 2018 provide noise source specific guidance for policy makers, with regards to potential health impacts. The document states that: "*The guidelines are source specific and not environment specific*" and are designed to "*influence urban, transport and energy policies, these guidelines contribute to the 2030 Agenda for Sustainable Development and support WHO's vision of creating resilient communities and supportive environments in the European Region*".

Furthermore, with regards to transportation sources, the guidance only makes reference to external noise environments. This guidance is not considered to supersede the WHO Guidelines for Community Noise but rather provide parallel guidance for policy makers in a large-scale strategic planning context.

In the context of the proposed development, the noise criteria included within WHO Guidelines for Community Noise and BS8233 are more prescriptive and are considered more relevant for developments of this type and scale, than the WHO Environmental Noise Guidelines for the European Region.

In order to address the remainder of these comments, this ES Addendum includes a detailed assessment of noise from Trace Mineral Explosives at QinetiQ.

Consideration of Climate Change

Consideration of climate change remains the same as detailed with the 2019 ES.

Consideration of Human Health

Consideration of human health remains the same as detailed with the 2019 ES.

Consideration of Risk of Major Accidents and/or Disasters

Consideration of risk of major accidents and/or disasters remains the same as detailed within the 2019 ES.

Alternatives

Consideration of risk of major accidents and/or disasters remains the same as detailed within the 2019 ES. Alternative scenarios considered are limited to the 'Do Something'.

Assessment of Baseline Conditions & Receptor Sensitivity

The assessment of baseline conditions and receptor sensitivity remains the same as detailed within the 2019 ES.

Assessment of Magnitude

The assessment of the magnitude of impacts remains the same as detailed within the 2019 ES, with the exception of impacts associated with trace mineral explosives. The magnitude of potential impacts from trace mineral explosives are detailed in **Appendix 9.2**, Volume II of this ES Addendum.

Assessment of Significance

The assessment of the significance of impacts remains the same as detailed within the 2019 ES, with the exception of impacts associated with trace mineral explosives. The significance of potential impacts from trace mineral explosives are detailed in **Appendix 9.4**, Volume II of this ES Addendum.

Relevant Associated Development

Associated development considered remains the same as detailed within the 2019 ES.

Assumptions/Limitations

Assumptions and limitations considered remains the same as detailed within the 2019 ES.

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9.1 BASELINE CONDITIONS

Noise Survey

The baseline conditions considered within the 2019 ES are considered to be representative of baseline conditions at present. **Table 9.1** presents the baseline noise survey results.

Table 9.1
Baseline Noise Monitoring Survey Data

MONITORING LOCATIONS	PERIOD	DURATION	$L_{AEQ,T,}$	$L_{A90,T}$	L_{AFMAX}
LT1	Day	16hr	56 dB	52 dB	66 dB
	Night	8hr	48 dB	46 dB	59 dB
LT2	Day	16hr	49 dB	45 dB	63 dB
	Night	8hr	44 dB	41 dB	57 dB
LT3	Day	16hr	52 dB	49 dB	66 dB
	Night	8hr	47 dB	44 dB	57 dB
ST1	Day	30min	42 dB	36 dB	56 dB
ST2	Day	50min	47 dB	39 dB	65 dB
ST3	Day	30min	43 dB	34 dB	63 dB
ST4	Day	40min	50 dB	43 dB	70 dB
ST5	Day	40min	46 dB	37 dB	61 dB
ST6	Day	20min	75 dB	71 dB	81 dB

Table 9.2 presents the key noise sensitive receptors considered within the assessment.

Table 9.2
Noise Sensitive Receptors

KEY RECEPTORS	DESCRIPTION	SENSITIVITY	FURTHER INFORMATION
NSR A Armstrong Close	2 Storey Existing Residential Houses Located to the North of the application site at approximately 20 meters distance.	Very High	Figure 9.1.1
NSR B Star House, Star Hill Road	2 Storey Existing Residential Houses Located to the South of the application site at approximately 220 meters distance.	Very High	Figure 9.1.1
NSR C Rose Cottage Farm, Birchwood Lane	2 Storey Existing Residential Houses Located to the West of the application site at approximately 95 meters distance.	Very High	Figure 9.1.1
NSR D The Cottage, Otford Lane	2 Storey Existing Residential Houses Located to the North of the application site at approximately 310 meters distance.	Very High	Figure 9.1.1
NSR E Proposed Residential Development	Residential, up to three storeys (Up to 13.5m to top of ridgeline) proposed at the application site.	Very High	Figure 9.1.1

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KEY RECEPTORS	DESCRIPTION	SENSITIVITY	FURTHER INFORMATION
NSR F Proposed Mixed-Use Development	Mixed Use: Up to 3 storeys (Up to 16m to top of ridgeline) proposed at the application site.	Very High	Figure 9.1.1
NSR G Proposed Residential Development	Residential, up to three storeys (Up to 13.5m to top of ridgeline) proposed at the application site.	Very High	Figure 9.1.1
NSR H Proposed School	New school proposed east of Crow Drive, approximately 20metres from application's eastern site boundary.	Very High	Figure 9.1.1

Noise Sensitive Receptor (NSR) and noise monitoring locations are shown on Figure 9.1.1

Trace Mineral Explosive Noise

The baseline noise environment includes noise from trace mineral explosions, associated with the operations of DSTL and QinetiQ within the site boundary. DSTL are in the process of relocating their operations and are scheduled to fully vacate the site by 2021. However, QinetiQ are expected to continue operations in to the foreseeable future, therefore an assessment of potential impacts at proposed noise sensitive areas of the development has been carried out, as shown in **Appendix 9.2**, Volume II of this ES Addendum.

9.2 POTENTIAL SIGNIFICANT IMPACTS

The potential significant impacts remain the same as detailed within the 2019 ES and have been re-provided below.

PHASE	DESCRIPTION	ADVERSE/BENEFICIAL
Construction	The potential impacts of construction traffic (including HGV movements), non-mobile machinery and other construction plant on noise levels at existing and proposed sensitive receptors.	Adverse
Operation	Presence of additional road traffic vehicles generated by the development once operation within future year (2031) with full occupation flow scenario affecting internal and external ambient noise levels at existing residential receptors and new residential receptors at the site brought about by the proposals.	Adverse
Construction & Operation	Presence of existing noise sources from current occupants in adjoining land, DSTL and QinetiQ, and maximum impact noise associated with onsite testing of Trace Mineral Explosives. Noise predictions from the operation of these activities has the potential to significantly affect all residential receptors, both existing and introduced, however those located closest to the activities (B, E, F, G) would be considered worst case assessment.	Adverse
Operation	Introduction of potential noise sources into development; atypical commercial land uses/operations (Land Use Class A/B/D employment buildings/areas, hotel uses), building services noise (kitchen extract fans, air conditioning plant etc.). It is expected that typical building services mechanical plant as part of the development proposal would affect the nearest proposed residential elements of the development only, i.e., existing residential noise sensitive receptors off site are of considerable distance from likely commercial/business plant source.	Adverse

9.3 ASSESSMENT PRE-MITIGATION (INCLUDING DESIGN INTERVENTION)

The assessment of construction phase impacts remains the same as considered within the 2019 ES and have therefore been omitted from this ES Addendum.

The potential noise impacts during the operational phase of the development, in particular impacts associated with development generated road traffic and trace mineral explosives at QinetiQ, have been updated since the 2019 ES as shown below and discussed with **Appendix 9.1** and **Appendix 9.2**, Volume II, respectively.

PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	NSR E & F	**Human exposure and negative health effects due to operations at QinetiQ on adjacent land** Maximum predicted noise levels from trace explosive detonations both externally and internally assuming partially open windows, are below 65 dB L_{Afmax} and 50 dB L_{Afmax} respectively. Impacts are predicted to be negligible. Noise impacts are reduced compared to baseline, as a result of withdrawal of DSTL, therefore potential impacts are further reduced.	Negligible	Negligible	No	Figure 9.1.1 and Appendix 9.2, Volume II

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PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	NSR A	**Human exposure and negative health effects due to operations at QinetiQ on adjacent land** Maximum predicted noise levels from trace explosive detonations both externally and internally assuming partially open windows, are below 65 dB L_{Afmax} and 50 dB L_{Afmax} respectively. Impacts are predicted to be negligible. Noise impacts are reduced compared to baseline, as a result of withdrawal of DSTL, therefore potential impacts are further reduced.	Negligible	Negligible	No	Figure 9.1.1 and Appendix 9.2, Volume II
Operation	NSR B	**Human exposure and negative health effects due to operations at QinetiQ on adjacent land** Maximum predicted noise levels from trace explosive detonations both externally and internally assuming partially open windows, are below 65 dB L_{Afmax} and 50 dB L_{Afmax} respectively. Impacts are predicted to be negligible. Noise impacts are reduced compared to baseline, as a result of withdrawal of DSTL, therefore potential impacts are further reduced.	Negligible	Negligible	No	Figure 9.1.1 and Appendix 9.2, Volume II
Operation	NSR C	**Human exposure and negative health effects due to operations at QinetiQ on adjacent land** Maximum predicted noise levels from trace explosive detonations both externally and internally assuming partially open windows, are below 65 dB L_{Afmax} and 50 dB L_{Afmax} respectively. Impacts are predicted to be negligible. Noise impacts are reduced compared to baseline, as a result of withdrawal of DSTL, therefore potential impacts are further reduced.	Negligible	Negligible	No	Figure 9.1.1 and Appendix 9.2, Volume II
Operation	NSR D	**Human exposure and negative health effects due to operations at QinetiQ on adjacent land** Maximum predicted noise levels from trace explosive detonations both externally and internally assuming partially open windows, are below 65 dB L_{Afmax} and 50 dB L_{Afmax} respectively. Impacts are predicted to be negligible. Noise impacts are reduced compared to baseline, as a result of withdrawal of DSTL, therefore potential impacts are further reduced.	Negligible	Negligible	No	Figure 9.1.1 and Appendix 9.2, Volume II
Operation	NSR E	**Human exposure and negative health effects due to operations at QinetiQ on adjacent land** Maximum predicted noise levels from trace explosive detonations both externally and internally assuming partially open windows, are below 65 dB LAfmax and 50 dB LAfmax respectively. Impacts are predicted to be negligible.	Negligible	Negligible	No	Figure 9.1.1 and Appendix 9.2, Volume II
Operation	NSR F	**Human exposure and negative health effects due to operations at QinetiQ on adjacent land** Maximum predicted noise levels from trace explosive detonations both externally and internally assuming partially open windows, are below 65 dB LAfmax and 50 dB LAfmax respectively. Impacts are predicted to be negligible.	Negligible	Negligible	No	Figure 9.1.1 and Appendix 9.2, Volume II
Operation	NSR G	**Human exposure and negative health effects due to operations at QinetiQ on adjacent land** Maximum predicted noise levels from trace explosive detonations both externally and internally assuming partially open windows, are below 65 dB LAfmax and 50 dB LAfmax respectively. Impacts are predicted to be negligible.	Negligible	Negligible	No	Figure 9.1.1 and Appendix 9.2, Volume II
Operation	NSR H	**Human exposure and negative health effects due to operations at QinetiQ on adjacent land** Maximum predicted noise levels from trace explosive detonations both externally and internally assuming partially open windows, are below 65 dB LAfmax and 50 dB LAfmax respectively.	Negligible	Negligible	No	Figure 9.1.1 and Appendix 9.2, Volume II
Operation	NSR A	**Road Traffic Noise** No predicted change in road traffic noise levels (<1dB)	Negligible	Negligible	No	Figures 9.1.1, 9.1.2, 9.1.3, 9.1.4, Appendix 9.1, Volume II
Operation	NSR B	**Road Traffic Noise** No predicted change in road traffic noise levels (<1dB)	Negligible	Negligible	No	Figures 9.1.1, 9.1.2, 9.1.3, 9.1.4, Appendix 9.1, Volume II
Operation	NSR C	**Road Traffic Noise** No predicted change in road traffic noise levels (<1dB)	Negligible	Negligible	No	Figures 9.1.1, 9.1.2, 9.1.3, 9.1.4, Appendix 9.1, Volume II
Operation	NSR D	**Road Traffic Noise** No predicted change in road traffic noise levels (<1dB)	Negligible	Negligible	No	Figures 9.1.1, 9.1.2, 9.1.3, 9.1.4, Appendix 9.1, Volume II
Operation	NSR E	**Road Traffic Noise** No predicted change in road traffic noise levels (<1dB)	Negligible	Negligible	No	Figures 9.1.1, 9.1.2, 9.1.3, 9.1.4, Appendix 9.1, Volume II

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PHASE	RECEPTOR(S) AFFECTED	IMPACT	MAGNITUDE PRE-MITIGATION	SIGNIFICANCE PRE-MITIGATION	MITIGATION PROPOSED?	FURTHER INFORMATION
Operation	NSR F	**Road Traffic Noise** No predicted change in road traffic noise levels (<1dB)	Negligible	Negligible	No	Figures 9.1.1, 9.1.2, 9.1.3, 9.1.4, Appendix 9.1, Volume II
Operation	NSR G	**Road Traffic Noise** No predicted change in road traffic noise levels (<1dB)	Negligible	Negligible	No	Figures 9.1.1, 9.1.2, 9.1.3, 9.1.4, Appendix 9.1, Volume II
Operation	NSRs A - H	**Commercial, Business and Industrial Uses** Noise levels at NSRs A - G due to existing commercial, business and industrial land class uses are predicted to result in a negligible impact in accordance with BS4242:2014.	Negligible	Negligible	No	Figure 9.1.1
Operation	NSRs A - H	**Building Services/Plant Noise** Plant noise emissions from the proposed development at every NSR (A – H) are predicted to be (as a maximum operational noise level) 0dBA above daytime and night time background noise levels at each NSR. This is based on acoustic calculations considering the baseline noise survey data and typical building services noise levels.	Negligible	Negligible	No	Figure 9.1.1

9.4 MITIGATION & ENHANCEMENT MEASURES

The assessment of construction phase impacts and the associated mitigation scheme remains the same as considered within the 2019 ES and have therefore been omitted from this ES Addendum.

Potential noise impacts during the operational phase of the development, in particular impacts associated with development generated road traffic and trace mineral explosives at QinetiQ, have been updated since the 2019 ES. This section provides details on the mitigation and enhancement requirements during the operational phase of the development.

PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER	MAGNITUDE POST-MITIGATION	ADVERSE / BENEFICIAL	FURTHER INFORMATION
Operation	Human Health (noise exposure) effect	Road Traffic management measures on Crow Drive, e.g., information provided by Stantec detail highway proposals for speed attenuation curves and bends, traffic islands and traffic control junctions which will reduce vehicle speeds and have a proportionate decrease in noise levels over the previously consented scheme where these measures were not previously considered. All residential premises within approximately 20m of, and with a direct line of sight on to Crow Drive, will require glazing ratings ranging from 30 dB R_w (standard thermal double glazing) to 35 dB R_w at the noisiest locations. The closest noise sensitive locations will require acoustic trickle ventilators to allow for adequate ventilation, while maintaining appropriate internal levels, in accordance with current guidance. For residential premises and noise sensitive receptors to the north-east of the site and East of Crow Drive, including the school, glazing ratings requirements range from 30 dB R_w (standard thermal double) to 35 dB R_w at the noisiest locations, with facades requiring acoustic trickle ventilators to allow for adequate ventilation where windows cannot be opened without exceeding the internal ambient noise level. For noise sensitive receptors located North West and West of the site where noise levels are relatively lower compared to the South East and East of the Site, and where they are approximately 20 metres or more from Crow Drive, external noise levels are predicted to be at or below 55 dB L_{Aeq} (07:00 – 23:00hrs) thereby showing compliance with external noise level criteria taken from BS 8233:2014 and WHO. It should be noted that glazing ratings are based on elevations and plans submitted as part of the outline application. Glazing ratings are provided as indicative recommendations and are to be used only as guidance to demonstrate the expected performance required to meet the internal noise levels as recommended by BS 8233 and WHO guidelines.	Secured through outline planning application design proposals/plans	NSR A: <5 dBA reduction NSR B: <5 dBA reduction NSR C: <5 dBA reduction NSR D: <5 dBA reduction NSR E: <5 dBA reduction NSR F: <5 dBA reduction NSR G: <5 dBA reduction	Adverse	Chapter 10 2019

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PHASE	POSSIBLE EFFECT BEING MITIGATED	MITIGATION MEASURE	HOW SECURED / TRIGGER	MAGNITUDE POST-MITIGATION	ADVERSE / BENEFICIAL	FURTHER INFORMATION
Operation	Human Health (noise exposure) effect	Attenuation and control of noise through building design and acoustic engineering (e.g., typical commercial attenuators for commercial ducting and extracts), building services design requires that the rating level does not exceed the typical minimum $L_{A90,15min}$ background sound level at any time. At NSR A, the adopted plant noise rating level upper limits are 34 dB $L_{Ar,Tr}$ (daytime 07.00-23:00) and 29 dB $L_{Ar,Tr}$ (night-time 23.00-07.00). At NSR B, the adopted plant noise rating level upper limits are 37 dB $L_{Ar,Tr}$ (daytime 07.00-23.00) and 32 dB $L_{Ar,Tr}$ (night-time 23.00-07.00). At NSR C, the adopted plant noise rating level upper limits are 40 dB $L_{Ar,Tr}$ (daytime 07.00-23.00) and 36 dB $L_{Ar,Tr}$ (night-time 23.00-07.00). At NSR D, the adopted plant noise rating level upper limits are 34dB $L_{Ar,Tr}$ (daytime 07.00-23.00) and 29 dB $L_{Ar,Tr}$ (night-time 23.00-07.00). At NSR E, the adopted plant noise rating level upper limits are 39 dB $L_{Ar,Tr}$ (daytime 07.00-23.00) and 34 dB $L_{Ar,Tr}$ (night-time 23.00-07.00). At NSR F, the adopted plant noise rating level upper limits are 36 dB $L_{Ar,Tr}$ (daytime 07.00-23.00) and 31 dB $L_{Ar,Tr}$ (night-time 23.00-07.00). At NSR G, the adopted plant noise rating level upper limits are 36 dB $L_{Ar,Tr}$ (daytime 07.00-23.00) and 31 dB $L_{Ar,Tr}$ (night-time 23.00-07.00). It should be noted that the background levels and rating level limits are considered to be low and BS 4142:2014 provides guidance with regard to assessment of plant at low noise levels and the noise being considered in context (relative to the existing/residual noise climate). The criteria are designed to ensure there is negligible impact on noise sensitive receptors.	Planning condition for the control and operation of mechanical plant and building services noise to operate at or below the background noise levels as given in Table 12.9 (Chapter 12 of the 2019 ES, contained within Appendix 1.1, Volume II)	NSR A: 0 - 5 dBA reduction NSR B: 0 - 5 dBA reduction NSR C: 0 - 5 dBA reduction NSR D: 0 - 5 dBA reduction NSR E: 0 - 5 dBA reduction NSR F: 0 - 5 dBA reduction NSR G: 0 - 5 dBA reduction	Adverse	N/A

9.5 ASSESSMENT POST-MITIGATION

The assessment of construction phase impacts remains the same as considered within the 2019 ES and have therefore been omitted from this ES Addendum.

Potential noise impacts during the operational phase of the development, in particular impacts associated with development generated road traffic and trace mineral explosives at QinetiQ, have been updated since the 2019 ES and have been provided below. However, the residual effects have remained the same as the 2019 ES.

PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT					
			SIGNIFICANCE	ADV/BEN	ST/MT/LT	D/IND	P/T	R/IRR
Operation	NSR E & F	**Human exposure and negative health effects due to operations at QinetiQ** Below 65 dB L_{Afmax} externally and 50 dB L_{Afmax} internally.	Negligible Significance	ADV	ST	D	T	IRR
Operation	NSR A	**Human exposure and negative health effects due to operations at QinetiQ** Below 65 dB L_{Afmax} externally and 50 dB L_{Afmax} internally.	Negligible Significance	ADV	ST	D	T	IRR
Operation	NSR B	**Human exposure and negative health effects due to operations at QinetiQ** Below 65 dB L_{Afmax} externally and 50 dB L_{Afmax} internally.	Negligible Significance	ADV	ST	D	T	IRR
Operation	NSR C	**Human exposure and negative health effects due to operations at QinetiQ** Below 65 dB L_{Afmax} externally and 50 dB L_{Afmax} internally.	Negligible Significance	ADV	ST	D	T	IRR
Operation	NSR D	**Human exposure and negative health effects due to operations at QinetiQ** Below 65 dB L_{Afmax} externally and 50 dB L_{Afmax} internally.	Negligible Significance	ADV	ST	D	T	IRR
Operation	NSR G	**Human exposure and negative health effects due to operations at QinetiQ** Below 65 dB L_{Afmax} externally and 50 dB L_{Afmax} internally.	Negligible Significance	ADV	ST	D	T	IRR
Operation	NSR H	**Human exposure and negative health effects due to operations at QinetiQ** Below 65 dB L_{Afmax} externally and 50 dB L_{Afmax} internally.	Negligible Significance	ADV	ST	D	T	IRR
Operation	NSR A	**Road Traffic Noise** External road traffic noise predicted to be 46.6dBA daytime, 41.1dBA night time.	Negligible Significance	ADV	ST	D	T	IRR

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PHASE	RECEPTOR	RESIDUAL IMPACT	RESIDUAL EFFECT					
			SIGNIFICANCE	ADV/BEN	ST/MT/LT	D/IND	P/T	R/IRR
Operation	NSR B	**Road Traffic Noise** External road traffic noise predicted to be 51.4dBA daytime, 45.8dBA night time.	Negligible Significance	ADV	ST	D	T	IRR
Operation	NSR C	**Road Traffic Noise** External road traffic noise predicted to be 41.8dBA daytime, 35.9dBA night time.	Negligible Significance	ADV	ST	D	T	IRR
Operation	NSR D	**Road Traffic Noise** External road traffic noise predicted to be 42.9dBA daytime, 37.2dBA night time.	Negligible Significance	ADV	ST	D	T	IRR
Operation	NSR E	**Road Traffic Noise** External road traffic noise predicted to be 59.4dBA daytime, 54dBA night time.	Negligible Significance	ADV	ST	D	T	IRR
Operation	NSR F	**Road Traffic Noise** External road traffic noise predicted to be 46.4dBA daytime, 40.9dBA night time.	Negligible Significance	ADV	ST	D	T	IRR
Operation	NSR G	**Road Traffic Noise** External road traffic noise predicted to be 41.3dBA daytime, 35.8BA night time.	Negligible Significance	ADV	ST	D	T	IRR
Operation	NSR H	**Road Traffic Noise** External road traffic noise predicted to be 59.3dBA daytime.	Negligible Significance	ADV	ST	D	T	IRR
Operation	NSR A - H	**Commercial, Business and Industrial Uses** Increase in ambient noise levels at NSRs A - G due to commercial, business and industrial land class uses are predicted to be within BS 8233:2014 noise levels at external and internal areas, being less than 50dBA L_{eq} at external locations daytime, and less than 45dBA L_{eq} night time.	Negligible Significance	ADV	ST	D	T	IRR
Operation	NSRs A - H	**Building Services/Plant Noise** Plant noise emissions from the proposed development at every NSR (A – H) are predicted to be (as a maximum operational noise level) 5dBA below daytime and night time background noise levels at each NSR.	Negligible Significance	ADV	ST	D	T	IRR
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								

Noise impacts at existing and proposed sensitive receptors will be negligible during the operational phase of the development, providing appropriate mitigation measures are implemented. This demonstrates the development meets the objectives of Policy EN2 – Amenity Protection and Policy EN7 – Noise Pollution of Sevenoaks Allocations and Development Management Plan, together with overarching policy and current acoustic assessment guidance.

The assessment of trace mineral explosives indicates that operations can continue at QinetiQ, with no potential restrictions as a result of the proposed development. This demonstrates that the proposed development satisfies Paragraph 182 of the NPPF.

9.3 NOISE & VIBRATION: INTER-CUMULATIVE SCHEME IMPACTS

The inter-cumulative scheme impacts are unchanged from the 2019 ES and no inter-cumulative impacts have been identified.

10 CUMULATIVE EFFECTS, RESIDUAL EFFECTS & SUMMARY

10.1 INTRA-DEVELOPMENT CUMULATIVE EFFECTS

The intra-development cumulative effects assessment, reported in *Chapter 15 Intra-Development Cumulative Effects* of the 2019 ES, has been reviewed in the context of the changes to proposed development reported in this ES Addendum. Given that the changes in effects relate to a one receptor only and the effects only change by one category on the significance scale, the intra-development cumulative effects reported in the 2019 ES are not expected to be affected by the changes.

10.2 MITIGATION MEASURES

The mitigation measures previously identified in the 2019 ES remain unchanged, with the exception of a few minor updates to the ecology and noise and vibration mitigation measures. A summary of these measures is provided in the relevant section of each chapter of this ES Addendum.

10.3 RESIDUAL EFFECTS

With the exception of one landscape and visual effect, which is listed below, all the residual effects of the scheme, as reported in the 2019 ES, are considered to remain valid in the context of the proposed scheme amendments:

- Landscape & Visual
  - Visual Receptor – Crow Drive, Armstrong Close and Fort Road (Construction Phase) – Moderate Adverse in the 2019 ES to **Moderate-Minor Adverse** in this ES Addendum.

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