EIA SCOPING REPORT

Request for a scoping opinion for

FORT HALSTEAD

November 2018

CBRE

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APPENDICES

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CBRE

1.0 INTRODUCTION

OVERVIEW

1.1 Fort Halstead is 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 Sevenoaks District Council (SDC).

1.2 The land at Fort Halstead (the 'application site') is subject to an extant outline planning permission granted on 10th March 2015 (Ref. SE/15/00628/OUT), for mixed use development of up to 450 residential units, 27,000 square metres (sq m) business area, a hotel of up to 80 beds, a village centre (Use Classes A1-A3, B1a, D1 and D2), and use of the Fort Area and bunkers as an historic interpretation centre (Use Class D1).

1.3 The extant outline planning permission was the subject of an Environmental Statement (ES) produced by Waterman Group, (hereafter, the '2015 ES').

1.4 Merseyside Pension Fund (the 'Applicant') purchased the site in early 2017 and is subsequently seeking to bring forward a new hybrid application for up to 750 residential units, and up to 27,650 sq m business area (B1a/B1b/B1c Use Classes) (the 'proposed development').

1.5 The application site is shown at Appendix A and is centred on National Grid Reference (NGR) 549741, 159317. The site largely reflects the existing built form and highways at Fort Halstead, covering an area of circa 62.7 hectares (ha). The Applicant's land ownership boundary extends beyond the application site to include adjacent land. At present this includes grassland to the south and west. The adjacent land within the Applicant's ownership, covers an area of circa 68.2 ha and is hereafter referred to as the 'wider Survey Area'.

1.6 The application site is currently occupied in large part by the Defence Science and Technology Laboratory (DSTL) and in part by QinetiQ, a specialist defence company, which provide scientific and technical research services to the Ministry of Defence. Due to the current consolidation and relocation of DSTL, the majority of the application site will be vacant thereafter and available for redevelopmentalthough QinetiQ intend to remain on the application site subject to the improvement of its premises as part of the redevelopment.

1.7 The application site is located within the Kent Downs Area of Outstanding Natural Beauty (AONB) and the Green Belt. The Kent Downs AONB is noted for its distinctive chalk downland, steep scarps and woodlands. Ancient Woodland, as defined by Natural England and Kent Biological Records Centre data, is present in the north-west and western part of the application site. In addition, the trees on the application site are subject to Tree Preservation Orders.

1.8 There are circa 38 buildings that are considered heritage assets of varying sensitivity across the application site, these include one Scheduled Monument (the Fort) that includes eight separate structures and four listed buildings (two of which are listed Grade II and the other two at Grade II*). There are no other built heritage designations, national or local (e.g. registered parks, conservation areas, locally listed buildings, etc.) on the application site.

1.9 The land immediately beyond the application site within the wider Survey Area is characterised by mature trees, rough grassland and several wooded areas that screen the application site from external view. The woodland includes plantations and designated Ancient Woodland.

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ENVIRONMENTAL IMPACT ASSESSMENT

The Purpose of Environmental Impact Assessment

1.10 Environmental Impact Assessment (EIA) is a process for ensuring that the likely significant effects of a new development on its surrounding environment are fully identified and taken into account before that development is allowed to proceed.

1.11 The Department of Communities & Local Government's (DCLG) Planning Practice Guidance [1] states that the purpose of EIA 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 Development in the Context of the EIA Regulations 2017

1.12 The procedures for carrying out EIA for a proposed development within the terrestrial environment are set out within the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 [2] - herein 'the EIA Regulations 2017'.

1.13 The proposed development is not Schedule 1 development, for which EIA would be mandatory; however, it is of a type listed within the descriptions of development contained within Schedule 2, falling under category 10(b) *urban development projects* (including the construction of shopping centres and car parks, sports stadiums, leisure centres and multiplex cinemas).

1.14 A development is considered to be Schedule 2 development if any part of it lies within a 'sensitive area' or if it meets or exceeds the relevant thresholds and criteria for that category of development, as detailed in the EIA Regulations 2017. For category 10(b) projects, these are as follows:

i. The development includes more than 1 hectare of urban development which is not dwelling-house development; or

ii. The development includes more than 150 dwellings; or

iii. The overall area of the development exceeds 5 hectares.

1.15 The proposed development does lie within a sensitive area, the Kent Downs AONB, as defined in the EIA Regulations 2017. In addition, the development would exceed all the category 10(b) thresholds as it comprises: more than 1 hectare of 'non-dwelling-house' urban development; more than 150 dwellings; and, an overall site area greater than 5 hectares. As such, the proposals are considered Schedule 2 development and would fall within the scope of the EIA Regulations.

1.16 Schedule 2 developments are only 'EIA development' where they have the potential to give rise to likely significant effects on the environment by factors such as their nature, size and location.

1.17 For the proposed development, a formal screening opinion has not been requested from SDC as to whether the proposals constitute 'EIA development' and require an EIA to be undertaken. The Applicant acknowledges the nature and scale of the proposals and characteristics of the surrounding environment. Therefore, in the interests of undertaking a robust assessment of their likely environmental effects, the Applicant has committed to

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undertaking an EIA and submitting an Environmental Statement (ES) to SDC alongside the proposed hybrid planning application.

Scoping

1.18 Scoping is an important, though optional, exercise undertaken throughout the early stages of the EIA process. Its purpose is to focus the EIA and resultant ES on likely significant environmental effects and avoid the over-examination of minor issues.

1.19 This report is a request for a scoping opinion submitted under Regulation 15(1) of the EIA Regulations 2017.

1.20 In accordance with Regulation 15(2), this request is accompanied by:

iv. A plan sufficient to identify the land;

v. A brief description of the nature and purpose of the development, including its location and technical capacity;

vi. An explanation of the likely significant effects of the development on the environment; and

vii. Such other information or representations as the person making the request may wish to provide or make.

1.21 The opportunity to include additional information beyond the minimum requirements of the EIA Regulations 2017 has been taken in order to provide the local planning authorities, statutory consultees and other stakeholders with a better understanding of the proposed approach to the EIA process, the various technical assessments being undertaken and the intended structure of the ES, which is essentially the product of the EIA proces+-s.

1.22 Scoping is an ongoing process with consultation undertaken by the local authority with the relevant statutory bodies (i.e. Natural England, Historic England, Environment Agency, Highways Authority etc.) regarding the content of this scoping report. A subsequent scoping opinion should then be issued by the local authority at the end of a five-week statutory period. During this time, the Applicant and technical team will continue to undertake consultation with all relevant statutory (and non-statutory) consultees, to ensure that the scoping opinion is based on the most recent discussions.

Requirements of an Environmental Statement

1.23 Under the EIA Regulations 2017, an ES 'has the meaning given by Regulation 18'.

1.24 Regulation 18(3) sets out that an ES is a statement which includes 'at least': a description of the development proposals, likely significant effects of the development proposals on the environment, description of measures envisaged to avoid, prevent or reduce likely significant adverse effects and a description of reasonable alternatives studied by the Applicant. These criteria appear in full within Schedule 4, which is replicated in Table 1.

Table 1

Specified information within Schedule 4

	REGULATION 18(3) – SPECIFIED INFORMATION
1.	Description of the development, including in particular:
a.	a description of the location of the development;

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	REGULATION 18(3) – SPECIFIED INFORMATION
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;
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;
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.
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.
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.
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.
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;
b.	the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;
c.	the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;
d.	the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);
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;
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;
g.	the technologies and the substances used.
	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 and EU level.
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.

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	REGULATION 18(3) – SPECIFIED INFORMATION
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.
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.
9.	A non-technical summary of the information provided under paragraphs 1 to 8.
10.	A reference list detailing the sources used for the descriptions and assessments included in the environmental statement.

Source: EIA Regulations 2017

STRUCTURE OF THIS REPORT

1.25 The remainder of this report is structured as follows:

- Section 2: Overview of the proposed development;
- Section 3: The proposed approach to the EIA Methodology;
- Section 4: An overview of the proposed EIA Technical Chapters;
- Section 5: Those topics proposed to be 'scoped in' for inclusion as main technical chapters within the ES;
- Section 6: Those topics proposed to be 'scoped down' within the ES;
- Section 7: Those topics proposed to be 'scoped out' of the ES; and
- Section 8: Summary and conclusions.

2.0 OVERVIEW OF THE PROPOSED DEVELOPMENT

SITE DESCRIPTION

2.1 The application site, which extends to circa 62.7 hectares (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 Sevenoaks District Council (SDC). The location of the application site is shown at Appendix A.

2.2 The map provided at Appendix B sets out the environmental and statutory designations on the application site, including the Scheduled Monument, Listed Buildings, Kent Downs Area of Outstanding Natural Beauty (AONB) and the planning policy designation of Green Belt.

Site Context and Surrounding Area

2.3 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 circa 69.58ha of mainly woodland and grassland, as shown Appendix A. The land within the Applicant's ownership that lies beyond the application site is referred to as the 'wider Survey Area'.

2.4 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 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.

2.5 The application site is located within the Kent Downs Area of Outstanding Natural Beauty (AONB) and the Green Belt. The Kent Downs AONB is noted for its distinctive chalk downland, steep scarps and woodlands. Ancient Woodland, as defined by Natural England and Kent Biological Records Centre data, is present in the north-west and western part of the application site. In addition, the trees on the application site are subject to Tree Preservation Orders.

2.6 The existing 76 residential properties off Crow Drive (and Armstrong Close) fall outside the wider Survey Area. They will not form part of the planning application boundary.

2.7 The land immediately beyond the application site within the wider Survey Area is characterised by mature trees, rough grassland and several wooded areas that screen the application site from external view. The woodland includes plantations and area of designated Ancient Woodland.

2.8 Topographically, the application site and the wider Survey Area is dominated by a chalk escarpment that extends in a south-west/north-east direction. The application site is located on the top of the chalk escarpment ridge and is elevated above the surrounding area. Much of the site is relatively flat, with ground elevations ranging from approximately 160m Above Ordnance Datum (AOD) in the north-eastern part of the site to 220m towards the western part of the site. However, the southern part of the site slopes steeply from 210m to 180m.

OVERVIEW OF THE PROPOSED DEVELOPMENT

Current Land Use

2.9 The application site is currently occupied in large part by the Defence Science and Technology Laboratory (DSTL) and in part by QinetiQ, a specialist defence company, which provide scientific and technical research services to the Ministry of Defence. Due to the current consolidation and relocation of DSTL, the majority of the application site will be vacant thereafter and available for redevelopment. Although QinetiQ intend to remain on the application site subject to the improvement of its premises as part of the redevelopment.

2.10 Approximately 285 buildings are present on the site, with the main part (excluding the Fort Scheduled Monument) identified in SDC's adopted Core Strategy [3] as a Major Developed Site (MDS) for employment (as per Policy EMP2 and Policy EMP3 within the Allocations and Development Management Plan [4]). Appendix C shows the existing buildings on the application site and assigns a key reference number to each of those buildings. This Report uses these reference numbers when referring to relevant buildings. The MDS coincides broadly with the extent of the built environment and employment-related development on the application site, which covers an area of approximately 40.1ha.

2.11 There are circa 38 buildings that are considered heritage assets of varying sensitivity across the application site, these include one Scheduled Monument (the Fort) that includes eight separate structures and four listed buildings (two of which are listed Grade II and the other two at Grade II*). There are no other built heritage designations, national or local (e.g. registered parks, conservation areas, locally listed buildings, etc.) on the application site. The extant permission included approval for the demolition of Buildings Q3, Q4 and Q4.1, which were undesignated heritage assets.

THE PROPOSED DEVELOPMENT

Description of Development

2.12 A brief description of the nature and purpose of the development, is provided below.

2.13 The Applicant is seeking hybrid planning permission for the demolition of buildings and development of a mixed-use development comprising a business area (Use Classes B1 and ancillary B8) of up to 3.7ha, an area for the retention of QinetiQ (Use Classes B1 and ancillary B8), up to 750 residential units, a village centre (Use Classes A1-A3, B1a, C3, D1 and D2), use of the Fort area and bunkers as an historic interpretation centre (Use Class D1) with ancillary workshop space, and works associated with the development including roads, landscaping, security fencing, formal and informal open space, pedestrian, cyclist and public transport infrastructure, utilities infrastructure, sustainable urban drainage system, cycle and car parking (with some matters reserved); and detailed approval for a village centre and two access points at Otford Lane/Crow Drive (primary) and Star Hill (secondary).

2.14 Across the proposed development, minimum heights are anticipated to be circa two storeys (10m) with maximum heights up to four storeys (19.5m).

2.15 Residential units will typically vary from 2 to 3 storeys with a maximum height of 14.5m, mixed use provision will vary from 3 to 4 storeys (maximum height of 19m) and employment uses will vary from 2.5 storeys to 4 storeys (maximum height of 19m).

OVERVIEW OF THE PROPOSED DEVELOPMENT

Form of Application

2.16 The Applicant intends to submit a hybrid application with all matters submitted in outline and full details provided in relation to:

- The village centre parcel; and
- Access.

Scheme Parameters

2.17 The description of the proposals contained within the ES must be sufficient to enable the requirements of the EIA Regulations 2017 to be fulfilled, specifically to enable the likely significant effects of the proposed development to be identified. As a hybrid application with a first phase submitted in detail, the precise nature of the outline element of the site will be subject to approval at the reserved matters stage.

2.18 As part of the outline elements of the application, and as explained further below, it is the intention that certain development parameters and key development principles will be approved at the outline stage to guide and inform subsequent future reserved matters applications. Consequently, the Applicant will submit a number of parameter plans as part of its planning application for the proposed development which will have formed the basis of the assessments contained within the ES. It is envisaged that these plans will include the following:

- Application site (red line boundary) including any requirements for temporary construction lay down areas etc.;
- Demolition (extent of demolition and/or retention of/remedial works to existing buildings/structures on site);
- Land use (to include green infrastructure);
- Density (likely number of dwellings per hectare);
- Maximum building heights (set to meters above ordnance datum (mAOD));
- Minimum finished floor levels (FFLs); and
- Access and movement (for all modes of transport).

2.19 Design principles to guide subsequent reserved matters applications will be set out in the Design and Access Statement (DAS). The EIA will be a 'multi-stage process', whereby the environmental effects and mitigation can, if necessary and subject to establishing the development parameters, be further defined and tested at the reserved matters stage, which will ensure that the assessment of environmental effects responds to the additional detail as that comes forward.

Associated Development

2.20 Associated development is that which does not form part of a planning application but which is required in order for a development to progress. This might include the upgrading of road junctions and/or the delivery of off-site service/utilities infrastructure.

2.21 Contact will be made with all relevant utilities providers with regards to diversions, new supplies, new layouts and infrastructure capacity checks to determine whether there will be a need for off-site works to facilitate the development.

OVERVIEW OF THE PROPOSED DEVELOPMENT

2.22 Information will become available as the designs and the negotiations with the utilities companies progress and may include running new infrastructure in the public highway, either to divert around the site or to reach utility substations/larger infrastructure in the surrounding area.

2.23 Any known off-site works needed to deliver the proposed development, that are clearly identified prior to the planning applications being made, and, that are immediately adjacent to the application site, will be assessed within the relevant sections of the ES.

2.24 Where off-site works are unknown prior to the submission and determination of the application, the environmental effects of such works could be considered and assessed at reserved matters stage as part of the "multi-stage" approach referred to above.

3.0 EIA METHODOLOGY

THE FOCUS OF EIA

3.1 EIA is a process that should be focused on the likely significant environmental effects of a proposed development. It is not intended to be a process to address all the possible environmental effects.

3.2 Environmental statements should not be scoped so widely as to become unnecessarily long and as such, less relevant and less useful for their intended purpose, i.e. to act as a decision-making tool. This is addressed by both the professional environmental body, Institute of Environmental Management and Assessment (IEMA), and the Government's Planning Practice Guidance (PPG).

"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 [5]"

"Whilst every Environmental Statement should provide a full factual description of the development, the emphasis should be on the "main" or "significant" environmental effects to which a development is likely to give rise. The Environmental Statement should be proportionate and not be any longer than is necessary to assess properly those effects. Where, for example, only one environmental factor is likely to be significantly affected, the assessment should focus on that issue only. Impacts which have little or no significance for the particular development in question will need only very brief treatment to indicate that their possible relevance has been considered [1]."

3.3 This section outlines the proposed scope of the EIA for the proposed development of Fort Halstead.

RELEVANT PLANNING POLICY AND GUIDANCE

3.4 The following planning policy and guidance is relevant to the proposed development:

- National Planning Policy Framework (NPPF) (July 2018) [6];
- Planning Practice Guidance (2018) [1];
- South East Local Enterprise Partnership (LEP) Growth Deal and Strategic Economic Plan, (March 2014) [7] [8] and evidence base for new strategic plan (2017) [9];
- Kent and Medway Growth and Infrastructure Framework (2018 update) [10];
- SDC Core Strategy Development Plan Document (DPD) (February 2011) [3];
- SDC Allocations and Development Management Plan (February 2015) [4];
- SDC Development in the Green Belt Supplementary Planning Document (SPD) (February 2015) [11];
- Kent Downs Area of Outstanding Natural Beauty (AONB) Management Plan 2014-2019 [12];
- Evidence base documents which support the emerging SDC New Local Plan 2015 – 2035;
- Other relevant supplementary planning documents and guidance; and

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- IEMA Guidelines for Environmental Impact Assessment [13] [14].

RECEPTORS

3.5 The following key receptors have been identified within the vicinity of the site. It is proposed that the assessments will focus on identifying the effects of the scheme at/on these receptors within the relevant chapters of the ES:

- Kent Downs Area of Outstanding Natural Beauty (AONB);
- Statutory Designated Heritage Assets:
  - The Fort Scheduled Monument (List Entry Number 1004214);
  - The Fort's three listed buildings - two Grade II* (Building F16 (the Bomb Chamber) and Building F17 (the Detonation Chamber), List Entry Number 1412293) and one Grade II Building F11 (the Experimental Filling Shed, List Entry Number 1412292);
  - Building Q14 (Grade II listed Penney Building) the only listed building outside the confines of the Fort;
  - There are no further statutory designated heritage assets or conservation areas within 1km of the application site;
- Ecological receptors within or in close proximity to the site, including Ancient Woodland, grasslands, bats, dormice, reptiles, wintering and breeding birds;
- Potential archaeological remains;
- Residential properties surrounding the site (including but not limited to Armstrong Close 20m north of the site; Star House, Star Hill Road 250m south of the site; Rose Cottage Farm, Birchwood Lane 95m west of the site; and The Cottage, Otford Lane 215m north of the site);
- Local social and community services, including primary schools, secondary schools, GP services and hospitals;
- The landscape character of the site and its surrounding environs; and
- Tree Protection Order trees across the site;
- Sensitive receptors that would be brought to the site under the proposals, including site workers during the construction phase and those using/occupying the proposed residential properties, commercial and retail units, and community facilities, once operational.

APPROACH TO TECHNICAL ASSESSMENT OF PARAMETERS

Assessing a Hybrid Application – Maximum Parameters Approach

3.6 Planning permission for the proposed development is being sought via a hybrid application. The majority of the scheme will be submitted in outline with for example, the specific layout of plots, appearance and landscaping subject to approval at the reserved matters stage. Details of the first phase of the development, likely to include the village centre and the access design, will be provided in full.

3.7 In accordance with the 'Rochdale Envelope' approach the assessment will be undertaken based on a number of fixed and outline maximum parameters.

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3.8 The 'Rochdale Envelope' arises from the following cases: R. v Rochdale MBC ex parte Milne (No. 1) and R. v Rochdale MBC ex parte Tew [1999] and R. v Rochdale MBC ex parte Milne (No. 2) [2000]. The judgments in these cases describe the principle that one may set clearly defined parameters for development, which, when taken with development proposals set at an appropriate level of detail, may allow for environmental assessment to take place of those proposals. This allows the detail of the development to come forward within those parameters at a point after the assessment has taken place.

3.9 In accordance with the 'Rochdale Envelope' approach, to assess the visual effects of the outline elements of the proposed development, wirelines will be used, which will be set to the maximum parameters (i.e. maximum height and scale of the buildings). To enable the detailed component of the proposed developmenbt to be assessed, a toned area or 'chalk model' superimposed on the photographs will be used.

3.10 Maximum parameters for the community, retail and commercial floorspace, residential unit numbers and car parking will be used for the relevant assessments to ensure a robust approach to the EIA. Other topics will also utilise minimum parameters for the proposed land uses as these will provide a more robust approach to certain elements, such as the socio-economic assessment of potential beneficial impacts of the scheme on the local economy, whereby the minimum parameters will provide a conservative assessment.

3.11 The size and tenure of residential units has a bearing on the resident population and, in turn, the level of demand for local services. To carry out a robust assessment, an optimal preferred mix of residential units based on current demand in the local area will be identified and assessed alongside a 'worst case' mix to allow for potential changes in demand in the future. This will include a mix with a higher percentage of larger residential family units, which would result in increased demand for local healthcare and education services.

3.12 Minimum parameters for finished floor levels are used to provide a robust assessment of the potential flood risk (surface water) to land uses that are not considered to be water compatible, including residential units and community floorspace.

GEOGRAPHICAL SCOPE OF ASSESSMENT

3.13 For the purposes of this Scoping Report, the plan provided within **Appendix A** is considered sufficient to identify the site. The plan provides both an ownership boundary (blue boundary line) of the Applicant's land, also described as the Wider Survey Area and an intended application boundary (red line).

3.14 The EIA approach including the technical assessment methodologies will consider the potential for significant impacts as a result of development within both the Wider Survey Area and the application site boundary, as appropriate.

3.15 For individual technical topics, the relevant geographical scope of assessment will vary, and as such, this is stated for each topic within the technical sections contained in Chapters 5 - 7 of this report.

TEMPORAL SCOPE OF ASSESSMENT

3.16 The temporal scope of the assessment is shown in **Figure 1** below, which also sets out the proposed assessment scenarios.

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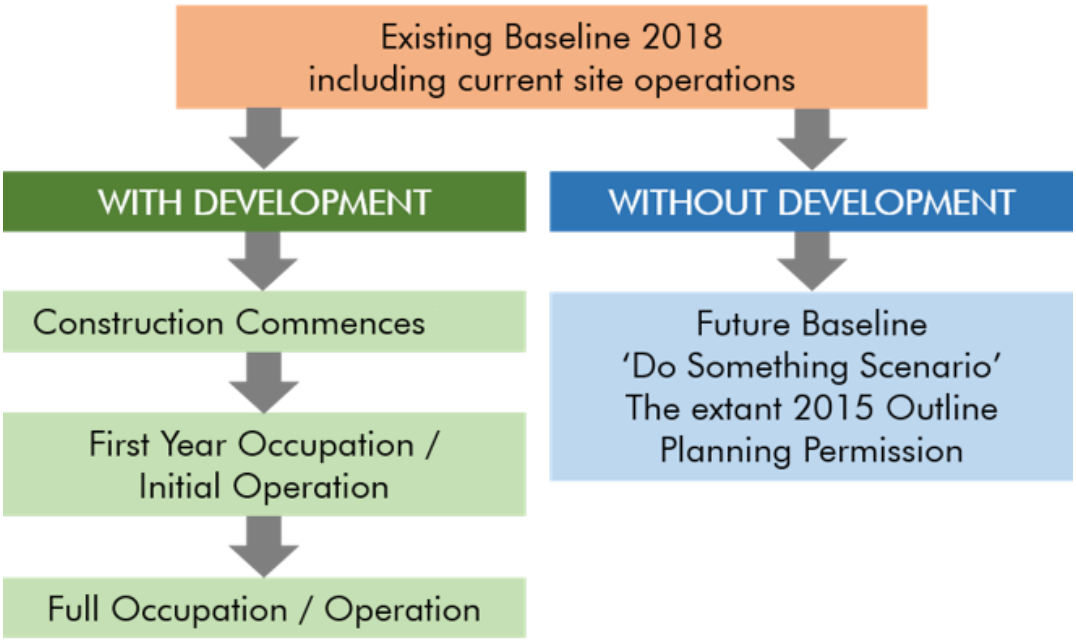
Figure 1
Proposed Assessment Scenarios



3.17 The proposed assessment scenarios comprise:

- The existing baseline, which has been informed by surveys undertaken in 2018 and against which the proposed development effects will be considered;
- The assessment of the construction phase activities, which will also include the consideration of necessary demolition and site enabling work activities;
- The initial year of operation of the commercial elements of the site and initial occupation of the first phase of residential units;
- The final completion of the scheme, which is forecast for full occupation/operation.

3.18 These four development milestones represent the main assessment scenarios that will be considered within the EIA and reported in the ES.

3.19 A 'Do something' scenario will also be assessed that will consider what would occur at the site in the absence of the proposed development being brought forward. The 'Do something' scenario is considered to comprise the extant 2015 outline planning permission.

3.20 For relevant technical areas, any potential significant effects identified under the 'Do something' scenario will be considered against potential effects of the proposed development so that the net effects may be considered.

3.21 The above scenarios, have been considered as appropriate in the assessment methodologies proposed by relevant technical topic sections within this report (e.g. transport, air quality, noise and socio-economics).

3.22 The ES will include provision of an indicative phasing plan; however, the phasing of the proposed development may be subject to variance beyond those key assessment scenarios identified and as such, the assessment approach has sought to consider this in how the assessments are approached.

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CUMULATIVE EFFECTS

3.23 Cumulative effects can be either:

- The combined or inter-cumulative effect of the proposed development together with other existing and/or approved developments (taking into consideration effects at both the construction and post-construction/operational phases); and
- The combined, synergistic or intra-cumulative 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.

Consideration of Inter-Cumulative Effects

3.24 Under the EIA Regulations 2017, the requirement for considering cumulative schemes has been restricted to '*cumulation with other existing development and/or approved development*'.

3.25 In their response to the technical consultation on EIA thresholds, MHCLG stated that urban development projects below the revised EIA screening thresholds *"will not be likely to have significant effects either alone or in combination with other projects because of their nature, location or impact"*. On this basis, the consideration of cumulative effects has been limited to those projects where:

- the development includes more than 1 hectare (site area) of urban development which is not dwellinghouse development; or
- the development includes more than 150 dwellings; or
- the overall area of the development exceeds 5 hectares.

3.26 In addition, the spatial scope of the potential cumulative schemes has been considered and any consented developments located within 2km of the site that meet the aforementioned criteria would be reviewed.

3.27 It is considered that schemes identified using the above criteria will sufficiently address the potential for inter-cumulative effects on air quality, noise, transport, socio-economics, landscape/visual/cultural heritage (built heritage), and biodiversity.

3.28 At this time, no developments that meet the EIA Regulations 2017 criteria of being existing and/or approved have been identified.

Regulation 19 Proposed Submission version of the Local Plan

3.29 SDC has recently produced the Regulation 19 Proposed Submission version of the Local Plan, for which approval for public consultation is currently being sought with the SDC Planning Advisory Committee on the the 22 November.

3.30 The Proposed Submission version of the Local Plan includes a number of proposed site allocations to meet housing need and SDC has requested that these also be considered from a cumulative perspective to provide a comprehensive assessment.

3.31 A review of sites that are broadly within a 2km radius of the application site has not identified any proposed site allocations that would indicatively deliver a quantum of development beyond the threshold criteria identified above in paragragh 3.25.

3.32 Consequently, at the time of writing no cumulative schemes have been identified for consideration.

3.33 Should SDC subsequently become aware of any further schemes that have the potential to meet both the criteria and level of certainty that the Regulations seek prior to the submission of the proposed development's application, these will be considered as appropriate.

3.34 For the remaining technical areas of cultural heritage (archaeology) and ground conditions, these are considered site-specific and therefore will be sufficiently addressed by the approach proposed.

3.35 Apart from considering specific schemes, general development will be accounted for in the area in two ways:

- through the application of TEMPRO growth factors when considering future baseline traffic flows. The TEMPRO database calculates growth based on housing and employment projections for the local area. Consequently, it will inherently include any schemes already accounted for within housing and employment projections and so will undertake a conservative assessment; and
- for socio-economic considerations, through the use of publicly available evidence from surrounding local authorities and other stakeholders on the future baseline for education and healthcare capacity.

Consideration of Intra-Cumulative Effects

3.36 Intra-cumulative effects will be considered within a standalone chapter of the ES (*Chapter 13: Cumulative Effects*). This will take the form of a matrix identifying the sensitive receptors and the different effects arising from the proposed development experienced at each – for example, an individual receptor close to the site boundary may be affected by noise and visual effects.

DESIGN INTERVENTIONS

3.37 EIA is an iterative process, as illustrated in **Figure 2.** An initial impact assessment of the proposed development is undertaken, based on which recommendations are made on how the proposed development could be altered to lessen adverse effects and enhance beneficial effects. Where these measures are incorporated into the design of the development, these will be shown on the application plans and termed 'design interventions'.

3.38 The revised design then undergoes a further impact assessment and, if required, additional mitigation and enhancement measures (which are not incorporated into the design and/or relate to the management of the proposed development) are identified. The ES will include an assessment of residual effects which are those likely to arise after any additional proposed mitigation and enhancement has been applied.

3.39 This is not a discrete process but may be subject to several iterations as the design evolves, with this scoping report representing the latest understanding of the scheme as part of the most recent iteration of the EIA assessment process.

3.40 The final output of the EIA process is the Environmental Statement, which reports on the findings of the EIA. As the intended application is hybrid in nature, when further details are submitted for the outline elements through reserved matters applications, due consideration will be given to whether these fall within the assessment envelope considered at the outline

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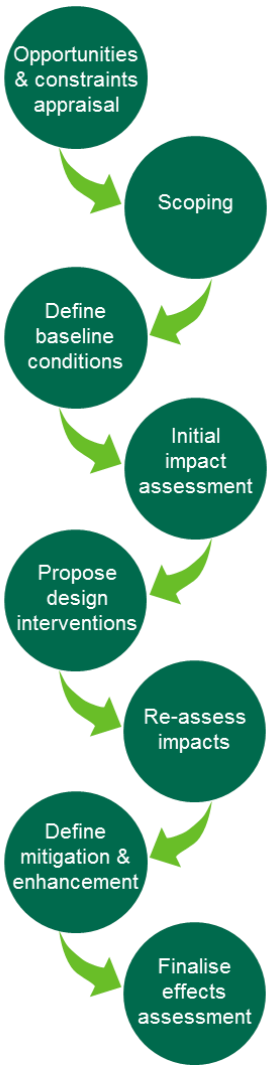
stage, and a statement of compliance provided. Should any aspects of the reserved matters applications deviate from the parameters assessed, re-assessment according to the below approach would be undertaken.

Figure 2
Iterative EIA Approach including Design Interventions



MITIGATION & MONITORING

3.41 The ES will clearly state appropriate management and monitoring activities that will be undertaken to both mitigate any potential adverse significant effects and to review the efficacy of any recommended enhancement measures, where relevant. These will also be reviewed at the reserved matters stage to ensure that they remain effective and appropriate, with the potential for revision if required.

CONSIDERATION OF ALTERNATIVES

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3.42 Schedule 4 of the EIA Regulations 2017 requires the ES to contain:

"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".

3.43 The Government PPG on EIA states at paragraph 035 that:

"Where alternative approaches to development have been considered, the Environmental Statement should include an outline of the main alternatives studied and the main reasons for the choice made, taking into account the environmental effects". [1]

3.44 Potential alternatives can be broadly grouped into the following categories:

- Alternative sites;
- Alternative land uses;
- Alternative processes; and
- Alternative development layouts.

3.45 This information will be set out in *Chapter 4: Alternatives & Design Evolution* of the ES.

STRUCTURE OF THE ENVIRONMENTAL STATEMENT

3.46 There is no defined structure for an ES, provided that it meets the requirements outlined in Regulation 18(3) of the EIA Regulations 2017. This section sets out the proposed structure for the ES.

Volumes of the ES

3.47 The ES will be presented in three separate parts:

- **Volume I** will comprise the non-technical summary of the information contained in Volumes II & III to make the scope, methodology, results and conclusions readily understandable to non-specialists.
- **Volume II** will be the main volume of the ES and will describe: the proposals, the alternative options considered, the baseline environmental conditions, the likely significant effects of the development, the proposed mitigation measures and the residual environmental effects.
- **Volume III** will contain the technical appendices, which comprise the technical reports that have informed the assessment contained in Volume II. Where relevant, it will also contain reports which deal with topics that have been scoped down/scoped out of the ES.

3.48 The proposed structure of Volume II (the main volume of the ES) is presented in **Table 2**. It should be noted that Volume III will include standalone reports for Archaeology, Climate Change and Greenhouse Gas Emissions, Human Health and Potential for Major Accidents and Disasters; the technical topics to be scoped down.

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Table 2

Proposed structure of Volume II of the ES

CHAPTER		CONTENT
1.	Introduction	Scheme background; scheme context; explanation of EIA and the EIA Regulations; the structure of the ES; information on the project team and chapter authors; where to view hard copies of the ES; how to comment etc.
2.	EIA Methodology	Approach to EIA process, including: consultation, responses received and how/where issues have been addressed within the ES, discussion of issues scoped out of the EIA, structure of technical chapters and approach to assessment of residual impact significance
3.	Site Description & Development Proposals	Description of site and the wider study area; description of the elements of the development relevant to the assessment of its possible effects on the environment, including phasing, associated development etc.
4.	Alternatives & Design Evolution	Outline of the alternatives considered by the Applicant, including alternative layouts etc.
5.	Construction Strategy & Programme	Describes the demolition and construction strategy, including indicative phasing of the works, and the proposed mitigation measures to be adopted through the Construction Environmental Management Plan
6.-13.	Technical chapters	Detailed assessment of each environmental topic area (**Socio-Economics**, **Landscape & Visual**, **Cultural Heritage – Built Heritage; Biodiversity; Transportation & Access, Air Quality, Ground Conditions & Contamination, Water Resources & Flood Risk** and **Noise and Vibration**), including consideration of direct, indirect, primary, secondary, short, medium and long-term and cumulative effects
14.	Cumulative Effects	Assessment of cumulative effects (both inter- and intra-cumulative) of the proposed development + and other identified cumulative schemes, on key receptors.
15.	Residual Effects Summary & Conclusions	Full list of the residual effects of the development, the mitigation measures proposed and how these are to be secured; details on how to comment, what the determination period is etc.
16.	Glossary & Abbreviations	List of abbreviations and glossary of terms.

Structure of the Technical Chapters

3.49 The technical chapters will be structured as follows:

- Introduction;
- Methodology;
- Baseline conditions;
- Potential significant impacts;
- Design interventions;
- Assessment pre-mitigation;
- Mitigation & enhancement measures;
- Assessment post-mitigation; and

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- Inter-cumulative Impacts.

3.50 The structure of the technical chapters – particularly the use of tables – has been devised to make the technical assessments better focused and more accessible to readers, and to reduce the length of the main volume of the ES.

3.51 Where information has been summarised in the tables, references are provided as to where the full information is provided in the technical appendices.

Introduction

3.52 This section will provide details of:

- the company that has undertaken the technical assessment, as well as the author(s) and their professional qualifications;
- the purpose and scope 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 the technical appendices that are relevant and referenced within the chapter.

Methodology

3.53 This section will provide 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 Historic England);
- the comments raised during scoping and a commentary on how the comments have been addressed within the assessment;
- a description of how climate change, human health and risk of major accidents and/or 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* of the ES that have been considered and assessed;
- 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: Site Description & Development Proposals* of the ES – and the scale of magnitude adopted within the assessment;
- how significance has been assessed (e.g. whether a matrix or some other approach has been adopted);
- 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; and
- any assumptions or limitations.

Baseline Conditions

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3.54 This section will take the form of a table that provides a list of:

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

Potential Significant Impacts

3.55 This section will take 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 will be used within the ES to refer to both the demolition and construction activities anticipated as a result of the proposed development.

Design Interventions

3.56 This section will take the form of a table and will list the design interventions that have been introduced to address the potential significant impacts of the proposals, the reason(s) that the intervention was included (e.g. the siting of a building so as to avoid particularly sensitive habitats within the site boundary) and where further details can be found within the relevant technical appendices.

Assessment Pre-Mitigation

3.57 This section will take 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 impact;
- whether mitigation is proposed; and
- where further details can be found within the relevant technical appendices.

Mitigation and Enhancement Measures

3.58 This section will take 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 effect post-mitigation;
- whether the post-mitigation effect is adverse or beneficial; and
- where further details can be found within the technical appendices.

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Assessment Post-Mitigation

3.59 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.

Inter-Project Impacts

3.60 This section will take 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-cumulative effects alongside the development proposals;
- 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-cumulative effects for the specific topic area under consideration.

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

- the phase during which inter-cumulative effects may arise;
- the receptor(s) likely to be affected;
- any additional measures that are required to mitigate the identified inter-cumulative impacts; 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.

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

3.63 This is also the case where cumulative schemes may be intrinsically considered within the main technical assessment, such as with transportation where committed developments are included in the modelling.

ASSESSMENT OF SIGNIFICANCE

3.64 DCLG Guidance suggests that it is advantageous to devise generic assessment criteria for determining the significance of impacts that can apply for all environmental topics considered within an ES. This ensures that, where possible, effects are assessed in a comparable manner.

3.65 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 effects. The significance of potential impacts should then be determined through consideration of respective sensitivity and magnitude.

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3.66 The assessment of significance within the ES will be considered using a common scale, being described as either '**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 will be left to the judgement of each technical consultant, so that it reflects best practice within their specialist area and in that instance, will be set out clearly in each relevant chapter. Where methodologies have been adapted from specific industry recognised guidelines, e.g. Landscape Institute and Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines, an explanation as to the chosen methodology is provided (typically within the technical appendices).

3.67 In addition to the significance of the effect, statements will also be 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 in Table 3 below:

Table 3

Terminology for the Description of Effects

TERM	DEFINITION / EXAMPLE
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. changes to the landscape)
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 7 years
Medium-term	An effect lasting between 7 and 15 years
Long-term	An effect lasting more than 15 years
Cumulative	Increasing by one addition after another (e.g. traffic generated by a number of different developments occurring in close proximity to one another)

COMPETENT EXPERTS

3.68 Regulation 18(5) of the EIA Regulations 2017 states that:

"In order to ensure the completeness and quality of the environmental statement –

b. *The developer must ensure that the environmental statement is prepared by competent experts; and*

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c. *The environmental statement must be accompanied by a statement from the developer outlining the relevant expertise and qualifications of such experts."*

3.69 For the technical consultant organisations responsible for each technical chapter, CVs for the individual technical consultants will be included within the ES to demonstrate their competent expertise in their field.

4.0 PROPOSED SCOPE OF THE ES

INTRODUCTION

4.1 This section considers the likely environmental effects of the proposed development and therefore the technical topics proposed for inclusion within the ES.

4.2 A list of technical topics was initially evaluated based on the potential for each to exhibit significant environmental effects because of the proposed development. This evaluation process included a full review of technical assessments and consultation responses associated with the extant planning permisison, provisional assessments for each topic to understand the existing baseline conditions, as well as consultation with SDC and other stakeholders, including Natural England.

4.3 Based on this initial evaluation process Table 4 summarises the proposed scope of the EIA and outlines the following technical topics to be:

- **'Scoped In'** – for detailed consideration within a chapter of the main ES volume, as significant environmental effects are likely;
- **'Scoped Down'** – included within the ES technical appendices but not meriting the preparation of a stand-alone technical chapter within the main volume. It is considered unlikely for these technical topics to exhibit significant environmental effects but further assessment is required to satisfy planning requirements; and
- **'Scoped Out'** – of further assessment as part of the EIA, as it is considered unlikely for these topics to exhibit significant environmental effects and they are not specifically required to satisfy planning requirements.

Table 4

Proposed Approach to the Topics Scope of the ES

TOPICS TO BE SCOPED IN	TOPICS TO BE SCOPED DOWN	TOPICS TO BE SCOPED OUT
Socio-Economics	Buried Heritage - Archaeology	Waste Management
Landscape & Visual Effects*	Climate Change & Greenhouse Gas Emissions	Land
Cultural Heritage - Built Heritage	Human Health	Daylight, Sunlight & Overshadowing
Biodiversity (to include Arboriculture)	Major Accidents & Disasters	Wind
Transportation & Access		
Air Quality		
Noise		
Water Resources & Flood Risk		
Ground Conditions		

**Landscape and Visual Impact Assessment (LVIA)*

PROPOSED SCOPE OF THE ES

4.4 The approach to new topics that now require specific consideration under the EIA Regulations 2017 including: climate change, land (agriculture/soil), human health, and, major accidents and disasters, is set out in paragraph 4.7.

4.5 The reasons for the reduction in scope of those topics proposed to be 'scoped out' or 'scoped down' and how the 'scoped in' and 'scoped down' topics will be addressed in the ES are provided in the sections that follow.

4.6 Scoping is not limited to the submission of a request for a scoping opinion and is an ongoing process. If, through further assessment being carried out by the technical consultants or through additional matters raised by the local authorities in consultation, it becomes clear that one or more of the 'scoped down' topic areas are likely to have significant effects, then the matter will be reported through the preparation of a full ES chapter.

NEW TOPICS UNDER THE EIA REGULATIONS 2017

4.7 The EIA Regulations 2017 introduce new topics that need to be considered within the scope of an EIA. The new topics include climate change, human health, land (for example land take) and the vulnerability of the development to risks of major accidents and/or disasters.

4.8 The risks of major accidents and/or disasters, or, effects of the development in relation to human health, climate change or land are relevant to a specific technical assessment, this will be stated and assessed within the respective ES chapter/report. Where they are not considered relevant for a topic then the chapter of the ES will carry a statement to that effect and give reasoning.

4.9 Stand-alone technical reports will also be produced which will summarise the findings of each of the technical chapters and provided the reasoning behind the scheme's overall impact in regard to these technical topics. These reports will be appended to the ES.

ONGOING CONSULTATION ON SCOPE OF THE EIA

4.10 It is recognised that scoping is an ongoing process. The scope of the EIA/ES has been under continual review with SDC as the scheme has evolved, the design process has progressed, and, as results of further studies and assessments have become available.

4.11 The scope of the ES will continue to be reviewed which may result in topics that are currently 'scoped in' being 'scoped down' should appropriate design interventions mitigate potential significant impacts. However, it may also mean that topics currently being 'scoped out' or 'scoped down' are 'scoped in' should further surveys identify additional likely significant effects.

5.0 SCOPED IN TOPICS

5.1 This section considers the likely significant environmental effects of the proposed development and therefore those technical topics proposed to be 'scoped in' for detailed consideration within the ES.

SOCIO-ECONOMICS

Context

5.2 The application site comprises and existing employment site, currently occupied in large part by the DSTL and in part by QinetiQ, a specialist defence company, which provide scientific and technical research services to the Ministry of Defence. Due to the current consolidation and relocation of DSTL, the majority of the application site will be vacant thereafter and available for redevelopment. Although QinetiQ intend to consolidate and remain on the application site subject to the improvement of its premises as part of the redevelopment.

5.3 Approximately 285 buildings are present on the site, with the main part (excluding the Fort Scheduled Monument) as previously stated, by SDC as a MDS for employment.

5.4 The assessment of the potential socio-economic effects will include consideration of the following potential effects:

- Employment generated during the construction phase;
- Loss of existing uses on site, (this will include consideration of the loss of existing jobs);
- Employment generated within the new uses, considering the gross employment as well as net additional above existing employment levels on-site and retention of existing employment in the proposed development will also be considered;
- Housing delivery;
- Increased population;
- Demand for social infrastructure including schools, health, open space and playspace;
- Delivery of new social infrastructure; and
- Spending impacts from increased residential population and new employees.

Baseline Conditions

5.1 The baseline conditions for the application sites will be established with reference to the following sources:

- A policy review to provide an outline of the relevant local and regional, social and economic policies and objectives for the area;
- Liaison and dialogue with the local authority and other stakeholders for information regarding the economic, employment, and local facility aspirations for the local area, as appropriate.
- A desk-top review of current social and economic conditions in the local area in comparison with local, regional and national trends, using information available from the project team, the local authority, and published data including ONS and other government data. This information will be used to establish the base case, including the:

SCOPED IN TOPICS

- Economic baseline: A review of workforce, economic activity, earnings, industries of occupation and occupational classification; and
- Social baseline: A review of the population of the area, housing demand and supply, capacity of local facilities including GP surgeries and schools, and open space/play space provision.

Key Issues and Requirement for Assessment

5.2 The development will have a range of socio-economic effects during the construction and occupation phases. This development will be delivered over a series of phases. However, as this application will be an outline application with a detailed first phase, there will not be a detailed phased assessment set out within the socio-economic assessment. The assessment phases will include construction phase, initial year of operation/occupation and final completion of the scheme. The key impacts arising from the proposed development will be the effect of jobs, both loss of existing and generation of new, and, the impact of housing delivery and new population.

5.3 The likely sensitive receptors in the local area are considered to be:

- Population
- Employment base
- Labour force
- Housing supply
- Local community facilities.

5.4 The socio-economics chapter will assess the potential effets of the proposed development on each of these receptors and the baseline conditions associated with them. The findings of the assessment will be provided in the Socio-Economics chapter within the main ES volume.

Non-significant Issues Related to Socio-economics

5.5 The EIA Regulations 2017 require the consideration of the potential effects on climate change and human health where significant effects are likely to occur. The assessment should be proportionate to the project being considered.

5.6 Several environmental factors are considered to experience variations in the future due to climate change. These include the increase in the mean average air temperature, increase in average annual precipitation, and wind speed and total cloud cover could slightly decrease.

5.7 These changes are not considered to have a significant effect upon the sensitive receptors within a socio-economic assessment. Therefore, potential effects related to climate change are not considered to be relevant to the assessment of socio-economics effects.

5.8 The socio-economic aspects of the scheme (provision of housing and jobs, population, and demand for community infrastructure), could potentially give rise to indirect beneficial effects on human health.

5.9 Greater access to adequate housing and employment may be positively correlated with good health, but these effects will be uncertain and not measurable. The incidence of any such health effects will be very widely dispersed through marginal changes to the wider housing and employment markets, and so the effect is not significant at any level.

SCOPED IN TOPICS

5.10 The potential effects of a new development on the health of new and existing residents and workers would be largely determined by the way the development's buildings and spaces are used, as well as lifestyle factors which cannot be accurately quantified or controlled at the planning stage. These wider factors sit outside of the scope of planning and EIA.

Assessment Methodology

5.11 The socio-economic assessment will, wherever possible, draw on existing benchmarkssuch as those provided by Homes England (which replaced the Homes and Community Agency (HCA) in January 2018). Where no such benchmarks exist, professional experience and judgement will be applied and justified.

5.12 The socio-economic ES chapter will provide a relevant summary of planning policy and guidance at the local, district (SDC), County (KCC) and regional (South East) level.

5.13 The assessment of socio-economic baseline conditions and potential impacts will utilise a number of methodologies, data sources and assumptions. These are set out below:

- The socio-economic baseline will be established using key data including:
  - 2011 Census Data [15];
  - ONS Mid Year Population Estimates
  - ONS Annual Population Survey and other relevant labour force data
  - Business Register and Employment Survey (BRES) [16];
  - MHCLG housing stock data and ONS affordability data
  - Department for Education schools data
  - NHS data (General Practitioners)
- Demolition and construction employment impacts will be assessed using a ratio of the capital construction cost of the proposed development to data regarding the total value of construction in the country and the corresponding level of construction employment;
- An estimation and quantification of the population and child yield associated with the completed and operational development. The modelling methodology applied to estimate the population and child yield will be based on KCC's child yield methodology. The population estimation will be based on the average household size for SDC;
- Operational employment impacts will be assessed using the Homes England standard job density for commercial floorspace, sense checked against information from the developer.
- Estimates of spending by newly introduced residents will be calculated using the Office for National Statistics (ONS) average annual household expenditure on goods and local services;
- Local spending by those working on-site may be calculated using standard multipliers.
- Current capacity in schools surrounding the site will be assessed based on information from Annual Schools Census data and KCC's published admission numbers;
- Availability of primary healthcare facilities in the local area will be assessed by using published National Health Service (NHS) data. This information will be compared with the projected new population in the development to estimate the likely effect of the development on primary healthcare facilities; and

SCOPED IN TOPICS

- Provision of open space and child play space will be assessed in line local policy requirements.

5.14 Any mitigation measures required to address any likely adverse effects will be identified through the assessment. Mitigation, if required, could include the on-site provision of facilities or services to meet additional demand, or off-site mitigation through financial contributions via the Community Infrastructure Levy (if adopted following Local Plan) and/ or the Section 106 agreement.

LANDSCAPE AND VISUAL EFFECTS

Context

5.15 The application site is located to the north-west of Sevenoaks, on a wooded escaprment of the Kent Downs.

5.16 The proposed development has the potential to effect the character of the application site, and the character of the surrounding landscape. There is also potential for views to the application site from surrounding areas.

5.17 The site also falls within the Kent Down Area of Outstanding Natural Beauty (AONB), and the proposed scheme has the potential to effect the natural beauty and special qualities of this desingated landscape.

5.18 An assessment of the landscape and visual effects will be prepared by LDA Design Consulting.

Baseline Conditions

5.19 The application site lies within the *North Downs* National Character Area (NCA) and *Knockholt: Darent Valley* Landscape Character Area (LCA) as defined in the *Kent* Landscape Character Assessment [17] which both comprise woodlands, escarpments and densely settled areas as key features. The Kent Downs chalk escarpment and low lying flood plain of the River Darent valley are key features that shape the composition of the landscape surrounding the site.

5.20 The Kent Downs AONB, within which the site is located, is characterised by its dramatic and diverse topography, chalk and greensand escarpments, expansive open plateau, hidden dry valleys, steep-sided river valleys, white cliffs and foreshore. Settlements and woodland, which comprises much of the area immediately adjacent to the site boundary, form key features of the area.

5.21 The majority of the application site occupies a prominent plateau. Its south-eastern edge rapidly falls away from the higher ground towards the town of Sevenoaks opening up wide panoramic views across the Darent Valley where the linear form of the M25 is a notable feature.

5.22 Woodland is a key characteristic of the application site, surrounding it and providing enclosure. As such, the application site is generally not visible from surrounding settlements, roads and footpaths (FP). Few long distance views from the site exist, with the exception of a view northward to Central London.

5.23 According to the Kent Historic Landscape Characterisation (HLC) [18], the built area of the site is classified as *"Replanted other pre-1810 Woodland"* with other areas of the site

SCOPED IN TOPICS

classified as *"Pre-1810 scarp and steep valley side woodland, Post 1810 Settlement, Downland and Parliamentary type enclosure*."

5.24 Areas of woodland have since been cleared to allow for the development of the Ministry of Defence (MoD) research establishment in the 1940's. Today, the application site is still occupied by defence related industries. It is currently home to Defence Science and Technology Laboratory (DSTL), which is part of the Ministry of Defence, and QinetiQ, a private defence technology company.

5.25 The companies operate out of a range of office, laboratory and storage type buildings which are scattered throughout the application site. They are typically low-rise buildings 1 – 2 storeys in height, although there are a number of taller buildings within the site, including N2 and the boiler house chimneys of Building S2. The buildings are interspersed with internal roads; large areas of hard standing used for parking / access; smaller storage buildings and bunkers; and areas of amenity grassland and mature trees.

5.26 For the purposes of this assessment, a future baseline senario will also be considered in which the permitted development has been constructed, including up to 450 new homes, employment development and green infrastructure. The original LVIA found that the completed development would improve the visual amenity and character of the site. In particular, the character of the Darent Valley to the south and the visual amenity of adjacent Public Rights of Way that are currently dominated by the perimeter security fencing would be significantly improved. Based on the maximum spatial and height parameters, the majority of the proposed development would be hidden by the perimeter vegetation. Some taller elements, namely flues within the flue zone (should it be required) and the maximum height of the new employment park in places, would potentially break this vegetation but would appear as small features within the wider panorama and would not result in significant impacts in landscape and visual terms.

5.27 There was also likely to be nominal beneficial changes to the night time visual amenity as a result of the complete development. The most noticeable changes would occur in the vicinity of the Star Hill Road junction with the removal of the Star Hill Road Gatehouse and associated security lighting and reduction of sky glow above the Site as a result of a coherent lighting strategy.

Key Issues and Requirement for Assessment

5.28 At the local level, the key issues to be considered as part of the assessment will be:

- the existing character and condition of the application site;
- the contribution made by the site to surrounding landscape character;
- the current visibility of the application site; and
- the contribution made by the site to local and long distance views.

5.29 The proposed development would have direct and indirect effects on landscape features, landscape character and views as follows:

- *Direct landscape effects* - the proposed development would result in a change in the existing land cover and the creation of a new pattern of land cover and land use
- *Indirect landscape effects* – the proposed development would potentially affect the character of the surrounding landscape

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- *Views* – the proposed development would potentially change views near to the application site from near-by roads and public rights of way. The proposed development may also be visible in longer distance views across the landscape.

5.30 The potential effects on the landscape features, character and views will be considered and addressed through the masterplanning process, with the vast majority of the mitigation embedded in the proposed development design. This will include careful attention to the layout of the scheme; height of proposed buildings; and creation of a comprehensive landscaping strategy, which will allow for the retention of the vast majority of woodland surrounding the application site.

Assessment Methodology

5.31 The methodology will principally be based on the Landscape Institute and IEMA's '*Guidelines for Landscape and Visual Impact Assessment*' Third Edition (2013) [19] and other relvent best practice guidance.

5.32 The overall purpose of the LVIA will be the consideration of residual (or long-term) effects of the proposed development and the identification of any significant effects that are likely to arise.

5.33 The assessment of effects will aim to identify the likely landscape and visual effects of the development in an objective and systematic manner. This will be informed by a baseline appraisal of the existing baseline conditions on and around the application site, which will include desktop analysis of published sources and site specific field surveys. The overall design objectives and aspirations for the area, together with the opportunities identified during the site surveys, will be summarised in order to inform the consideration of the potential impacts.

5.34 The baseline landscape assessment will consider the existing and potential future contribution of the application site at both the local and district-wide scales. The assessment will identify key measures to maximise beneficial landscape and visual effects and to avoid, reduce, remedy or compensate for any adverse effects. These measures will be incorporated or 'designed-in' (design interventions) to the proposed development through an iterative design process and, where appropriate, recommended as additional proposed mitigation measures to be incorporated into a reserved matters application.

5.35 The findings of the assessment will be presented in the Landscape & Visual effects chapter within the main volume of the ES.

Zone of Theoretical Visibility and Assessment Viewpoints

5.36 A Zone of Theoretical Visibility (ZTV) is being calculated for the application site to help inform the asssessment of landscape and visual effects, and will be based on maximum building height parameters. The ZTV of the proposed development will be included within the LVIA.

5.37 A review of the previous LVIA work (associated with the extant permission) has been undertaken to identify the proposed representative viewpoints for assessment. These are set out in Table 5 below and were previously agreed with SDC.

5.38 It is proposed that the same selection of viewpoints will be used for the current assessment. This selection of viewpoints allowed for the assessment of a proposed energy centre chimney flue of up to 25m maximum total height and is therefore considered to represent a worst-case senario.

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Table 5

Summary of Proposed Viewpoints

VP	LOCATION	VISUAL RECEPTORS	APPROX. DISTANCE TO SITE BOUNDARY	DESCRIPTION OF VIEW (BASED ON WINTER PHOTOGRAPHY)
01	View from Crow Drive looking south west	Local traffic	Adjacent	The site is well screened behind the perimeter vegetation which forms an effective screen at the eastern end of Crow Drive. The eye is drawn along Crow Drive to the perimeter vegetation. More open views across adjacent countryside are possible northward.
02	View from Crow Drive / FP SR97 looking south west	Walkers on the local FP network; Local traffic	Adjacent	The eye is drawn along Crow Drive to the site Gatehouse. Security fencing is prominent along with mature trees and car parking areas. Filtered views of the Canteen (Building N10) are also possible.
03	View from FP SR172 looking north	Walkers on the local FP network	200m	The perimeter vegetation forms an effective screen to views into the site. The security fence and former quarry can be seen in the view.
04	View from Star Hill Road looking east	Walkers on the local FP network; Local traffic	Adjacent	The view is characterised by perimeter security fencing, gate, gatehouse building, lighting and signage. A glimpsed view into the site is possible along Crow Road although views further into the site are not possible.
05	View from FP SR172 looking south	Walkers on the local FP network	Adjacent	The perimeter vegetation of the site forms an effective barrier to views into the site. The security fence dominates the composition, creating an imposing feature.
06	View from junction of Morants Court Road / Pole Hill (A224), on the North Downs Way, looking north	Walkers on the North Downs Way; Local traffic	600m	The scarp slope is the main feature of the view. Woodland along the top of the scarp slope is visible and screens all built development, with the exception of Building X40, X54 and X58 which sit just in front of the tree-line. The security fence is also visible, running across the scarp slope and also the quarry.
07	View from Otford Lane looking south	Local traffic	400m	The existing view is across paddocks and fields. Woodland along the northern site boundary is visible and screens all built development within the site, with the exception of Building N2 which protrudes above the tree-line.

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VP	LOCATION	VISUAL RECEPTORS	APPROX. DISTANCE TO SITE BOUNDARY	DESCRIPTION OF VIEW (BASED ON WINTER PHOTOGRAPHY)
08	View from FP SK690, to the north of Knockholt Pound, looking south	Walkers on the local footpath network	1.1km	The existing view is across agricultural fields. Woodland along the northern site boundary is visible and screens all built development within the site, with the exception of building N2 and the boiler house chimneys (Building S2) which protrude above the tree-line. The strong vegetative network to the north of the site is apparent.
09	View from the edge of Dunton Green, on the Darent Valley Path, looking north	Walkers on the Darent Valley Path	1.8km	The scarp slope of the North Downs constitutes the main feature within the view, a continuous belt of woodland along its ridge forming the horizon. Views of the site are largely screened by the perimeter vegetation although the security fence is visible.
10	View from Hale Lane Recreation Ground, Twitton, looking east	Private residents; Users of Hale Lane Recreation Ground	1.4km	The wooded scarp slope of the North Downs is the prominent feature of the view. Views of the site are largely screened by the perimeter vegetation with only the security fencing visible.
11	View from Fackenden Lane looking south west	Local traffic	2.6km	A glimpsed view through a break in vegetation, the escarpment forms a prominent landform feature in the composition, cloaked with woodland along its ridge. Despite the winter conditions, the perimeter vegetation forms an effective visual screen to the site and the aspect of the slope meaning the security fencing is not visible.
12	View from FP SR60, near Otford Mount, looking south west	Walkers on the local footpath network	2.7km	A wide panoramic view over the settled Darent Valley with the North Downs escarpment forming a prominent backdrop to the composition. The perimeter vegetation forms an effective screen to views of the site.
13	View from near Otford Mount, on the North Downs Way, looking west	Walkers on the North Downs Way	3.4km	A glimpsed view through vegetation aligning the North Downs Way toward the site. The scarp slope forms the prominent landform of the view where the security fence can be seen on its face although the majority of the site is concealed behind the perimeter vegetation.

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VP	LOCATION	VISUAL RECEPTORS	APPROX. DISTANCE TO SITE BOUNDARY	DESCRIPTION OF VIEW (BASED ON WINTER PHOTOGRAPHY)
14	View from junction of London Road / Argyle Road, within Sevenoaks, looking north west	Private residents in Sevenoaks; Pedestrians; Local traffic	4.8km	The North Downs escarpment forms an attractive backdrop to views out from the town where its face and wooded ridge can be seen. The former quarry at the North Downs Business Park is also visible along with the perimeter security fence. The majority of the site is hidden from view by the perimeter vegetation.
15	View from Knole Park / FP SU18, on the south-eastern edge of Sevenoaks, looking north west	Visitors to Knole Park; Walkers on the Greensand Way	5.8km	Vegetation within the parkland screens views toward the site. Only glimpses through the vegetation are afforded to the North Downs escarpment where the site is primarily indiscernible.
16	Views from southern edge of Ide Hill / FP SR236, looking north	Walkers on the local footpath network	6.6km	The escarpment forms a prominent landform feature to the composition with woodland forming a continuous horizon along its ridge. The quarry can also be seen. The perimeter security fence of the site is just discernible at this distance; however, the majority of the site is screened from view by the perimeter vegetation.

5.39 The potential viewpoint locations are shown in Figures 007 and 008, which have been extracted from the original LVIA.

5.40 If is this necessary to vary any of these viewpoints for technical or practical reasons, this will be agreed in consultation with the relevant technical officers at SDC.

5.41 The selected viewpoints will be used as a basis to assess the visual effects on receptor groups. Receptors groups will share similar views of the proposed development, and will include a combination of residents; users of open space and footpaths; and users of the road and transport network.

5.42 The focus of LVIA work is on publicly-accessible views and for this scheme broad conclusions only will be made in relation to residential views as appropriate for each viewpoint. The LVIA will not include a residential amenity assessment because private views from existing residential development will not be significantly affected in this case, and it was not considered necessary to prepare a residential amenity assessment for the original application.

5.43 Summer and winter photographs will be presented from each viewpoint. The same photography used for the original LVIA will be presented unless site work confirms there is a significant change in baseline conditions, upon which new photographs will be taken.

Wireframes

5.44 Wireframe visualisations will be produced to the same standard and from the same selection of the viewpoints as per the orignal LVIA – i.e. viewpoints VP 06, VP 07, VP12 and

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VP14. The wireframes will use data obtained by a professional survey team and high-quality photographs taken to recognised LVIA standards [20].

5.45 The maximum extent of the buildings included within the outline application will be shown using a 'wireline' drawn to the maximum envelope within which buildings could be designed. The buildings subject to the detailed application will be shown using a 'grey block' presentation.

AONB Effects

5.46 An understanding of the AONB context will infrom the assessment of landscape and visual effects. However, the effects on the natural beauty and special qualities of the AONB will be considered seperately within the planning application. This will follow a similar structure as the AONB Report submitted within the original application, but will be updated to reflect ongoing consultation with the AONB Unit; updated development parameters; and updated assessment information on matters such as ecology, heritage and transport.

Night Time Effects

5.47 The LVIA will include a qualitative assessment of night-time visual effects, based on field study and the findings/recommendations of separate lighting design principles which will accompany the planning application.

CULTURAL HERITAGE – BUILT HERITAGE

Context

5.48 The built historic environment comprises above ground historic buildings and structures, and the broader historic landscape. A Heritage Asset is defined in the National Planning Policy Framework as a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Impacts upon a Heritage Asset include both change to an asset itself or change within its setting.

Baseline Conditions

5.49 A Built Heritage Statement is being undertaken by CgMs (Part of RPS Group), for the proposed development, in accordance with standards and guidance provided by the relevant bodies, such as Historic England (HE) and the Institute of Historic Building Conservation (IHBC).

5.50 The study area has been defined by the application site boundary for this assessment.

5.51 No World Heritage Sites, Conservation Areas, Registered Parks and Gardens or Registered Battlefields are located within the study area. Within the study area, the following built heritage assets have been identified as potentially subject to impacts from the proposed development:

- Fort Halstead Scheduled Monument (List Entry Number: 1004214);
- Fort Halstead: Buildings F16 and F17 Grade II* Listed Buildings (List Entry Number: 1412293);
- Fort Halstead: Building F11 Grade II Listed Building (List Entry Number: 1412292);

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- Fort Halstead: Building Q14 Grade II Listed Building (List Entry Number: 1396578); and
- 25 Non-designated heritage assets, of which three have been approved for demolition under the 2015 consent (Buildings Q3, Q4 and Q4.1).

Key Issues and Requirement for Assessment

5.52 The proposed scheme would have either direct and/or indirect effects on the following built heritage assets:

- Fort Halstead Scheduled Monument (List Entry Number: 1004214);
- Fort Halstead: Buildings F16 and F17 Grade II* Listed Buildings (List Entry Number: 1412293);
- Fort Halstead: Building F11 Grade II Listed Building (List Entry Number: 1412292);
- Fort Halstead: Building Q14 Grade II Listed Building (List Entry Number: 1396578); and
- 25 Non-designated heritage assets.

Assessment Methodology

5.53 A Built Heritage Chapter for the ES including the supporting Built Heritage Statement will be prepared by CgMs (Part of the RPS Group) in accordance with standards and guidance provided by the relevant bodies, such as Historic England (HE) and the Institute of Historic Building Conservation (IHBC).

5.54 The Built Heritage chapter for the ES, will cover upstanding buildings and/or structures above ground on the application site including the Scheduled Monument, but will exclude buried archaeological assets. It will assess the value and sensitivity of built heritage assets within the application site and consider the effect of the proposed development on these assets' value and sensitivity. It will assess the effects of the proposed development upon the settings and/or fabric of built heritage assets (both designated and undesignated). The potential effects to the setting of these assets will be assessed in line with Historic England's *Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets (2nd Edition 2017)* [21]. The assessment will be supported by verified visuals prepared as part of the LVIA work.

5.55 Data will be gathered from a number of information sources including:

- The National Heritage List for England (NHLE);
- The Kent County Council Historic Environment Record;
- Historic Ordnance Survey Mapping and pre-Ordnance Survey mapping (where available);
- Relevant primary and secondary sources held at the Kent Archives and Local History Centre and other relevant repositories;
- Previous publications and reports on the application site, written by Waterman, Heritage Collective and Historic England; and,
- The application site itself, which was subject to a walk-over inspection in October 2018 to verify the current site conditions.

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5.56 Alongside a site visit, the ZTV calculated as part of the LVIA work, will be used to establish the extent of inter-visibility between the heritage assets and the proposed development to understand the likelihood and potential for effects upon their setting.

5.57 Consultation will be undertaken with the relevant local authority's Conservation Officers and Historic England, as appropriate. This consultation will seek approval of the contents of the assessment, and will identify any requirements regarding the need for further assessment work.

5.58 The assessment will include consideration of the 2015 consented scheme as a future baseline situation.

BIODIVERSITY

Context

5.59 The proposed development of Fort Halstead has the potential to affect flora and fauna present at the application site.

Baseline Conditions

5.60 The extant outline planning permission for the site dating from 2015 was supported by an Ecological Appraisal, and, Protected Species and Habitats Survey Report, both produced by Waterman Energy, Environment and Design Ltd. These reports described the findings of a suite of baseline ecological surveys and assessments completed between 2006 and 2013, which included a Phase 1 Habitat Survey, Breeding Bird Survey, Bat Surveys (daytime inspections, dusk/dawn emergence surveys and manual/automated activity surveys), Badger Survey, Invertebrate Survey, Dormouse Survey, National Vegetation Classification Survey (Woodlands and Grasslands) and Reptile Survey. The key ecological receptors identifited in the 2015 ES Chapter were ancient woodland, notable habitats including woodland and calcareous grasslands, roosting and foraging bats, breeding birds, badgers, terrestrial invertebrates, reptiles and dormice. The key findings of the 2015 chapter are summarised in Table 6.

Table 6

Summary of Key Findings of 2015 Biodiversity ES Chapter

RECEPTOR	PRE- MITIGATION EFFECT	PROPOSED MITIGATION	RESIDUAL EFFECT
CONSTRUCTION PHASE			
Designated sites	Insignificant (land take, isolation) Minor adverse (dust and pollution, lighting, surface water runoff	Outline Construction Environmental Management Plan (CEMP)	Insignificant
Low value habitats (buildings and hardstanding, amenity grassland, ornamental planting)	Insignificant	None	Insignificant
Notable grasslands (semi-improved neutral, semi-improved calcareous, unimproved calcareous)	Insignificant	None	Insignificant
Woodland	Insignificant	None	Insignificant

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RECEPTOR	PRE- MITIGATION EFFECT	PROPOSED MITIGATION	RESIDUAL EFFECT
CONSTRUCTION PHASE			
Trees and Shrubs	Minor adverse	Outline CEMP	Insignificant
Bats	Minor adverse	Outline CEMP	Insignificant
Badgers	Minor adverse	Outline CEMP	Insignificant
Terrestrial invertebrates	Minor adverse	Outline CEMP	Insignificant
Breeding birds	Minor adverse	Outline CEMP	Insignificant
Reptiles	Minor adverse	Outline CEMP	Insignificant
Dormice	Minor adverse	Outline CEMP	Insignificant
OPERATIONAL PHASE			
Ancient Woodland	Insignificant (recreation, lighting) Minor beneficial (habitat management)	None	Insignificant/minor beneficial
Other nature conservation sites	Insignificant	None	Insignificant
Semi-improved neutral grassland, semi-improved calcareous grassland, unimproved calcareous grassland	Minor beneficial	None	Minor beneficial
Trees and shrubs	Minor beneficial	None	Minor beneficial
Bats	Minor beneficial (recreation, lighting and habitat management)	None	Minor beneficial
Badgers	Minor beneficial (recreation and habitat management)	None	Minor beneficial
Terrestrial invertebrates	Minor beneficial (recreation, lighting, habitat management)	None	Minor beneficial
Breeding birds	Minor beneficial (recreation, lighting, habitat management)	None	Minor beneficial
Reptiles	Minor beneficial (recreation, lighting, habitat management)	None	Minor beneficial
Dormice	Minor beneficial (recreation, lighting, habitat management)	None	Minor beneficial

5.61 Middlemarch Environmental Ltd subsequently completed a review of all available baseline information produced to support the 2015 ES Chapter and designed a programme of survey updates for 2018 to verify previous findings and allow any changes in the ecological baseline to be assessed in advance of a new planning application.

5.62 The suite of updated baseline survey and assessment work completed by Middlemarch in 2018 included a Preliminary Ecological Appraisal (including desk study exercise and Phase 1 Habitat Survey in accordance with best practice Joint Nature Conservancy Council Methodology), designed to assess current habitat distribution and land use on site, and to identify key ecological features of significance to the proposed development, including nature conservation sites, habitats and species. In addition, Middlemarch has completed, or

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is in the process of completing, the following surveys and assessments: Bat Surveys (preliminary roost assessments, tree climbing surveys, dusk/dawn emergence surveys, manual and automated activity surveys), Badger Survey, Breeding Bird Survey, Botanical Survey, Terrestrial Invertebrate Survey, Reptile Survey, Dormouse Survey and Arboricultural Survey. In general, the survey findings to date correlate with those collected by Waterman Energy, Environment and Design Ltd between 2006 and 2013.

5.63 Table 7 provides a summary of nature conservation sites recorded within a 2 km radius of the site during the updated desk study completed by Middlemarch in 2018. This is based on data sourced from Kent and Medway Biological Records Centre (KMBRC) and the Government website MAGIC (www.magic.gov.uk) [22] in regards to Natura 2000 sites.

Table 7

International and national statutory and non-statutory designations within 2 km

NAME	DESIGNATION	REASON FOR DESIGNATION	DISTANCE
NON- STATUTORY DESIGNATED SITES FOR NATURE CONSERVATION			
Chevening Estate	Local Wildlife Site	No information provided.	Adjacent to southwestern boundary
Woodlands West of Shoreham	Local Wildlife Site	Encompasses several parcels of ancient semi-natural and replanted woodland.	10 m east
Polhill Bank	Kent Wildlife Trust Site	No information provided.	150 m northeast
Crown Meadow Wood	Kent Wildlife Trust Site	No information provided.	890 m southeast
Chevening Churchyard	Local Wildlife Site	No information provided.	920 m southwest
Woods and Pasture at Pratt's Bottom	Local Wildlife Site	No information provided.	1,360 m northwest

Source: KMBRC and MAGIC 2018

5.64 The Phase 1 Habitat Survey element of the Preliminary Ecological Appraisal was completed during the week commencing 14th May 2018. A total of 16 habitat types (based on JNCC classification) were recorded within the survey area, comprising:

- Amenity grassland;
- Bracken;
- Broad-leaved plantation woodland;
- Broad-leaved semi-natural woodland;
- Buildings;
- Coniferous plantation woodland;
- Fencing;
- Hardstanding;
- Mixed plantation woodland;
- Poor semi-improved grassland;
- Scattered scrub;
- Scattered trees;
- Semi-improved neutral grassland;

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- Species-rich hedgerow with trees;
- Tall ruderal vegetation; and,
- Unimproved calcareous grassland

5.65 The most notable habitat types on site are considered to be the woodland and grassland communities, and the numerous scattered mature trees. The surrounding ancient woodland is particularly notable, comrising a complex mosaic of different woodland types, including: semi-natural ancient woodland, replanted woodland (mixed woodland in places) and broadleaved plantation found to the south west. The majority of the woodland has lacked effective management which has restricted the diversity of species and limited the development of a structured understorey and ground flora. The grassland mosaics found in the southern and western regions of the landholding are fairly species-rich. Other habitat types on site are generally of limited intrinsic value, but do provide habitat for a range of notable faunal species.

5.66 Given the types of habitat currently found to be present on site, and results of the extensive ecological data gathered during surveys previously undertaken in support of the extant permission, the site has the potential to support the following protected species: bats, dormice, badgers, breeding birds, reptiles and terrestrial invertebrates. Key findings of the survey work completed to date in 2018 are as follows.

5.67 **Bats:** The site contains a very high number of buildings and trees offering potential to support roosting bats. At the time of writing at least five bat roosts have been recorded within buildings on site, with more likely to be identified during ongoing survey work. Assessments of trees are ongoing. The site is of value to foraging bats, particularly along unlit woodland edges.

5.68 **Badgers:** At least ten individual badger setts are present on site, including one main sett. The site is considered to support a single badger population as a result of isolation from other potential badger territories in the wider area.

5.69 **Breeding Birds:** The 2018 Breeding Bird Survey identified that the wider site supports a total of 44 breeding species, of which the most notable are species of woodland and woodland edge habitats such as nightingale, spotted flycatcher, mistle thrush and song thrush. The less wooded regions of the site also supported species generally considered to be declining farmland breeders, such as skylark, yellowhammer and stock dove. The survey also recorded non-breeding species including red kite, peregrine, swift, swallow and house martin.

5.70 **Terrestrial Invertebrates:** Analysis of results from the 2018 surveys is still underway, however initial findings broadly mirror those identified during previous surveys of the site completed in support of the 2015 application. Some areas, however, have declined in quality as a result of the encroachment of courser vegetation that supports fewer pollinating species.

5.71 **Reptiles:** Good numbers of both common lizard and slow-worm have been recorded on site during the 2018 surveys, which correlates with the findings of the previous survey work completed to support the 2015 application. The site contains a variety of suitable habitats for reptile species, most notably the mosaic of grassland habitats.

5.72 **Dormice:** No evidence of this species has been recorded during the survey visits completed in 2018 to date, although based on the findings of the previous survey work it is still believed to be present. Survey visits will continue until October/November 2018.

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5.73 **Trees:** The arboricultural survey, undertaken in accordance with BS5837, identified a total of 756 Category A trees, 445 Category B trees, 271 Category C trees and 108 Category U trees. The most valuable trees are considered to be the numerous mature oak specimens that are located throughout the site, particularly within the mature woodland blocks.

Key Issues and Requirement for Assessment

5.74 The potential effects of the proposed development on local ecological receptors may include, but are not limited to, the following:

- Potential indirect effects on nature conservation sites as a result of issues such as pollution, dust deposition etc.
- Loss of and disturbance to existing woodland habitat during construction and operation.
- Loss of and disturbance to mature trees during construction and operation.
- Loss of and disturbance to existing grassland habitat during construction and operation.
- Loss of, or disturbance to, bat roosting habitat due to removal of existing buildings and trees.
- Loss of, or disturbance to, bat foraging habitat due to removal of vegetation.
- Loss of, or disturbance to, reptile habitats as a result of habitat loss and degradation.
- Loss of, or disturbance to, breeding bird territories as a result of habitat loss and degradation.
- Loss of, or disturbance to, badger territories as a result of habitat loss and degradation.
- Loss of, or disturbance to, dormouse territories as a result of habitat loss and degradation.
- Loss of, or disturbance to, terrestrial invertebrates as a result of habitat loss and degradation.
- Impacts on ecological receptors associated within increased human presence within the site, including recreational pressure on sensitive habitats, litter deposition and predation by domestic pets.
- Disturbance to ecological receptors due to operational phase lighting.
- Beneficial effects arising from improved management of existing habitats and appropriately designed landscaping.

5.75 These potential impacts, amongst others, will be explored during the impact assessment process.

5.76 Opportunities for both avoidance of impacts and ecological enhancement are available through good design, which will be achieved by ensuring that ecological input is provided to the evolution of the development design. The aim is to target development within areas of reduced biodiversity value, and to retain, protect and enhance key features on and surrounding the site. The ES will be accompanied by a Framework Ecological Mitigation Strategy and an Outline Landscape and Ecological Management Plan to ensure that works are undertaken in accordance with the legislation pertaining to the habitats and species present on site. Where protected species are encountered on site and require translocation, relevant licences will be obtained from Natural England.

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5.77 An Arboricultural Impact Assessment and Tree Protection Plan will be prepared once the scheme design has been finalised, to ensure any potential impacts resulting from the removal of the trees, are mitigated effectively and that built development avoids root protection areas.

5.78 The results of the Ecological Impact Assessment will be presented within the Biodiversity chapter of the main volume of the ES. All supporting baseline survey reports will be included as technical appendices to the ES.

Assessment Methodology

5.79 The Ecological Impact Assessment will be undertaken following the methodology set out in Chartered Institute of Ecology and Environmental Management (CIEEM): '*Guidelines for Ecological Impact Assessment in the UK and Ireland*' [23]. This will address likely impacts on designated sites, habitats and species, specifically in relation to the ecological receptors highlighted above and any additional receptors identified as part of ongoing survey work and consultation.

5.80 Ecological receptors will be evaluated in terms of their importance at different geographical scales, as well as the protection afforded to them by national and local legislation, policy and biodiversity strategies. The assessment will consider direct and indirect impacts as a result of construction and operation phases, and, assess the effects in combination with the identified cumulative developments in the surrounding area.

5.81 The assessment will include details of mitigation, compensation and enhancement measures and will consider the residual impacts of the development proposals.

TRANSPORTATION AND ACCESS

Context

5.82 The proposed development will generate additional traffic on the local and strategic road network. During the construction phase, traffic from construction vehicles will be generated. Once the proposed development is complete and in operation, there will be trips generated by the proposed mix of uses.

Baseline Conditions

5.83 The application site is currently occupied by the DSTL and QinetiQ. At its peak during the 1970s, at least 4,000 people were employed on site. Since DSTL announced its planned relocation from the site to Portsdown West and Porton Down in June 2011 there has been a gradual reduction in the number of DSTL staff located at the site.

5.84 The 2015 planning application was supported by a Transport Assessment (TA) which set out the expected transport impacts that would arise from the proposed redevelopment of the application site as an employment led, mixed use development. The TA, including the access strategy underlying it, was agreed with the Highway Authority, Kent Councty Council (KCC). This anticipated that the application site would be accessed via the two existing points of access, with the access onto the A224 Polhill providing the main vehicular access but with the existing access onto Star Hill remaining as an important secondary access. However, through a Planning Condition, it was determined that the use of this secondary access should be restricted to buses, cycles and pedestrians and as an emergency point of access.

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5.85 As part of the access strategy, improvements to the two existing application site access junctions were agreed with KCC. These included the provison of a new roundabout at the junction of the A224 Polhill/Otford Lane/Crow Drive as well as the provison of an enhanced priority junction at Star Hill. A package of measures to manage the speed of traffic on Star Hill was also agreed with KCC. The access strategy also identfied proposed enhancements to public transport, including the provison of a community bus service, and enhancements to pedestrian/cycle networks.

5.86 The application was also supported by a Framework Travel Plan and a Framework Construction Management Plan.

Key Issues and Requirement for Assessment

5.87 The proposed additional residential development will generate additional travel demand including additional traffic movements. There will also be additional construction traffic generated. It has therefore been agreed with KCC that a further TA will need to be undertaken to assess the net impacts arising from this additional development as compared with the 2015 consented scheme. A Scoping Study for the TA has been submitted to the Highway Authority (KCC) to formally agree the content of the new assessment. Any comments from the highways authorities will be given due consideration as part of the TA works.

5.88 The assessment will be informed by a comprehensive site audit, the aim of which will be to gather baseline information, observe traffic movements at critical local junctions and verify modelling outputs.

5.89 Development trip rates will be agreed with the Highway Authority (KCC). The traffic flows on the local highway network generated by the proposed development during the weekday AM and PM peak hour periods will be determined through traffic modelling. These flows will then be used to establish the peak hour traffic impact of the proposed development.

5.90 The junctions required to be assessed within the TA will be agreed with KCC during the pre-application process. These junctions will then be assessed for future operation and capacity. The results of these assessments will inform the need for any off-site highway mitigation measures.

5.91 The assessment would include an evaluation of the traffic generated by all pertinent consented developments in the vicinity of the application site, which will be confirmed through the scoping process. Traffic growth for the future year assessment will be determined using TEMPro v.7.2. This would ensure that the EIA appropriately evaluates the cumulative future impacts of the proposed development in conjunction with other potential schemes.

5.92 Initial discussions with KCC has indicated that a key issue that must be addressed within the TA is the need for the existing secondary access onto Star Hill to be retained and available as an access for all traffic, not limited to buses, cycles, pedestrians and as an emergency access as currently conditioned by the 2015 permission.

5.93 In accordance with the local authorities' application requirements, it will be agreed whether the TA will form a stand-alone document with relevant environmental assessment data forming a technical appendix within Volume III of the ES or be appended in its entirety to the ES to avoid considerable duplication.

5.94 As advised by PPG on Travel Plans, Transport Assessments and Statements, the TA will be accompanied by a Framework Travel Plan (TP) for the proposals. The Framework TP will be

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prepared to increase awareness of the potential for travel by more environmentally-friendly modes available to future residents, employees and visitors to the application site. The TP will introduce a package of physical and management measures that will assist travel by sustainable modes and reduce private car mileage.

Assessment Methodology

5.95 The aim of the assessment will be to identify, as far as reasonably possible, the nature of the transport changes within the area of the proposed development, to assess significance and to make appropriate recommendations. The assessment will include consideration of traffic impacts during construction as well as impacts during the operation of the proposed development.

5.96 For the purposes of the ES chapter, the Institute of Environmental Assessment (IEA) guidelines recommend that the environmental effects listed in Table 2.1 of the guidance be considered important when considering traffic from an individual development. These effects include:

- Noise;
- Vibration;
- Visual Impact;
- Severance;
- Driver Delay;
- Pedestrian Delay;
- Pedestrian Amenity;
- Accidents and Safety;
- Hazardous Loads;
- Air Pollution;
- Dust and Dirt;
- Ecological Impact; and
- Heritage and Conservation

5.97 Of these effects, several are considered in chapters elsewhere within the ES due to the specialist skills required; namely noise, vibration, visual impact, air pollution, dust and dirt, ecological effects, and, heritage and conservation. It is also considered that the proposed development will not involve hazardous loads and as such this potential effect will not be considered.

5.98 The study area of the transport-related elements of the ES will be determined in accordance with the recommendation of the "Guidelines for Environmental Assessment of Road Traffic" that "a 30% change in traffic flows (or heavy vehicles) represents a reasonable threshold for including a highway link within the assessment".

5.99 The sensitive receptors will be determined with reference to the criteria set out within the same document and will be identified within the course of the assessment.

5.100 The mitigation measures necessary to ensure that the potential transport effects of the proposed development remain within acceptable parameters will be determined with respect to the assessment of the predicted operation of the transport network - including

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travel demand management measures, as well as potential improvements to the pedestrian and cycle network, public transport services and facilities, as well as highway junctions and links.

5.101 The ES chapter will reflect the findings of the TA, whilst assigning levels of significance to the perceived effects. The chapter will set out the requisite mitigation measures and the residual effects once these are incorporated into the proposals.

Cumulative Effects

5.102 A separate cumulative effects chapter will be presented at Chapter 16. This will assess the cumulative impacts of the proposed development in conjunction with any committed developments within the vicinity of the application site if any such schemes are subsequently identified.

5.103 However, it should be noted that the assessment methodology incorporated into the TA also inherently takes account of cumulative impacts by adding in the impacts of identified committed development and through the application of the TEMPro factors in order to derive future baseline traffic flows.

AIR QUALITY

Context

5.104 The proposed development has the potential to affect local air quality, primarily through traffic generation during both the construction and operational phases of the development and fugitive dust emissions generated during the construction phase. In addition, any energy centre associated with the proposals, for example Combined Heat and Power (CHP) plant, also has the potential to cause local air quality impacts.

Baseline Conditions

5.105 As required by the Environment Act (1995) [24], the local authority have undertaken a Review and Assessment of air quality within their administrative area. The closest designated Air Quality Management Area (AQMA) to the application site is an area following the M25 throughout the District extending 200m either side of the motorway centreline between J5 and 6, 80m between J3 and 5 and 140m between J2 and 3 declared for annual mean NO_2 and 24-hour mean PM_{10}.

5.106 The application site is not located within an AQMA, on the basis that PM_{10} and NO_2 concentrations are not considered likely to exceed the national Air Quality Objectives (AQOs).

Air Quality Monitoring

5.107 The local authority operates an air quality monitoring network throughout their administrative area.

5.108 SDC utilises both automatic analysers and passive diffusion tubes to monitor NO_2 concentrations throughout the District. A review of the most recent available Local AQM Annual Status Report (ASR) indicates that there are two diffusion tubes located within 3km of the application site. The most recent available results are shown in Table 8.

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Table 8

Annual Mean NO_2 Diffusion Tube Monitoring Results

LOCATION		TYPE	NATIONAL GRID REFERENCE		ANNUAL MEAN NO_2 CONCENTRATION ($\mu G/M^3$)		
			X	Y	2014	2015	2016
DT54	57 London Road	Roadside	551216	157011	33.9	28.0	34.1
DT43	Miners Arms	Roadside	551279	156864	36.8	33.9	28.0

Source: SDC 2017 Air Quality Annual Status Report

5.109 As indicated in Table 8, the annual mean AQO for NO_2 is not exceeded at both the 57 London Road, and the Miners Arms diffusion tube monitoring locations.

5.110 In addition to the above, Waterman has previously undertaken a six month NO_2 diffusion tube monitoring exercise in the vicinity of the application site between July 2014 and January 2015.

Background Pollutant Concentrations

5.111 DEFRA [25] has estimated background concentrations of NO_2, PM_{10}, and $PM_{2.5}$ for 2017. The background pollutant concentrations within the 1km x 1km grid square (NGR) that the site traverses (549500, 159500) are set out in Table 9.

5.112 As shown in Table 9, background concentrations do not exceed the relevant national AQOs which are currently set at 40$\mu g/m^3$ for both NO_2 and PM_{10} and 25$\mu g/m^3$ for $PM_{2.5}$.

Table 9

Predicted Background Pollutant Concentrations

POLLUTANT	2017 ESTIMATED BACKGROUND CONCENTRATION ($\mu G/M^3$)
NO_x	14.4
NO_2	10.8
PM_{10}	13.1
$PM_{2.5}$	8.8

Source: DEFRA [25]

5.113 It should be noted that the proposed development, through increased traffic flows, has the potential for increases in pollutant concentrations that would result in a significant impact on local air quality. However, the 2015 ES identified that the previous scheme would result in only small increases in pollutant concentrations and the overall effect of the previous scheme on local air quality was considered to be insignificant.

Key Issues and Requirement for Assessment

5.114 The following potential impacts have been identified as likely to occur during the construction and operational phases of the proposed development:

- fugitive dust emissions and exhaust generated by on-site plant and road traffic during the construction phase;
- exposure of future occupants to any existing air quality issues;
- impacts on sensitive receptors from road vehicle exhaust emissions due to additional traffic generated by the proposed development; and

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- impacts on sensitive receptors due to emissions from any proposed energy centre associated with the proposals.

Proposed Assessment Methodology

Construction Phase

5.115 Fugitive dust emissions associated with demolition, earthworks, construction and track out activities on the site will be qualitatively assessed in accordance with the Institute of Air Quality Management (IAQM) methodology '*Guidance on the Assessment of Dust from Demolition and Construction*' [26].

5.116 Impacts during construction are anticipated to be temporary and short-term and can be minimised by undertaking works in accordance with an agreed Construction Environmental Management Plan (CEMP), which can be secured by way of a suitably worded planning condition. All recommended good practice mitigation measures and control techniques will be listed within *Chapter 5: Construction Strategy & Programme* of the main ES volume. Such measures will include: the covering/damping down of stockpiles; site speed limits; appropriate maintenance of plant; not allowing idling vehicles. Construction of the proposed development is therefore considered unlikely to result in significant air quality effects.

Operational Phase

5.117 To assess the exposure of future occupants to any existing air quality issues, pollutant concentrations will be predicted across the application site for the proposed development's opening year using the ADMS Roads dispersion model. Results will be verified using the site specific air quality monitoring data and will be compared against the AQOs. The results of the dispersion modelling assessment will be utilised to determine areas of potential AQO exceedances on the site and inform any mitigation strategy necessary to limit future exposure.

5.118 Road vehicle impacts as a result of the proposals will be predicted for the anticipated future opening year by calculating NO_2, PM_{10} and $PM_{2.5}$ levels at relevant sensitive receptors without and with the development using the ADMS-Roads dispersion model. The results of the assessment will be compared against the relevant AQOs to determine the potential for exceedances. The magnitude of change in pollution levels will also be compared with the significance criteria provided in the Environmental Protection UK (EPUK) and IAQM guidance 'Land-Use Planning and Development Control: Planning for Air Quality' [27]. This will provide an indication of the potential for air quality effects at sensitive locations as a result of emissions. The advice provided within the DEFRA document 'Local Air Quality Management Technical Guidance LAQM (TG16)' [28] and the requirements of the NPPF will be considered throughout the project.

5.119 The ADMS 5 dispersion model will be used to predict both on-site and off-site air quality effects from any proposed energy centre. Modelling will be undertaken using the same year of meteorological data as the road modelling, with results compared against the relevant AQOs, and (in the case of ecological receptors), Environmental Assessment Levels (EALs). Building geometries will be included for all structures within the proposed development. Predicted concentrations will be added to existing pollution levels, as defined during the baseline and road vehicle exhaust emissions assessment, to provide cumulative values and compared against the relevant AQOs/EALs in order to identify any areas of potential concern.

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5.120 Road vehicle and energy plant emissions may also impact upon ecological receptors in the vicinity of the application site. The potential impacts of nitrogen dioxide concentrations, acid and nitrogen deposition on these areas will be considered within both the Biodiversity and Air Quality chapters of the ES.

NOISE AND VIBRATION

Context

5.121 The proposed development has the potential to increase noise at receptors on and in the vicinity of the application site during the construction phase (noise associated with construction traffic, plant and machinery) and operational phase (noise associated with an increase in road traffic, proposed fixed plant, and the employment/commercial activity of site users, site hoarding etc).

5.122 Noise is a general term that is used to characterise unwanted sound. Loudness is related to both sound pressure and frequency, both of which can be measured. The response of the human ear is not constant over all frequencies and it is therefore usual to weight measured frequencies to the approximate human response using the 'A' weighted decibel (dB(A)). When related to a change in noise, a change of 10 dB(A) would represent a doubling or halving of loudness, whilst a change of 3 dB(A) is considered to be just perceptible [29].

5.123 Noise sensitive receptors will include noise sensitive premises, such as residential dwellings, but may also include noise sensitive areas of special interest such as habitats for protected species or other wildlife.

Baseline Conditions

5.124 The most recent full weekday and weekend Background Noise Survey was undertaken in 2014 by Waterman to quantify noise levels at the closest receptors to the proposed development. The results indicated that the main sources of noise emanated from the local road network (intermittent) and from the M25. The measured noise levels were commensurate with a good level of residential amenity. Whilst this survey data is considered likely to still represent the prevailing noise environment, to ensure that the most recent noise baseline is understood, a further noise measurement study across the site will be undertaken by Hydrock Consultants. An extensive survey comprising short-term and long-term measurement locations will measure existing noise levels at sensitive receptors within, and in proximity to the application site. Survey locations and the subsequent assessment methodology will be agreed with the relevant local authority technical officers.

5.125 The noise assessment will be undertaken by Hydrock Consultants, all consultants hold either associate membership or membership to the Institute of Acoustics and are considered competent in their execution and knowledge of undertaking noise and vibration assessments.

5.126 Baseline noise measurements will be used to develop an acoustic model of the application site and surroundings using CadnaA software, OS contour mapping, geosatellite imaging and measured noise levels in order to determine the existing noise climate of the site. The noise model will be used in part to quantify the impact of the development phases on nearby noise sensitive receptors.

5.127 The application site is situated in a comparatively rural location at distance from major transportation, industrial and commercial noise sources. It is expected that the baseline noise survey will demonstrate relatively low noise levels across the application site. Where

the site extends towards the east and south, and closer to major transportation noise sources (e.g., the M25), it is expected that noise levels will rise albeit insignificantly.

5.128 Accordingly, it is considered likely that the proposed development on balance, will have an insignificant effect upon the surrounding area in relation to existing noise levels.

Key Issues and Requirements for Assessment

5.129 The proposed development has the potential for noise effects on existing receptors including:

- Noise and vibration during demolition and construction works including plant and machinery, and construction traffic affecting existing receptors surrounding the site;
- Noise and vibration from existing sources impacting receptors in the new development, particularly road traffic and commercial noise (e.g., QinetiQ activities and commercial premises noise); and
- Noise from proposed commercial mechanical plant, such as air-conditioning plant, and HGV movements associated with the new development impacting existing and new receptors.

5.130 By virtue of the nature of construction activities, noise will be generated during the construction phase. However, with the implementation of mitigation measures, which will be detailed in the CEMP, and adherence to good practice guidance as outlined in British Standard (BS) 5228 Part 1 [30], significant impacts through construction noise and vibration on existing local residents and future residents in earlier development phases are not anticipated. Measures that will be put in place include for example, controlled working hours for noisy activities, localised acoustic mitigation and the use of modern equipment and machinery.

5.131 A previous scoping exercise undertaken by Waterman for the application site identified that sources of vibration in the area are considered to be low and, as such, environmental vibration impacts on existing and potential receptors are not anticipated to be significant. Vibration and a vibration impact assessment was scoped out of the previous EIA assessment. Given that no new significant sources of vibration are anticipated or located on or adjacent to the application site, it is considered that vibration can be scoped out of this current EIA.

5.132 The implementation of standard mitigation measures such as effective silencing measures of noise sources (e.g., façade sound insulation specifications for new residential dwellings) and appropriate acoustic design/specification of fixed plant will be considered, where necessary and appropriate. Mitigation measures shall be indicatively provided to demonstrate that relevant assessment standards and guidance noise levels will be achieved.

5.133 Due to the classified nature of QinetiQ operations on site (e.g., trace material controlled explosions and associated noise) it is unlikely that source noise measurements can be undertaken. It shall be agreed with the Local Authority how these operations will be assessed in determining the likely impact to noise sensitive receptors. It is considered that the short duration, frequency and noise levels from these noise events will be assessed as being insignificant.

Assessment Methodology

5.134 Construction noise at key receptors will be predicted in line with British Standard (BS) 5228: *Noise and Vibration Control on Construction and Open Sites* [30], which provides industry

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accepted guidance on calculating noise and vibration arising from selected construction activities and the use of different plant. The previous findings of the Noise and Vibration ES Chapter concluded that the likely impact of construction traffic noise is insignificant. The level of significance of noise affecting noise sensitive receptors from construction ranged between insignificant and short-term, local, adverse of minor significance (with implemented mitigation measures).

5.135 An assessment of the suitability of the site for residential land uses will be undertaken. It is proposed to assess internal and external noise levels at noise sensitive locations against noise level criteria specified in BS 8233:2014 [31], Pro PG Guidance [32], World Health Organisation (WHO) Guidelines [33] and to assess vibration against BS 6472:2008 [34] and the levels advised by the local authorities.

5.136 Noise associated with fixed plant will be assessed in accordance with BS 4142:2014 [35]. The standard details a method for rating mechanical plant noise levels at noise-sensitive receptors affected by noise from fixed plant at proposed developments. Based on the background noise survey data, maximum plant emission levels will be set for existing and future noise sensitive receptors at 1 metre from the façade of potential affected premises. Noise emission criteria from plant will be used in the detailed development stages. It is considered that with appropriate design and mitigation, noise from building services plant would be insignificant. It is considered that through the use of appropriate design and distance seperation between business/commercial and industrial uses to noise sensitive receptors, there would be insignifcant impact arising from noise break out.

5.137 Any change in road traffic noise levels, at a selection of relevant receptors, will be assessed using the standard methodology outlined in the Calculation of Road Traffic Noise (CRTN) [36]. The assessments will utilise baseline and 'with development' traffic data provided by Peter Brett Associates in the format of 18-hour annual average weekday flows (AAWT), % HGV and average speed. Road traffic noise levels will be assessed based on a range of relevant guidance including the 'Design Manual for Roads and Bridges: 2011' [37]. The significance of the impact on noise sensitive receptors due to changes in road traffic associated to the development is expected to be insignificant.

5.138 Assessment of the impact of the proposed development on the noise sensitive receptors will be undertaken in accordance with, but not limited to, the assessment methodologies below:

- Noise Policy Statement for England (NPSFE) [38];
- The National Planning Policy Framework (NPPF) [39];
- Planning Practice Guidance - Noise (PPG) [1];
- Local Authority Planning Policy;
- BS 7445-1: 2003 Description and measurement of environmental noise - Part 1: Guide to quantities and procedures [40];
- BS 4142:2014 Method for rating and assessing industrial and commercial sound [35];
- BS 8233:2014 Sound insulation and noise reduction for buildings [31];
- BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites. Vibration [41];
- BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites. Noise [30];
- BS 6472-1:2008 Guide to evaluation of human exposure to vibration in buildings [34];

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- Design Manual for Roads and Bridges, Volume 11 Section 3 Environmental assessment techniques, Part 7 DMRB Revision 1, Noise and Vibration, 2011 [37];
- World Health Organisation Guidelines for Community Noise 1999 [33]; and
- Calculation of Road Traffic Noise, DoT, 1988 [36].

WATER RESOURCES AND FLOOD RISK

Context

5.139 The proposed development will include new buildings and roads, which if unmitigated could: effect flood risk both within and outside the application site; increase surface water run-off and foul water discharge from the application site; and, increase the demand for potable water.

5.140 For the purposes of this scoping report, flood risk is considered in the context of the following:

- Fluvial & tidal;
- Surface water (pluvial);
- Groundwater; and
- Infrastructure failure (i.e. sewer flooding).

Baseline Conditions

5.141 There are no surface water features present within the application site, with the nearest watercourses being the River Darent and Twitton Brook (tributary of the River Darent) located approximately 1.5km and 1.1km to the east of the site, respectively. The application site is located on a chalk escarpment ridge and is thereby significantly elevated above any surrounding surface water features.

5.142 Reference to the EA's Flood Map for Planning [42] indicates that the application site is located outside a designated floodplain, within Flood Zone 1, whereby the annual probability of fluvial / tidal flooding is less than 0.1% (or 1 in 1,000), i.e. the risk of flooding from tidal and/or fluvial sources is considered to be low.

5.143 Interrogation of the EA's Flood Risk from Surface Water mapping [43] indicates that the majority of the application site is classified as being at 'very low' risk from surface water flooding. However, there are some small, localised areas of 'low', 'medium' and 'high' risk surface water ponding mainly within the north of the site.

5.144 The application site is underlain by a layer of clay estimated to be between circa 0m and 12m in thickness. Upper, middle and lower chalk formations, classified as Principal Aquifers, are located beneath the clay. Due to the impermeable nature of clay, it is likely to act as an aquiclude and prevent groundwater from the aquifer from rising to the surface.

5.145 KCC's Preliminary Flood Risk Assessment (PFRA) [44] indicates that the application site is located in a 'negligible' groundwater flood risk area. Furthermore, groundwater has not been encountered at the site during previous Site Investigations. Mapping contained within KCC's Surface Water Management Plan (SWMP) [45] shows that no groundwater flooding has occurred at or in the vicinity of the site, with the closest recorded incident being approximately 4.6km to the southeast of the site where ground levels are much lower. The

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risk of groundwater flooding to the proposed development is therefore considered to be low.

5.146 The application site is not located within a Source Protection Zone (SPZ) and therefore surface water run-off from the proposed development could be discharged to ground with minimal risk of contamination to the public drinking water supply.

5.147 According to Thames Water and KCC's SWMP [45], the majority of the site falls within a postcode area that has been subject to between one and three occurrences of sewer flooding. The southeastern area of the site is shown to be in a postcode that has had seven to eight recorded incidents of sewer flooding. However, previous consultation with Thames Water has confirmed that there is no public sewerage infrastructure present on site and therefore these recorded flood events are assummed to have occurred at locations outside the site boundary. The risk of flooding to the site from surcharged sewers is therefore considered to be low.

5.148 Reference to the EA's Flood Risk from Reservoirs mapping [46] indicates that the site will not be subject to flooding as a result of reservoir failure in the area. There are no other significant artificial bodies of water within close proximity to the site and the risk of flooding from infrastructure failure is therefore considered low.

5.149 Currently, surface water run-off from the site either infiltrates into the subsoil via shallow soakaways or is discharged into the surrounding woodland via private drainage systems.

5.150 The site is currently served by a private foul sewer network, whereby foul water is discharged to the Thames Water sewer system along Polhill Road.

5.151 Between 2001 and 2011, water consumption at the site has fluctuated between approximately 255,000m^3 and 144,000m^3. In 2011, the latest year for which data is available, estimated water consumption was in the order of around 146,000m^3. It should be noted that the higher water consumption volume reflected an increased occupancy at the site.

Key Issues and Requirements for Assessment

5.152 With reference to a previous ES Chapter prepared for the site in 2015 for a similar scheme – that assessment identified that the low risk of flooding identified at the site meant that the proposed development of the site would have no significant potential effects on flood risk, either within or outside the site. Given that the baseline conditions have not subsequently altered, it is therefore proposed that the consideration of flood risk be 'scoped-out' of this current assessment.

5.153 However, the following key issues were identified by the previous ES Chapter as being potentially affected by the proposed development of the site, and are therefore proposed as needing to be assessed as part of this ES Chapter:

- Surface water drainage;
- Foul water drainage; and
- Potable water demand.

Assessment Methodology

5.154 The study area for this assessment will principally comprise the application site, but will extend to the relevant natural and man-made water resource catchments where necessary.

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5.155 The assessment will be supported and informed through consultations with various stakeholders, including the EA, KCC (in its role as the Lead Local Flood Authority) and Thames Water.

5.156 The ES chapter will cross-refer to a Flood Risk Assessment report and a proposed Surface and Foul Water Drainage Strategy, which will be appended to the ES, and the following key area-specific background reports:

- SDC's Strategic Flood Risk Assessment (SFRA);
- KCC's PFRA;
- KCC's SWMP; and
- Thames Water's 'Water Resources Management Plan'.

5.157 The assessment will also be undertaken in accordance with relevant national and local surface water / flood risk planning and legislative policy, specifically:

- EA's 'FRA Guidance Note 1' [47];
- EA's 'Flood Risk Assessments: Climate Change Allowances' [48];
- Ministry of Housing, Communities & Local Government's 'National Planning Policy Framework' and accompanying 'Planning Practice Guidance'.

5.158 The significance of potential effects arising from the proposed development will be established through a combination of the identification of receptor sensitivity and assessment of the magnitude of potential effects. Assessment thresholds will be confirmed within the ES chapter.

5.159 It is anticipated that the assessment will consider the demolition, construction and operational stages of the proposed development over the lifetime of the proposed scheme, i.e. taking account of the potential influence of climate change on the receptors under consideration.

GROUND CONDITIONS

Context

5.160 The ground conditions assessment will address issues relating to existing geoenvironmental conditions at the application site, with the aim of ensuring that suitable and safe conditions are achieved for the proposed end-use (commercial / residential / open space). Consideration will be given to the site's conceptual model including geology, hydrology, hydrogeology and the geoenvironmental conditions (including issues associated with soil gases and historic and current potential impact to site sols and controlled waters). A range of impacts associated with the design, construction and operation of the proposed development will be considered.

Baseline Conditions

5.161 A review of published mapping has shown that Fort Halstead was constructed as part of the late 19th Century London Mobilisation Centres, which was abandoned in 1906. During World War I, the fort was used to store ammunition and in 1915 the first laboratory was built. By 1942, Fort Halstead was occupied by the Armament Design Establishment and the Armament Research Establishment, which later merged to become the Royal Armament Research and Design Establishment.

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5.162 The current occupiers are QinetiQ and DSTL, which provide research into weapon systems, propellants, explosives and other military operations. Due to relocation of DSTL, operations have been scaled back in recent years leaving a number of buildings no longer in operation. Several building have already been decommissioned and demolished.

5.163 The available geological sources indicate the site to be underlain by Clay-with-Flints overlying the West Melbury Marly Chalk Formation. Made Ground is anticipated across the site. The Clay-with-Flints is classified by the Environment Agency as unproductive strata. The West Melbury Marly Chalk Formation is classified as a Principal Aquifer.

5.164 The site is not within a groundwater source protection zone (SPZ) and there are no groundwater abstractions recorded within 1km. Groundwater is anticipated at depths greater than 90m bgl (below ground level). The nearest surface water feature is greater than 1km away.

Key Issues and Requirement for Assessment

5.165 Recent site investigation works (2016) have broadly demonstrated reduced levels of contaminants in comparison to historic data (2001 / 2005). Significant widespread contamination has not been encountered. Localised exceedances over generic assessment criteria have been identified, however it is considered that these can be addressed by industry standard remedial techniques.

5.166 Consequently, the application site is considered to be a low risk based on the end use parameter plans and following implementation of the recommended mitigation measures.

5.167 Based on the available data, a summary of the identified potential risks are provided below:

Human Health

- Residential: Made Ground within the existing waste compound is a source of lead, polyaromatic hydrocarbons (PAH) and petroleum hydrocarbons.
- Village Green: Made Ground in the vicinity of building Q4 is a source of PAH.
- Green Infrastructure: Made Ground within the existing waste compound is a source of petroleum hydrocarbons.
- Scheduled Monument: Made Ground is a source of Nickel, PAH and petroleum hydrocarbons.
- Site Wide: Asbestos has been encountered in Made Ground at various locations across the site.

Plant Growth

- No significant risk identified.

Controlled Waters

- No significant risk identified.

Ground Gases or Vapours

- No significant risk identified.

Radon

- The site is not in a Radon Affected Area.

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5.168 Potential effects from below ground contamination will be addressed through the agreement of a remediation strategy with the local authority which will detail the mitigation measures. These may include the following:

- Residential: The recent chemical data suggests concentrations of copper, nickel, PAH and petroleum hydrocarbons are lower in value and number than those reported historically. Further site investigation should substantiate this finding and permit targeted mitigation solutions during detailed design. It is anticipated that where required, mitigation will entail the use of a clean cover capping solution in areas of gardens and landscaping.
- Village Green: The recent chemical data suggests concentrations of PAH within Made Ground are lower in value and number than those reported historically within the vicinity of building Q4. Further site investigation should substantiate this finding and permit targeted mitigation solutions during detailed design. It is anticipated that where required, mitigation will entail the use of a clean cover capping solution in areas of gardens and landscaping.
- Green Infrastructure: Soils within the waste compound area containing elevated hydrocarbons can be remediated via proven techniques or possible further more detailed risk assessment. Suitable material can be reused where appropriate under the terms of a Materials Management Plan.
- Scheduled Monument: Investigations within the scheduled monument was not possible within the current phase of works. Consequently, due to low sample numbers within historical investigations, it is recommended further site investigation and validation sampling be undertaken during detailed design to quantify the existing level of nickel, PAH and petroleum hydrocarbons identified historically. If mitigation is necessary following this, this can be achieved through industry proven techniques. Consent from Heritage England will be required for works in this area.
- Site Wide: Asbestos has been identified within the Made Ground and shallow natural soils at a number of locations across the site. Further site investigation comprising validation sampling and gravimetric analyses to refine the extent to which asbestos fibres are present is required as part of detailed design. Following this, a detailed risk assessment should be undertaken and an appropriate targeted mitigation solution designed. This is likely to entail removal of identifiable asbestos fragments and use of a clean cover capping solution in areas of gardens and landscaping.
- Utilities: Utilities should be placed within clean service corridors. Barrier pipe is considered necessary given the contaminants identified and history of the site.
- Management of areas of former explosive areas and depleted uranium should be supervised as a precautionary measure during groundworks.
- Regulatory agreement should be sought on the works and associated documents.

5.169 Mitigation measures relating to the use of appropriate PPE will be listed within *Chapter 5: Construction Strategy & Programme* of the main ES volume.

Assessment Methodology

5.170 The desk-top contamination assessment will be undertaken in accordance with the following guidance: Department for Environment, Food and Rural Affairs (DEFRA) 'Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance' (2012) [49].

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5.171 The following activities will be undertaken to inform the environmental assessment:

- Site reconnaissance by an environmental consultant;
- Review of historic data for the site and surroundings, including historic Ordnance Survey (OS) maps of the area;
- Review of site geology, hydrogeology and hydrology from geological and groundwater vulnerability map;
- Review of licenses, discharge consents, pollution incidents and waste facilities on and in the vicinity of the site;
- Review of information submitted to the local planning authorities for previous developments at the site relating to contaminated land, including confirmation of the discharge of relevant conditions, where applied;
- Review of data from any previous site investigations;
- Completion of additional intrusive ground investigation works where permitted;
- Correspondence and/or discussions with the Regulatory Authorities;
- Based on the above information, the production of a Generic Quantitative Environmental Risk Assessment (GQRA) which will include consideration of potential impacts to future site users, buildings, structures and local groundwater and surface water resources; and
- Recommendation of appropriate mitigation measures which will be detailed in the submitted remediation strategy and secured by way of suitably worded planning condition.

6.0 SCOPED DOWN TOPICS

BURIED HERITAGE – ARCHAEOLOGY

Context

6.1 This chapter provides a broad assessment of potential impacts that the proposed development may have on the archaeological resource within the application site at Fort Halstead and its wider study area in order to determine the need and scope for further assessment as part of an Environmental Impact Assessment (EIA).

6.2 Built heritage elements, including upstanding buildings and / or structures and Conservation Areas, are previously covered in the section Cultural Heritage – Built Heritage at page 37 of the Scoping Report and shall not be discussed here.

6.3 An Environmental Statement (ES) was previously produced by Waterman in 2015. Chapter 8: Buried Heritage (Archaeology) covered buried archaeology and was supported by a Buried Heritage Desk-Based Assessment. These documents have been used to inform this chapter, together with an updated review of Historic Environment assets.

Baseline Conditions

6.4 The current baseline has been compiled using existing understanding of the application site, previously produced reports (including the 2015 desk-based assessment and ES), and available online resources including:

- Historic England's database on *The National Heritage List for England* (NHLE) [50]; and
- Heritage Gateway [51].

The following heritage assets have been considered as part of this chapter:

- World Heritage Sites;
- Scheduled Monuments;
- Registered Parks and Gardens;
- Registered Battlefields;
- Known archaeological sites and areas of archaeological interest or potential; and
- Findspots.

6.5 A study area of 2km surrounding the application site has been employed in line with previous consultation in 2015 with the Kent County Council Heritage Conservation Group.

6.6 There are no World Heritage Sites or Registered Battlefields within the application site or study area.

6.7 The scheduled fort of Fort Halstead [NHLE 1004214] is located within the south-eastern boundary of the application site. The fort was orignally built between 1895 and 1897 as part of a group of fortifications designed to defend London from possible invasion by the Triple Alliance (Germany, Austria-Hungary and Italy). The monument comprises of a polygonal assembly point and store together with a concrete revetted moat. Vaulted barracks can be noted on the western side of the interior and a magazine is located to the eastern side.

6.8 The Grade II* listed Chevening Registered Park and Garden [NHLE 1000258] is located approximately 0.5km south-west of the application site and partially lies within the south-

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eastern of the Study area. The asset comprises gardens, pleasure grounds and a park surrounding seventeenth century Chevening House.

6.9 There are a further 113 non-designated heritage assets (including known archaeological sites and findspots) present within the Study area according to the 2015 reports.

Key Issues and Requirement for Assessment

6.10 The proposed development is unlikely to have a direct physical impact upon the scheduled fort or the Registered Park and Garden.

6.11 Any buried archaeology predating the fort's construction, associated with its use or subsequent military developments within the application site is also likely to be heavily truncated by subsequent 20th century development and only survive within limited 'pockets' between existing structures.

6.12 Based on this scoping exercise, it is considered that archaeology is scoped out of the Environmental Statement and considered under the standard planning framework. In this regard it is recommended that an updated review of designated and non-designated archaeological assets be undertaken at the next stage and presented in an updated archaeological desk-based assessment (DBA). The DBA should consider the depth and extent of existing and previous development. This will be achieved by undertaking a review using available geotechnical data, borehole logs and historic maps. The purpose of this will be to confirm the potential survival of previously unknown archaeological remains and create zones of the application site to clearly define those areas where potential archaeological remains may have been truncated or removed and those where archaeological remains may survive in order to develop a mitigation strategy, as appropriate.

Assessment Methodology

6.13 The DBA shall identify likely impacts of the proposed development on archaeological assets and make recommendations for further investigation or mitigation, as appropriate. It will

6.14 Guidance from the following sources shall be considered in the production of the DBA:

- The Chartered Institute for Archaeologists (CIfA), 2014 (rev 2017). '*Standard and Guidance for Desk-Based Assessment*';
- Historic England, 2008. Conservation Principles, Policies and Guidance;
- Historic England, 2017. *Historic Environment Good Practice Advice in Planning Note 3 (2nd Edition) (GPA 3) – The Setting of Heritage Assets*; and
- Historic England, 2015. *Historic Environment Good Practice Advice in Planning Note 2 - Managing Significance in Decision-Taking in the Historic Environment*.

6.15 Furthermore, the the DBA shall be supported by the following data and sources:

- The National Heritage List for England (NHLE);
- The KCC Historic Environment Record;
- National heritage datasets including images of England, Archaeological Data Service (ADS), OASIS, Pastscape, Viewfinder, National Record of the Historic Environment (NHRE), and Parks and Gardens UK;

SCOPED DOWN TOPICS

- The application site itself, which will be subject to a walk-over inspection to verify the current site conditions and identify any non-designated assets which may be present.

6.16 Consultation with the relevant heritage advisor at KCCHCG and Historic England (in regard to the Scheduled Monument) shall be undertaken. Consultation will seek to guide appropriate assessment needs and identify any requirement for field investigations to inform a mitigation strategy, as appropriate.

CLIMATE CHANGE & GREENHOUSE GAS EMISSIONS

Climate Change & Greenhouse Gas Emissions

6.17 To reflect requirements of the Environmental Impact Assessment Directive (2014/52/EU) [52], as transposed into the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 [2], and supporting guidance published by IEMA, the following assessments will be undertaken:

- Climate change adaptation, including an in-combination and climate change resilience assessment. The combined potential effects of climate and the proposed development on the resilience of the surrounding environment to the predicted impacts of climate change and the resilience of the proposed development to the changing climate; and
- Climate change mitigation, i.e. Greenhouse Gas (GHG) impact assessment: The potential effects of the proposed development on climate (i.e. GHG emissions), including the extent to which it may affect the ability of the UK Government to meet its carbon reduction plan targets.

Climate Change Adaptation

6.18 Where climate change is relevant to a technical assessment this will be stated and taken into account within the respective ES chapter.

6.19 As an example, the *Water Resources & Flood Risk* chapter of the main ES volume will consider predicted changes in the baseline environmental climatic conditions (such as rainfall) and how the design will take into account the future flood risk and resilience of the proposals to extreme weather events.

6.20 If climate change does not affect the assessment of the technical discipline, this will be stated.

6.21 It is proposed that climate change adaptation for the proposed development is then summarised as a separate technical brief, provided within the technical appendices.

6.22 A summary of key climate change projections within the UK and modelled climate variables specific to the application site will be considered. In addition to technical topic specific information.

6.23 Where relevant, the following will be considered within the context of the outlined climate change projections:

- The vulnerability of the baseline environment to projected changes;
- The vulnerability of the proposed development to climate change; and
- The effect of the proposed development within the context of climate change.

SCOPED DOWN TOPICS

6.24 Climate change adaptation measures will be taken into account during the design evolution of the proposed development with such considerations addressed within the design where relevant and feasible.

Climate Change Mitigation (Greenhouse Gas Emissions)

6.25 Due to the hybrid nature of the planning application, whilst broad material categories may be available, not all material specifications and volumes will be known in sufficient detail at this stage to enable an appropriately accurate quantitative GHG assessment. As such a full quantitative study across the project life cycle is not feasible, and therefore a qualitative discussion of the likely GHG emissions and effects associated with the proposed development is proposed.

HUMAN HEALTH

6.26 Many technical chapters/reports already address the potential implications of their topics on human health by virtue of set target values or objectives (e.g. socio-economics, transport and access, air quality and noise) based on human health tolerances or through the consideration of policy requirements and targets promoting healthier behaviours (e.g. active travel such as cycling and walking).

6.27 Indirect human health effects will be considered comprehensively in the EIA where their assessment is identified as being proportionate and/or potentially requiring mitigation. For example, with regard to air quality and noise, the limit values are informed by guidelines set by the World Health Organisation (WHO) and therefore, the WHO Air quality and Noise guidelines would be referenced with regard to the potential impacts on human health.

6.28 Where relevant, the potential for impacts on human health will be stated within each ES chapter/report including how the respective technical assessments takes these factors into consideration. Relevant literature or studies, which draw upon the human health outcomes anticipated as a result of the use of these targets, will be referenced. These assessments will consider these effects against the significance criteria set for each topic of assessment.

6.29 It is proposed that a summary technical brief regarding how the proposed development may effect human health is provided within the technical appendices and to meet the requirements of the new EIA Regulations 2017 [2].

MAJOR ACCIDENTS & DISASTERS

6.30 In the absence of recognised guidance on this subject in the context of EIA, a range of sources providing guidance related to the topic will be reviewed, including:

- Cabinet Office National Risk Register (NRR) of Civil Emergencies 2017 Edition [53];
- UK Government Emergency Response & Recovery Guidance [54]; and
- International Federation of Red Cross & Red Crescent Societies Disaster and Crisis Management Guidance [55].

6.31 A disaster can be defined as "a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources. Though often caused by nature, disasters can have human origins" [56].

6.32 An accident can be defined as "an unfortunate incident that happens unexpectedly and unintentionally, typically resulting in damage or injury" [57].

SCOPED DOWN TOPICS

6.33 In terms of natural disasters, for example, it is considered that the likelihood of an earthquake with a magnitude sufficient to cause damage to buildings and/or loss of life occurring and impacting the site is extremely low. Therefore, these disaster/accident types are proposed to be 'scoped out' of further consideration within the ES. A full review of potential disaster/accident types as identified in the Cabinet Office's National Risk Register will be undertaken and summarised in a technical brief, that will be provided within the Technical Appendices of the ES.

6.34 Some potential major accidents and/or disasters that are proposed to be 'scoped in' (given detailed consideration within the main volume of the ES or included within the ES technical appendices but not meriting a stand-alone technical chapter within the main volume of the ES) are listed below:

- Road safety – the junction design will be subject to a Stage 1 Safety Audit;
- Utility system failure; and
- Flooding – the climate change allowances will be considered within the drainage design.

6.35 The principal recent functions of QinetiQ and DSTL at the application site relate to research and forensic analysis into explosives. In 2011, DSTL announced its intention to relocate from the site to Porton Down and Portsdown West, and has since started withdrawing from the application site. Consequently, activities on the application site have been scaled down in recent years, with a number of the buildings being decommissioned and/or demolished by DSTL on vacant possession.

6.36 However, QinetiQ continues to operate on the application site, with its future operations incorporated within the extant permission and also included within the proposed development.

6.37 QinetiQ's future operations would continue to focus on the research, analysis and trace testing of energetic material for commercial manufacturing and the Ministry of Defence. All of QinetiQ's operations would be Health and Safety Executive (HSE) compliant. Consequently, specific consideration of QinetiQ's activities is not proposed.

7.0 SCOPED OUT TOPICS

7.1 This section considers those technical topics that are considered unlikely to exhibit significant environmental effects and therefore those it is proposed to 'scope out' of the ES.

WASTE MANAGEMENT

7.2 The proposed development would produce waste from the site preparation/construction phase as well as during the life of the site in its operational phase.

7.3 Construction waste will arise from the construction of the proposed development, associated infrastructure and highways improvements which would predominantly comprise inert wastes. However, non-inert waste, such as timber, plastic, plasterboard, insulation, packaging, etc would also arise from the fit-out stage.

7.4 Waste produced during the life of the site would be varied in nature and would be generated on an on-going basis from residential and commercial uses.

7.5 Effects upon waste infrastructure capacity during the site preparation and construction phase are dependent upon the volumes of waste produced and the available existing and future capacity for its management. Significant effects would arise if there was insufficient management capacity for the predicted levels of waste arisings.

7.6 Good waste management practices will be set out within *Chapter 5: Construction Strategy & Programme* of the ES. The Design and Access Statement will set out measures for operational recycling and waste management which will be refined at the reserved matters stage. The Sustainability Statement will also set out principles around good construction and operational waste management practices.

7.7 Therefore, it is considered that the proposed development will not give rise to potential significant effects as a result of waste and this can be suitably addressed in the documents set out above.

LAND

7.8 The application site extending to 62.7 ha, is currently an operational Ministry of Defence (MoD) site for DSTL and Qinetiq. It is also the subject of an extant planning consent granted in 2015.

7.9 The site was initially occupied in the late 19th century and currently comprises approximately 285 buildings and structures, the site is largely developed with the buildings interlinked with estate roads, hardstanding and landscaping. At present, there are over 800 car parking spaces on the site.

7.10 SDC's Allocations and Development Management Plan [4] notes at paragraph 4.10 that:

"There are a number of employment sites in the District, divorced from existing settlements, that have become built up over the years and which are designated as "Major Developed Sites" in the Green Belt in the Sevenoaks Core Strategy ... The first three sites are also located in the Kent Downs AONB:

- Fort Halstead, Halstead

…Under the Major Developed Sites (MDS) designation the owners of these sites were able to carry out limited development consistent with criteria set out in Annex C of PPG2. However, since the adoption of the Core Strategy, the NPPF no longer references MDS designation, and has instead set out that limited infilling or the partial or complete

SCOPED OUT TOPICS

redevelopment of previously developed sites (brownfield land) is appropriate development, provided it does not have a greater impact on the openness of the Green Belt."

7.11 Consequently, it can be seen that the application site is acknowledged as a previously developed site and is considered suitable for redevelopment.

DAYLIGHT, SUNLIGHT AND OVERSHADOWING

7.12 Daylight, sunlight and overshadowing assessments are typically undertaken with reference to BRE standards. Daylight, sunlight and overshadowing effects are principally associated with tall buildings or developments in highly urbanised/developed environments.

7.13 Across the proposed development, minimum heights are anticipated to be circa two storeys (10m) with maximum heights up to four storeys (19.5m).

7.14 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 19m) and employment uses will vary from 2.5 storeys to 4 storeys (maximum height of 19m). The building heights proposed across the site, are not considered to have the potential to significantly affect sunlight or daylight levels either at new receptors brought to the site under the proposals or at those existing in the vicinity of the site. It is therefore proposed that sunlight, daylight and overshadowing be scoped out of further consideration in the EIA.

7.15 It is intended that the Design and Access statement will include information regarding sun paths that will demonstrate that the main public spaces of the proposed development will benefit from good levels of sunlight.

LIGHTING

7.16 A baseline lighting assessment was completed in February 2014 by Waterman. The baseline lighting assessment found that lighting levels surrounding the application site reflected occasional street lights, security lights and internal building lighting (classed as E2 environmental lighting zone, defined in the Institute of Light Professional). Other areas in proximity of the application site were also found to be well lit, particularly the M26, the M25 and the North Downs Business Park.

7.17 On the application site, the level of lighting recorded was generally low considering the level of existing development. Lighting levels vary significantly across the secured area of the application site, but are largely typical of suburban locations (E3 environmental lighting zone), with the edges of the site, experiencing lower lighting levels more typical of village locations (E2 environmental lighting zone). Owing to the topography and woodland on site, lighting visible from outside the application site is limited.

7.18 As per the permitted scheme, the proposed development would implement a lighting design in accordance with the following deisgn principles.

7.19 The new lighting scheme would be designed to provide a safe environment for vehicles, cyclists and pedestrian usage. Lighting levels required for all new roads, footpaths, cycle ways shall be discussed and agreed with KCC. Particular attention shall be given to lighting at the junction of Star Hill Road and Crow Road, together with the lighting of shared surfaces and traffic calming measures. For access routes, all new road lighting shall be designed in accordance with BS 5489-1:2003 and BS EN 13201-2:2003.

SCOPED OUT TOPICS

7.20 Where, for environmental or other reasons, the use of illuminance levels significantly diff from those specified in BS 5489, the appropriate lighting levels shall be discussed and agreed with KCC.

7.21 The lighting design would ensure the use of low level and directional lighting, particularly along woodland edge, grassland habitats and near bat roosts. Measures to reduce light pollution will be adopted in the detailed lighting design, including:

- Using low energy lighting and standard LED light to reduce overall lighting requirements by improving colour definition;
- Limiting upward light by specifying lighting unit types which emit no upward light as standard;
- The alignment of lamps and provision of shielding minimises spillage and glow in order to safeguard the night sky;
- The lighting intensity shall be no greater than that required to provide adequate illumination;
- Designing lighting levels to meet the lowest possible lighting levels required as standard;
- Providing as uniform lighting design as possible;
- Luminaires will be selected with minimum or, where practicable, zero upward distribution and carefully located to ensure that light pollution is kept to a minimum and to minimise the visual impact of the lighting within its rural setting;
- No bat roost (including access points) will be directly illuminated;
- All woodland areas should be screened from light spill / pollution. For pedestrian lighting adjacent to woodland or bat roosts, lighting shall be low level directional and below 3 lux at ground level. Bat Conservation Trust (Version 3, May 2009); ILE Bats and Lighting in the UK;
- All external lighting will be automatically controlled to ensure it is minimised to reduce any potential disturbance to wildlife;
- Guidance with regard to architectural lighting, and lighting of the historic environment is included within CIBSE's Environmental Considerations for External Lighting 2003 and Historic England's 'External Lighting for Historic Buildings, 2007'.

7.22 All external lighting will be designed to meet the requirements of the ILP 2011 guidance notes on the reduction of obtrusive light, based on category E2 Rural (low district brightness, typical of a small village).

7.23 Consequently, it is considered that through adherence to the above lighting design standards, the proposed development will not result in a significant effect upon sensitive receptors and therefore, a lgihting impact assessment is not proposed within the EIA.

WIND

7.24 Assessments of wind microclimate focus on pedestrian comfort and safety and are typically undertaken with reference to the Lawson Comfort Criteria. Significant effects on wind microclimate are principally associated with tall buildings or developments in highly urbanised/developed environments.

SCOPED OUT TOPICS

7.25 Proposed building heights across the site are expected to be up to 19.5m. The building heights proposed are not considered to have the potential to significantly alter the wind microclimate within the site or at sensitive receptors outside the site boundary. It is therefore proposed that wind microclimate be scoped out from further consideration within the EIA.

7.26 A comparison in the heights of existing and proposed buildings on the site in relation to the village centre and the associated public spaces will be provided in the DAS to assist in demonstrating that the wind climate will not materially change at the application site sufficient to warrant poor levels of wind comfort or safety.

8.0 SUMMARY & CONCLUSIONS

REQUEST FOR A SCOPING OPINION

8.1 This report is a request for a scoping opinion under Regulation 15(1) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

8.2 In accordance Regulation 15(3), should SDC consider that they have not been provided with sufficient information to adopt a scoping opinion, they should notify the person making the request of the points on which they require additional information.

LIST OF CONSULTEES

8.3 Copies of this scoping report are to be circulated to the following:

- SDC Technical Officers including the below and any other officers as required by SDC as the determining LPA:
  - Planning Officer;
  - Environmental Health Officer;
  - Tree Officer;
  - Heritage/Conservation Advisor.
- Local Lead Flood Authority (LLFA);
- KCC Officers including:
  - Highways;
  - Sustainable Drainage and Consenting Team Leader; and
  - Public Rights of Way (PROW);
- Natural England;
- Environment Agency; and
- Historic England.

PERIOD FOR ADOPTING SCOPING OPINION

8.4 As per Regulation 15(4), SDC shall now consult with the Applicant and the consultation bodies and adopt their scoping opinion within 5 weeks of receiving this request.

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APPENDICES

Appendix A

PLAN SUFFICIENT TO IDENTIFY THE LAND

Appendix B

ENVIRONMENT & STATUTORY DESIGNATIONS

Appendix C

EXISTING BUILDINGS PLAN