

Barkham Square, Arborfield Green, Wokingham

Environmental Statement, Volume 4: Non-Technical Summary
for

Crest Nicholson Operations Limited

10 April 2026

Our Ref: SRS/24-02200/NTSFinal



Contents

1 INTRODUCTION 3

2 THE EIA PROCESS 5

3 BACKGROUND TO THE DEVELOPMENT 6

4 THE PROPOSED DEVELOPMENT 7

5 ALTERNATIVES.....8

6 POLICIES AND CONTEXT 9

7 ENVIRONMENTAL EFFECTS 10

8 CONCLUSIONS.....16

Figures

Figure NTS1 Site Location Boundary Plan

Figure NTS2 Land Use Parameter Plan



Quality Assurance

This report has been prepared within the quality system operated at Rapleys LLP according to British Standard ISO 9001:2015.

We confirm that the undersigned is an appropriately qualified and experienced Chartered Surveyor/Planner [delete as appropriate] experienced in the commercial property sector.

Created by: Sarah R Smith BA (Hons), MRTPI, Affiliate ISEP
Planning Consultant

Signature:

Checked by: Michael Orr
Planning Partner

Signature:

1 INTRODUCTION

- 1.1 This Non-Technical Summary (NTS) of the Environmental Statement (ES) has been prepared by Rapleys LLP in conjunction with the EIA Team and forms part of an outline planning application for the creation of an urban extension for residential dwellings (C3), Elderly Care accommodation (C2/C3), associated open space, allotments, green and blue infrastructure including the provision of Suitable Alternative Natural Greenspace (SANG) and associated highway/drainage and other services (all matters reserved except for access) – (the 'Proposed Development'). The land subject of this ES is known as Barkham Square (the Site). The application is submitted by Crest Nicholson Operations Limited (the Applicant) to Wokingham Borough Council (the Council).
- 1.2 Rapleys has been instructed by the Applicant to coordinate an Environmental Impact Assessment (EIA) for the Proposed Development. An ES, which sets out in detail the findings of the EIA, has been prepared to accompany the planning application. It provides the Council with detailed information on the potential significant environmental effects of the Proposed Development.
- 1.3 The ES consists of the following volumes -
- Volume 1: ES Main Text
 - Volume 2: ES Figures
 - Volume 3: ES Technical Appendices
 - Volume 4: ES NTS
- 1.4 The purpose of this NTS is to summarise the main points of the ES, in particular the predicted effects of the Proposed Development on the local environment during construction and once the scheme is built and occupied, including cumulative effects. Those with particular technical interest should refer to Volumes 1 and 3 of the ES for more detailed information.
- 1.5 The ES has been prepared in accordance with the requirements of The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ('the Regulations').
- 1.6 The ES and planning application documents are available electronically from either the Applicant or can be downloaded directly from the Council's web site. Details are below -
- Rapleys email: info@rapleys.com
 - The Council - <https://www.planning.wokingham.gov.uk/FastWebPLwelcome.asp>
- 1.7 Hard copies of the NTS can be made available by contacting Rapleys at the aforementioned email address.
- 1.8 Comments on the planning application should be submitted to the Council's Development Management Department -
- Email: planning@wokingham.gov.uk
 - Development Management & Compliance, Wokingham Borough Council, PO Box 157, Shute End, Wokingham, RG40 1 BN.

WHAT IS ENVIRONMENTAL IMPACT ASSESSMENT?

- 1.9 An EIA is needed for projects that are of a certain size or located in a sensitive area such that significant environmental effects may result. An ES summarises the findings of the EIA and provides the local planning authority with detailed and objective information on the environmental effects of a proposed development.

WHY DOES THE PROPOSED DEVELOPMENT REQUIRE EIA?

- 1.10 The Proposed Development falls within Schedule 2, Class 10 Urban Development of the Regulations because -
- The Proposed Development consists of in excess of 150 dwellings, and
 - The site area is over 5ha in extent.
- 1.11 The Applicant is submitting this EIA on a voluntary basis – no formal Screening Opinion request of the Council has been sought. A Scoping Opinion Report was submitted to the Council in December 2024 to determine the scope of the EIA whilst baseline work for the ES was being undertaken. The Scoping Opinion from the Council was received on 28 January 2025. Using expert collective judgement, the consultant team has determined the likely need for the following scope of this EIA to be -
- Transportation,

- Landscape and Visual Amenity,
- Ecology and Conservation,
- Flooding, Drainage and Water Resources,
- Historic Environment – Archaeology only,
- Climate Change – operational effects of traffic, increased regulated/unregulated emissions at operational phase,
- Noise and Vibration – the latter for construction only,
- Air Quality, and
- Cumulative Effects.

1.12 The Council Scoping Opinion confirmed its agreement with the above topics to be included within the ES. It should be noted, however, that the Council considered that Archaeology could be dealt with outside of the EIA/ES. The Application has nonetheless decided to include Archaeology.

- 1.13 The following topics have, in agreement with the Council, been scoped out of the EIA –
- Historic Environment – built heritage, Scheduled Ancient Monuments (SAM),
 - Ground Conditions,
 - Vibration during operational phase,
 - Climate change in terms of those areas identified as non-significant (see Scoping Report),
 - Major Accidents and Natural Disasters,
 - Human Health,
 - Society, Economy and Population.

THE EIA TEAM

1.14 This NTS and EIA has been prepared by Rapleys LLP with technical input from competent experts as set out below.

Table NTS1.1: EIA Team

Scoping Topic Areas For Consideration	Responsibility
Transportation	I-Transport
Ecology including Trees	Sylvan Biodiversity/SJA Trees
Historic Environment - Archaeology	RPS
Landscape and Visual	Bradley Murphy Design
Water/Drainage/Flood Risk	Ardent
Air Quality	Create Consulting
Climate Change	Aether-UK
Noise	Create Consulting
Cumulative Impacts	Rapleys

2 THE EIA PROCESS

- 2.1 In accordance with Schedule 4(2) of the Regulations the environmental topics identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect **significant** effects of the Proposed Development.
- 2.2 An assessment of potential environmental impacts was carried out first using recognised industry standard methodologies. A team of specialist consultants was appointed to advise further on design development and to carry out detailed assessments on the identified range of potential environmental effects. The assessment of 'significance' of impacts has been undertaken for all potential environmental effects to determine their importance.
- 2.3 The technical assessments, which are reported in volume 1 of the ES, are based on a standard general methodology; however, the accepted good practice criteria within each topic have led, in some cases, to modifications to this general approach.
- 2.4 The likely effects of the Proposed Development are described as adverse, beneficial, negligible or nil.

MITIGATION

- 2.5 The key objective of mitigation is to avoid, offset or reduce the significant adverse effects of a development.
- 2.6 Measures that avoid environmental impacts and effects and which form part of the assessed Proposed Development (as set out in the scheme description or shown on the parameter plans) are known as inherent mitigation that is included in the design of the Proposed Development. Inherent mitigation is taken into account in the assessments.
- 2.7 Additional Mitigation is defined as a proposed measure that is additional to the assessed Proposed Development in response to environmental impacts identified through the assessment.

CUMULATIVE SITES

- 2.8 The EIA looks at the potential cumulative effects of the Proposed Development, i.e., the Proposed Development combined with existing and approved developments both during the construction phase and following completion. The assessments of cumulative effects are contained within the individual ES chapters where relevant and drawn together more comprehensively in chapter 15 of the main ES. It should be noted that the Council's strategic traffic model (which has been used to test traffic impact and associated noise and air quality impact) includes potential trip generation from all of the allocated sites, proposed allocations and other committed sites such as those with planning permission. In the Scoping Opinion response, the Council specifically referenced following cumulative sites to be assessed –
- Hall Farm/Lodden Garden Village – site allocation in emerging Local Plan, and recent application submission,
 - South Wokingham SDL – site allocation in emerging Local Plan,
 - South of Cutbush Lane, Shinfield – part of Lodden Garden Village proposed allocation,
 - East of Shinfield (phase 2), south of Church Lane, Shinfield (17/2450) committed site.

CONSULTATION

- 2.9 Pre-application advice has been sought from the Council. Throughout the preparation of the application and ES there has been ongoing discussion with both the Council Officers and the Highway Authority. The Site is also being promoted through the Local Plan process.

3 BACKGROUND TO THE DEVELOPMENT

- 3.1 Full details of the Site and its surroundings can be found within the accompany Planning Statement and Design and Access Statement. A summary is presented below.

SITE

- 3.1 The Site (as shown on **Figure NTS1**) extends to circa 44.89ha and is presently principally comprised of poor-quality agricultural grassland, DEFRA classification Grade 4. It is relatively unconstrained by physical constraints, with a narrow corridor in the central spine of the Site within Flood Zone 3 based around the Barkham Brook which flows northwards into the River Loddon. The remainder of the Site lies within Flood Zone 1. Ditches within the Site are associated with the linear boundary vegetation which includes native hedgerows. Three ponds are found within the Site.
- 3.2 There is sporadic mature tree coverage across the Site, including veteran trees and parcels of ancient woodland. Tree Preservation Orders (TPOs) are found along the southern boundary of the Site (individual trees) and a woodland TPO on the northern boundary of the western part of the Site.
- 3.3 The Site is gently undulating, rising to the north. The western part of the Site features a localised plateau at circa 55+AoD beyond the central hedgerow with the landform sloping gently downhill east towards the Barkham Brook corridor; the eastern part of the Site features a localised ridgeline at circa 60m+ AoD running east/west centrally with the landform then gently sloping westwards towards the Barkham Brook corridor.
- 3.4 There is an existing access into the Site from Commonfield Lane to the east.
- 3.5 There are no listed buildings or Scheduled Ancient Monuments (SAMs) within the Site and the Site is not included within any conservation area.
- 3.6 There are no landscape or ecological designations within the Site boundary.

SURROUNDINGS

- 3.7 The Site is located adjacent to the northern boundary of Arborfield Green and circa 1km south-west of Barkham Village. Wokingham lies to the north-east at circa 2km and Reading a circa twenty-minute drive to the north. Wokingham railway station lies 4km to the north-east of the Site.
- 3.8 Arborfield Green is a strategic development site (the regeneration of the former Arborfield Garrison), where Crest are the lead developer. Crest has planning permission for circa 2,000 dwellings and associated infrastructure and facilities, including a district centre. It is currently under construction.
- 3.9 Barkham Village also provides a range of local facilities, including a pub and village hall, small retail shop. Arborfield Green provides a leisure centre, playing fields and Hazebrouck Meadows SANG, local shop, primary school and secondary school. Medical and dental facilities can be found at Finchampstead and the nearest supermarket, a Tesco, is in Wokingham, circa a 10 minute drive.
- 3.10 The Site lies within the buffer zone to the Thames Basin Heaths Special Protection Area (SPA). The Longmoor Bogg SSSI and Local Nature Reserve (LNR) lie some 230m to the east of the Site. The wider landscape of the Chilterns National Landscape lies to the north and North Wessex Downs National Landscape to the west.

PLANNING HISTORY

- 3.11 There is no planning history of relevance associated with the Site.
- 3.12 As already noted, the Site has been promoted as a location for between 500-1,000 dwellings as part of the Wokingham Local Plan review process, with representations submitted at appropriate times, including –
- The call for sites, and
 - The two Regulation 18 consultations.
- 3.13 In September 2024 the Council published its Regulation 19 Plan for consultation. The Site is a proposed allocation for 600 dwellings in that Plan. Representations in support of the principle of the allocation were made on behalf of the client, alongside representations seeking an uplift in the capacity of the Site to 660.

4 THE PROPOSED DEVELOPMENT

- 4.1 The Proposed Development is as a north-eastern urban extension to Arborfield Green on a total Site area of circa 44.89ha, comprising -
- Up to 660 C3 dwellings including affordable housing, plus Elderly Care dwellings (Class C2/C3),
 - Green/blue infrastructure including new wetlands, drainage/attenuation ponds/swales/open space/play space/landscaping/allotments/community green - 11.77ha,
 - Sustainable Alternative Natural Green Space (SANG)/natural/semi-natural space/woodland - 13.23ha,
 - Access – the main vehicular access is provided from Langley Common Road in the west. A secondary vehicle access is also provided to the east from Commonfield Lane to serve the allotments and SANG car park only.
- 4.2 The following principles form the basis of the Proposed Development design (**Figure NTS2**) -
- Retention of existing central watercourse corridor and associated woodland,
 - Retention of woodland, hedgerows and trees within the Site and along boundaries as far as possible and existing ponds, and using these as part of a network of green/blue infrastructure corridors linking open spaces of high natural and amenity values within and outside the Site and where biodiversity enhancement can take place,
 - Creation of SANG with linkages to the Hazelbrouck SANG within Arborfield Green,
 - Encouraging travel by sustainable modes through a high quality pedestrian/cycle links to the existing network surrounding the Site, including Commonfield Land and Langley Common Road, and in addition a connection up to the boundary of the adjacent Arborfield Green,
 - Creation of five character areas,
 - Building heights ranging from 2 to 3 storeys,
 - Densities ranging from low to high.

PHASING

- 4.3 The broad timescale is for construction over circa 8 years. Start on site is planning permission dependent, but could potentially be 2027, completing in 2034/5.

5 ALTERNATIVES

5.1 The ES must consider and identify 'alternatives' to the Proposed Development. The alternatives considered within the ES are summarised as -

- Do nothing,
- Alternative site location.

5.2 The Do Nothing scenario is a hypothetical alternative, conventionally considered in EIA as a basis for comparing the development proposal.

5.3 The do nothing scenario would result in the Site's baseline condition as arable/pasture land remaining unchanged thus avoiding any associated adverse impacts identified within this Proposed Development. However, the do nothing scenario is not a reasonable alternative in the context of the need for housing within the Borough.

Alternative Site Location

5.4 The Site is owned by the Applicant, who has also constructed the adjacent Arborfield development. In this context, there is not an alternative location for the Proposed Development to take place. The Site is being promoted as a proposed allocation through the Local Plan process as a suitable and sustainable location for residential development.

6 POLICIES AND CONTEXT

- 6.1 A detailed review of the Proposed Development against the background of the planning policy context is set out in the Planning Statement accompanying the application. The ES summarises those policies that are most relevant to the Site and the Proposed Development.
- 6.2 Within the adopted Local Plan, the Site lies in the countryside, outside of the extent of any built-up area. There are no specific planning designations attributable to the Site.
- 6.3 The Local Plan is undergoing its review process. The Local Plan was submitted to the Secretary of State in February 2025. The Examination process commenced in mid-November 2025. The Site is a proposed allocation for 600 dwellings under policy SS11.

7 ENVIRONMENTAL EFFECTS

- 7.1 This section summarises the potential significant effects against each topic in the ES. **Table NTS2** at the end of this NTS provides an overall summary of the impacts of the Proposed Development, the mitigation and the effects remaining after mitigation (residual effects).

TRANSPORTATION

- 7.2 This chapter of the ES has considered the impact of the Proposed Development and associated traffic during the construction and operational/completed phases. The assessment provides detail on the anticipated traffic flows to and from the site and additionally forecasts the expected impact on key local public transport services. The assessment focuses on the following topics: severance, pedestrian/driver delay, pedestrian/cyclist amenity, fear and intimidation, and accidents and safety.
- 7.3 The Council maintains a Wokingham Strategic Highways Model (VISUM) based on surveyed traffic data that represents an average weekday (Tuesday to Thursday). The trip generation associated with the Proposed Development (agreed with the Council) has been assessed using this Strategic Highways Model and the outputs across the following scenarios against the relevant transport topics for each of the considered road link in the agreed study area -
- 2040 – Do Minimum (background growth not accounting for local plan or infrastructure).
 - 2040 – Do Something without Development (providing background and local plan growth and distribution).
 - 2040 – Do Something with completed Development (providing distribution for development trips).
 - 2040 – Do Minimum with Construction (prior to occupation)
- 7.4 The IEMA Guidelines suggest two broad rules to identify the appropriate highway links which should be considered in detail against the assessment topics, which are as follows:
- Rule 1: Include highway links where traffic flows will increase by more than 30% (or the number of heavy good vehicles will increase by more than 30%), and
 - Rule 2: Include highway links of high sensitivity where traffic flows have increased by 10% or more.
- 7.5 Increases in traffic flows below 10% are not generally considered to be material in environmental terms, given that daily variations in background traffic flow may also vary by this amount. As such, where the predicted increases in traffic flows are lower than the above thresholds, the IEMA Guidelines suggest that the significance of the effects should be stated to be 'Negligible', and therefore further assessment as part of the EIA would not be warranted.
- 7.6 The number of HGVs increases beyond 30% for Langley Common Road (Between Biggs Lane and Site Access) warranting further assessment for the construction scenario as per Rule 1 of the IEMA Guidelines. None of the other links considered pass this threshold for further assessment. The construction assessment found that the Langley Common Road (Between Biggs Lane and Site Access) across all assessment topics is **Negligible – Not Significant** and temporary at the local level, meaning no additional monitoring and mitigation required over and above the measures that will be included within the Construction Logistics Plan (CLP) and Construction Environmental Management Plan (CEMP). These plans will be prepared, submitted and agreed with the Council as part of future condition discharge/reserved matters planning applications.
- 7.7 The assessment of operational (completed Development) trips demonstrated that no links within the study area surpass the two broad rules to identify the appropriate extent of the highways assessment. This means the impact of the Proposed Development can be considered **Negligible**. Nonetheless, for completeness the links have still been assessed against the main transport topics in order to ensure that a worst-case assessment has been undertaken and that any possible impacts across the main transport effects are commented on, even with the Proposed Development not making a notable contribution to them.
- 7.8 The detailed assessment found no significant adverse highways and transport related effects have been identified, and therefore no specific mitigation or monitoring is required. Nevertheless, a number of measures will be implemented to promote the use of sustainable modes of travel and thus minimise the impacts on the transport network. The new Site access junction also incorporates improved, widened shared-use footways as well as crossing points at appropriate locations.
- 7.9 The uptake of sustainable modes of travel will also be promoted through sustainable travel initiatives delivered through the Council's MyJourney, which the Proposed Development supports. This follows the same approach to implementation as Arborfield Green, enabling a collaborative, holistic approach to wider travel initiatives.

- 7.10 The operational mitigation is summarised as follows -
- Sustainable travel initiatives to encourage future occupants of the Proposed Development to travel sustainably,
 - Appropriate vehicle access strategy, providing connections to influence traffic distribution,
 - Comprehensive sustainable travel strategy to encourage sustainable modes of travel and reduce car use.
- 7.11 The assessments undertaken include the potential trip generation associated with the cumulative sites as these feature within the Strategic Highways Model Scenarios assessed. As such, the assessments presented in the ES Transport Chapter are, in effect, cumulative assessments. Therefore, the effects are expected to be direct, permanent, long term and **Negligible (not significant)**. No likely significant cumulative effects have been identified.

ECOLOGY

- 7.12 The Site was subject to a range of ecological surveys through 2023 and 2024 according to good practice guidelines. The results of these surveys are set out in ES Technical Appendices 8.1 – 8.11. The surveys identified that the Site predominantly comprises three species-poor grassland fields used for sheep grazing. Two areas of ancient woodland are present on Site - one block on the southern border adjacent to the Arborfield Studios and the second running along the Barkham Brook that runs through the centre of the Site, flowing from south to north. The surveys also found the Site to support a range of bird and bat species along with small numbers of slow worm and grass snake. Surveys of the pond on Site identified great crested newt eggs but no other survey (including eDNA) found this species.
- 7.13 No nature conservation designations occur on the Site. Within 2km of the Site, there are two statutory designated sites (Longmoor Bog SSSI and Longmore Bog LNR, both 230m south), and twelve non-statutory sites. In addition, the Thames Basin Heaths Special Protection Area (TBHSPA) occurs 3.45km south-east of the Site.
- 7.14 Mitigation considered as part of the Proposed Development design includes the provision of a CEMP to control potential effects during construction (such as pollution, dust generation etc.) and an Ecological Management Plan to detail all ecology measures required to be undertaken prior to, during construction and after construction. In addition, the Proposed Development includes the provision of 13.32ha of Suitable Alternative Natural Greenspace (SANG) which will ensure that new residents do not increase recreational pressure on the Thames Basin Heath SPA and other designated sites in the area. Details of how the SANG will be established and managed are set out in the SANG Management Plan submitted with the Application.
- 7.15 The Proposed Development will provide substantial new areas of woodland and meadow grassland along with an improved management regime for both areas of ancient woodland on the Site. This will ensure that at least 10% biodiversity net gain is delivered, in line with national and local policy.
- 7.16 The assessment of effects considered those associated with both construction and operation of the Proposed Development. This included habitat loss, changes in air quality, pollution etc. With the application of the mitigation designed into the Proposed Development, **no significant** adverse residual effects on any important ecology features were identified.

HERITAGE – ARCHAEOLOGY

- 7.17 There are no World Heritage Sites, Historic Wrecks or Historic Battlefields within or within the vicinity of the Site. The nearest Scheduled Ancient Monuments include a Moated site north of the Moat House (SM Ref. 1009886) over 500m southwest of the Site and a Moated site and associated enclosure at Church Farm (SM Ref. 1013181) c. 650m to the east of the Site. There are no locally designated archaeological sites on or particularly near the Site as designated by the Council.
- 7.18 There are five records held on the Berkshire Historic Environment Record that are located within the Site. These comprise -
- EWK205 - A watching brief undertaken for Arborfield/Barking Relief Sewer Scheme recorded a possible section of a prehistoric burnt mound within the Site (MWK7238),
 - EWK28, EWK31 and EWK32 - Between 1990 and 1993 the Berkshire Field Research Group undertook systematic fieldwalking within the Site,
 - ERM278 - During the 1980s a survey of East Berkshire's archaeology was undertaken with the aim to obtain a fuller picture of past human activity in the area. Fieldwalking and Aerial Photographic interpretation was undertaken. No finds were retrieved during the fieldwalking (the entry shown on Figure 9.1, MWK8592, is erroneous and refers to an Iron Age coin found in a back garden).

- 7.19 A geophysical survey was undertaken on the Site during September 2024 and included areas of land that are no longer included within the Application Site. A focus of possible archaeological activity was identified.
- 7.20 Construction activities have the potential to adversely impact on any underground archaeology, hence the importance of further excavation prior to any start of construction. Consequently, a programme of trial trenching as a minimum will be carried out in agreement with the County Archaeologist.
- 7.21 There will be **no significant** adverse impacts on archaeology arising from the use of the completed Proposed Development.
- 7.22 A parcel of land to the east of Barkham Street that was included in the geophysical survey has been excluded from the Proposed Development to avoid impact and harm to archaeological remains of probable Medieval date and forming part of the setting of the Scheduled Monument moated site at Church Farm (SM Ref. 1013181).

LANDSCAPE AND VISUAL

- 7.23 A Landscape and Visual Impact Assessment (LVIA) has been carried out. The LVIA methodology, extent of Study Area (2km radius) and locations for representative viewpoints have been agreed with the Council.
- 7.24 Views of the Site range from indirect / filtered to direct / open views from adjacent residential properties, public rights of way, public open spaces and the surrounding road network.
- 7.25 Landscape and visual effects have been assessed following three stages: during construction; immediately on completion (Year 0); and during operation after establishment of landscape mitigation (Year 15) as well as for an alternative assessment scenario based on reduced numbers of proposed residential units.
- 7.26 Effects on landscape character would be considered as **Minor Adverse (not significant)** during construction and immediately on completion for areas directly adjacent to and up to 500m of the Site, with all other landscape effects considered Neutral in the long term.
- 7.27 Effects on the landscape character of the Site are considered temporary **Minor-Moderate Adverse** during construction, reducing to short term **Minor Adverse** on completion and improving to long term **Minor Beneficial** on establishment of the Green Infrastructure Framework / landscape mitigation.
- 7.28 Visual effects at the construction stage and on completion (Year 0) have been assessed to be temporary and short term **Moderate - Major Adverse (significant)** to residents that directly abut the Site on Langley Common Road and at Field House. All other landscape and visual effects during construction would be insignificant, with most effects being **Negligible or Minor (Not significant)**.
- 7.29 Visual effects during operation, following establishment of landscape mitigation (Year 15) have been assessed to be long term **Moderate Adverse (Significant)** to residents that directly abut the Site on Langley Common Road and at Field House, with all other long term visual effects considered to be **insignificant** / most being **Negligible**.

WATER/DRAINAGE/FLOOD RISK

- 7.30 The Site lies in the catchment of Barkham Brook (a tributary of the River Loddon). The Barkham Brook runs through the Site while Blackwater River is located approximately 3.5km south of the Site and the Loddon River approximately 3km to the west of Site.
- 7.31 A small watercourse is running south to north near the Site's western boundary. This outflows to the Barkham Brook near the Site's northern boundary. Additional surface water features comprise of a lake located to the south of the Site near Barkham Brook.
- 7.32 The majority of the Site lies within Flood Zone 1. A small area lies within Flood Zones 2 and 3 associated with the floodplain of the Barkham Brook running through the centre of the Site.
- 7.33 The layout of the Site has been designed to minimise surface water flood risk, i.e., the 1-in-100-year flood event plus 40% allowance for climate change. The fluvial flood risk to the developable areas of the Site has been assessed as low.
- 7.34 Potential impacts on the water environment include pollution arising from Site use, disturbance to/contamination of groundwater, increased demand for water supply and wastewater. These impacts have been assessed as ranging from **Moderate Adverse (Significant)** to **Negligible (Not significant)** during the construction phase.

- 7.35 The Proposed Development has been designed to include attenuation basins and Suds features which will filter/clean the surface water runoff, store it onsite and release it at a controlled rate back into the system. The resulting impact to flood risk and pollution of water courses on the Site is therefore **Minor Adverse (not significant)**.
- 7.36 Thames Water will supply the water and wastewater capability for the Site. The increase in demand for both of these once the Site is fully occupied is considered to be of **Major Adverse** significance, although with the intention of fitting all properties with water efficient fixtures and fittings, the impact on wastewater generation will reduce to **Negligible (Not significant)**.

AIR QUALITY

- 7.37 During the construction phase of the Proposed Development, there is the potential for air quality impacts as a result of dust emissions from the Site. Assuming good practice dust control measures are implemented, the residual significance of potential air quality impacts from dust generated by demolition, earthworks, construction and trackout activities is predicted to be **Negligible**. The residual effects of dust (PM_{2.5} and PM₁₀) generated by construction activities are therefore **not significant**.
- 7.38 The dispersion modelling results indicated that predicted NO₂, PM₁₀ and PM_{2.5} concentrations at all sensitive human receptor locations across the modelling extent were below the relevant Air Quality Objectives (AQOs). For the 2035 scenarios with and without the Proposed Development, operational phase impacts are predicted to be **Negligible** at all receptors. For the 2040 scenario with and without the Proposed Development, the Proposed Development is predicted to result in **Slight** effects at some receptors and a **Moderate** effect at one receptor, reflecting a conservative worst-case assessment. Overall, the operational impacts of the Proposed Development are considered to be **Not significant**.
- 7.39 Predicted annual mean NO_x concentrations are below the critical level of 30 µg/m³ at all modelled ecological receptor locations for all modelled scenarios.
- 7.40 Across all modelled scenarios, nitrogen and acid deposition at the only relevant ecological receptor within Longmoor Bog SSSI (E4) remain effectively unchanged from background levels. The predicted pollutant concentrations arising from vehicular emissions are extremely small and consistently well below 1% of the lowest critical load, indicating no measurable increase attributable to the Proposed Development. Consequently, the Proposed Development is not expected to give rise to significant effects on designated habitats, and ecological impacts are considered **Not significant**.
- 7.41 The Site is therefore considered suitable for residential use without the need for mitigation methods to protect existing human receptors, future users and ecological receptors from poor air quality.

CLIMATE CHANGE

- 7.42 The Climate Change assessment looked at how the Proposed Development might contribute to climate change, and how future climate conditions could affect the Proposed Development itself.

Greenhouse Gas Emission Assessment

- 7.43 Construction activities – such as the use of machinery, construction traffic, and the production of building materials – will generate some emissions. However, these are expected to be relatively low and are assessed as **Minor Adverse** and **Not Significant** in EIA terms.
- 7.44 Once built, the Proposed Development has been designed to keep emissions as low as possible. It will be all-electric, using efficient building design, heat pumps, and good insulation to reduce energy demand. Solar panels will provide at least 10% of the Proposed Development's energy needs, and the layout encourages walking, cycling and other sustainable travel choices. Over time, wider changes such as a cleaner electricity grid and more electric vehicles will further reduce emissions.
- 7.45 Although some emissions will still occur during the lifetime of the Proposed Development, they are small in scale when compared with local and national carbon targets. Therefore, the overall effect on climate change is assessed as **Minor Adverse and Not Significant**.

Climate Change Resilience and Adaptation

- 7.46 The assessment also looked at how future climate change – including hotter summers, wetter winters and more extreme weather – could affect the Proposed Development. Projections for the end of the century suggest more heatwaves, heavier rainfall, droughts and occasional intense storms.
- 7.47 During construction, these conditions are not expected to cause major disruption and can be managed through standard construction planning and health and safety measures. As a result, the effect of climate change on construction activities is assessed as **Negligible (Not Significant)**.

- 7.48 For the completed Proposed Development, the assessment considered how future residents, buildings, infrastructure and landscaped/ecological areas could be affected. The design already includes many embedded features to cope with these future conditions. Examples include -
- Homes to be designed in line with Building Regulations Part O to reduce overheating, e.g. using passive ventilation and the cooling hierarchy.
 - Shaded open spaces and green infrastructure to help reduce local heat build-up.
 - Water-efficient fittings, drought-tolerant planting, and the potential for rainwater collection to support resilience during dry spells.
 - A sustainable drainage system (SuDS) that can manage heavy rainfall and reduce flood risk, including storage basins designed for major storms plus climate-change allowances.
- 7.49 With these measures in place, the Proposed Development is considered suitably adapted to future climate conditions. Any remaining impacts – such as occasional discomfort during extreme heat for vulnerable people – are assessed as **Minor Adverse** and **Not Significant**. Effects on planting or habitats are also expected to be **Negligible** with appropriate landscape and ecological management.
- 7.50 In summary, the Proposed Development is expected to produce only low levels of GHG emissions and will not result in any significant climate-related effects. It has been designed to be resilient to future climate conditions, and with the proposed mitigation in place, all climate change impacts are assessed as **Not Significant** in EIA terms.

NOISE/VIBRATION

- 7.51 An acoustic baseline survey was carried out in order to establish the prevailing noise environment at the Site.
- 7.52 In line with BS 8233:2014, the internal and external ambient noise levels were assessed and found to comply with the requirements of BS 8233 and also satisfy the World Health Organisation (WHO) requirements through the majority of the Site without the need for mitigation. In a small area of the Site, noise mitigation strategies are needed and have included the relocation and orientation of houses and sensitive room types, and where this is not possible, the use of uprated acoustic glazing and forced ventilation.
- 7.53 The external amenity spaces have also been assessed and the sound levels are below the recommended level in line with BS 8233 and the WHO in all public amenity spaces.
- 7.54 Prior to the implementation of mitigation measures, potential **Major/Moderate Adverse (Significant)** impacts have been identified which would reduce these impacts to **Minor Adverse or Negligible (Not significant)**.
- 7.55 An assessment of the likely significant effects of construction vibration generated by the construction phase of the Proposed Development has been carried out and considered to be **Negligible** following the implementation of the mitigation.
- 7.56 Plant information is not available at this time. An assessment of the likely significant effects of plant noise generated by the completed Proposed Development has been undertaken which has provided guidance on the maximum permissible sound level for any externally mounted or vented plant, inclusive of any special acoustical characteristics. All plant will be installed in line with the requirements of BS 4142.
- 7.57 Effects from road traffic noise generated by the operational Proposed Development on existing residents in the vicinity of the Site and future occupants of the Proposed Development would be **Negligible (Not significant)** and no mitigation measures are required.
- 7.58 An assessment has been made of the construction noise and vibration effects from the Proposed Development to other committed developments and existing residential receptors in close vicinity of the Site. Due to the distances between The Site and the committed development sites, combined with the implementation of CEMPs and Best Practice methods in each case, construction noise and vibration will be **Negligible**.
- 7.59 The noise from the completed Proposed Development has also been assessed in terms of increased road traffic and plant noise. The impact from this Proposed Development has been shown to be **Negligible and Not significant**, assuming the proposed mitigation is implemented. Likewise, the impact on existing and future residents from the increased road traffic and plant noise from the committed developments should be **Negligible and Not significant**, based on the distances involved.
- 7.60 The cumulative impact for this Proposed Development and the other committed developments would be **Negligible and Not significant** to existing or future residents.

CUMULATIVE IMPACT

- 7.61 Cumulative effects result from the combined impacts of multiple developments (Type 2) as well as multiple in-scheme impacts (Type 1), for example, combined landscape and noise impacts on the same sensitive receptor. The impacts from a single development or a single environmental impact may not be significant on their own but when combined with other developments or impacts these effects could become significant.
- 7.62 The Scoping Report set out a zone of influence for consideration of projects – a 4km radius from the entrance to the Site, accepting that from a transport point of view, this distance may extend further depending on the distribution of traffic and sensitive receptors (air quality/noise and possibly ecological habitats). The Scoping Report also identified sites above 100 dwellings as being reasonable to consider as part of the assessment.
- 7.63 These thresholds have been applied on the basis that beyond this distance significant cumulative effects are considered to be unlikely. It is accepted that some larger schemes outside this 4km radius could result in cumulative effects on a wider geographical scale. In this regard, sites specifically required by the Council to be considered are –
- Hall Farm/Lodden Garden Village – proposed allocation and recent application submission,
 - South Wokingham SDL – proposed allocation,
 - South of Cutbush Lane, Shinfield, part of Lodden Garden Village proposed allocation,
 - East of Shinfield (phase 2), south of Church Lane, Shinfield – part of South M4 SDL – committed site.

Type 1

- 7.64 During construction, for the human population receptor group, potential significant cumulative adverse effects include –
- Noise impacts from construction activities on noise-sensitive receptors, ranging from **Major to Negligible** before mitigation (Depending on proximity to the Site) and **Minor to Negligible** post mitigation (residual),
 - Visual impacts from activities on the Site, specifically Field Farm, and residents along Langley Common Road, identified as **Moderate/Major** both before and after mitigation.
- 7.65 Cumulatively, therefore, these residual cumulative effects on are considered to be **Moderate/Minor Adverse**.
- 7.66 For the completed development phase, **No** potential significant cumulative adverse effects are identified for the human population receptor.

Type 2

- 7.67 It is assumed for the cumulative assessment that any mitigation proposed by the developers of these committed sites is fully executed and is successful.
- 7.68 In combination with the identified cumulative developments, both during construction of the schemes and following their completion, there are likely to be –
- **No significant** effects relating to transport, ecology, flood risk/drainage, air quality, climate change or noise following the implementation of mitigation that each site would have to contribute to,
 - **No significant** effects in relation to archaeology although the recording of any below ground findings would add to the historic resource base of the local area,
 - **Minor Adverse (not significant)** effects on landscape character arising from the urbanising effect of the Proposed Development in combination with Lodden Garden Village on part of the Landscape Character Area known as LCT J2.

8 CONCLUSIONS

- 8.1 This NTS sets out the main environmental effects of the Proposed Development but should not be regarded as comprehensive. Please refer to the other volumes of the ES, which contain the main text and the Technical Appendices for further detail.
- 8.2 The ES, which comprises this NTS and the separate volumes referred to above, has been prepared to comply with European and national legislation. The ES therefore enables a decision to be made on the accompanying planning application with adequate provision to be made for environmental mitigation, (both specific and through the overall masterplan design (embedded)) where appropriate.
- 8.3 **Table NTS2** below summarises the impacts remaining after mitigation, i.e., residual effects.

Table NTS2: Summary of Residual Effects

TOPIC	DESCRIPTION OF LIKELY IMPACT	MITIGATION	DESCRIPTION OF RESIDUAL EFFECT	SIGNIFICANCE – (Year 10 Landscape/Visual)	
CONSTRUCTION					
Transport	Langley Common Rd -Biggs Lane-Site access	CTMP to manage traffic	Severance of communities	Negligible, Significant	Not Significant
	Langley Common Road -Biggs Lane-Site Access	As above	Driver/passenger delay	Negligible, Significant	Not Significant
	Langley Common Road -Biggs Lane-Site Access	As above	Non-motorised user delay	Negligible, Significant	Not Significant
	Langley Common Road -Biggs Lane-Site Access	As above	Non-motorised user amenity	Negligible, Significant	Not Significant
	Langley Common Road -Biggs Lane-Site Access	As above	Fear & intimidation on and by road users	Negligible, Significant	Not Significant
	Langley Common Road -Biggs Lane-Site Access	As above	Road user & pedestrian safety	Negligible, Significant	Not Significant
	Ecology	Statutory designated sites - Pollution	Embedded mitigation, best practice, CEMP	N/A	Nil
Statutory designated sites - Visitor impact		As above	N/A	Nil	
Non-statutory designated sites - Pollution		As above	N/A	Nil	
Non-statutory designated sites - Visitor impact		As above	N/A	Nil	
Ancient woodland – Pollution, dust		As above	N/A	Negligible, Significant	Not Significant
Ancient woodland – Visitor impact		As above	N/A	Negligible, Significant	Not Significant
Non-ancient woodland – Pollution, dust		As above	N/A	Negligible, Significant	Not Significant
Non-ancient woodland – Visitor impact		As above	N/A	Negligible, Significant	Not Significant
Barkham Brook - Pollution		As above	N/A	Negligible, Significant	Not Significant
Pond P1 – Pollution		As above	N/A	Negligible, Significant	Not Significant
Hedgerows – Habitat loss		As above	N/A	Negligible, Significant	Not Significant
Breeding birds – Habitat loss		As above	N/A	Slight Adverse, Not Significant	Not Significant
Bats – Habitat loss		As above	N/A	Negligible, Significant	Not Significant
Bats – Disturbance from light		As above	N/A	Negligible, Significant	Not Significant
Heritage - Archaeology		Loss of archaeological remains	Preserve and record	Archaeological remains preserved by record	Slight Adverse, Not significant
Landscape/ Visual	Viewpoint 1a: Field Farm House; Adjacent residents; Views of construction activities	CEMP	For the LVIA the construction effects would take account of mitigation set out in the CEMP. Residual effects are as assessed.	Moderate/Major Adverse, Significant	

TOPIC	DESCRIPTION OF LIKELY IMPACT	MITIGATION	DESCRIPTION OF RESIDUAL EFFECT	SIGNIFICANCE – (Year 10 Landscape/Visual)	
	Viewpoint 5: Langley Common Road; Adjacent residents; Views of construction activities	CEMP	For the LVIA the construction effects would take account of mitigation set out in the CEMP. Residual effects are as assessed	Moderate/Major Adverse, Significant	
Water/Flood Risk	Major accident disaster – flood risk due to breach of defences		N/A	Negligible, Significant	Not
	Surface water flood event in excess of drainage design capacity	CEMP, Best Practice	N/A	Negligible, Significant	Not
	Aquifers and ground water flows	CEMP, best practice	N/A	Negligible, Significant	Not
	Water supply and demand		N/A	Negligible, Significant	Not
	Wastewater generation		N/A	Negligible, Significant	Not
Air Quality	Earthworks	CEMP, Best Practice	Dust	Negligible, Significant	Not
	Construction	CEMP, Best Practice	Dust	Negligible, Significant	Not
	Trackout	CEMP, Best Practice	Dust	Negligible, Significant	Not
Climate Change	Climate hazards such as high temperatures, increased rainfall could create unsafe working conditions	CEMP, EMP, Best Practice	N/A	Negligible, significant	Not
Noise & Vibration	Site Establishment	CEMP, Best Practice	Construction levels at NSRs predicted to be at or below Category A threshold from BS 5228	Negligible-Minor, Not significant	
	Excavation & Substructure	CEMP, Best Practice	As above	Negligible-Minor, Not significant	
	Superstructure & Envelope	CEMP, Best Practice	As above	Negligible-Minor, Not significant	
	Fit-Out	CEMP, Best Practice	As above	Negligible-Minor, Not significant	
	Substructure Vibration (Piling)	CEMP, Best Practice	As above	Negligible, significant	not
Cumulative	Landscape/visual/noise impacts on human receptor group (Field Farm/Langley Common Road residents).	CEMP, Best Practice	Construction levels at NSRs predicted to be at or below Category A threshold from BS 5228.	Moderate/Minor adverse – significant	
	All topics with all schemes considered, except below on landscape character.	CEMP, Best practices, conditions	N/A or as each individual topic	Negligible, significant	not
	Landscape impacts on character area LCT J2 with Lodden Garden Village	CEMP, best practice		Minor Adverse – not significant	
OPERATION					
Transport	Eversley Road/Langley Common Road/Barkham Road/Observer Way/Baird Road/Biggs Road/School Road/Barkham Street/Bearwood Road	Travel Plan and sustainable option provision		Severance of communities	
				Negligible, significant	Not

TOPIC	DESCRIPTION OF LIKELY IMPACT	MITIGATION	DESCRIPTION OF RESIDUAL EFFECT	SIGNIFICANCE – (Year 10 Landscape/Visual)	
	Eversley Common Road/Langley Road/Observer Way/Baird Road/Biggs Road/School Road/Barkham Street/Bearwood Road	As above	Road vehicle driver/passenger delay	Negligible, significant	Not
	Barkham Road	As above	Road vehicle driver/passenger delay	Low, Not significant	
	Eversley Common Road/Observer Road/Biggs Road/Barkham Street/Bearwood Road	As above	Pedestrian/cycle delay	Negligible, significant	Not
	Eversley Common Road/Observer Road/Biggs Road/Barkham Street/Bearwood Road	As above	Fear and intimidation on and by road users	Negligible, significant	Not
	Eversley Common Road/Observer Road/Biggs Road/Barkham Street/Bearwood Road	As above	Road user and pedestrian safety	Negligible, significant	Not
	School Road	As above	Road user and pedestrian safety	Low, Not significant	
Ecology	Statutory designated sites – Air Quality		N/A	Negligible, significant	Not
	Statutory designated sites – visitor impact	SANG provision	N/A	Minor Adverse, Not significant	
	Non-statutory designated sites – Air Quality		N/A	Negligible, significant	Not
	Non-statutory designated sites – Visitor impact	SANG provision	N/A	Negligible, significant	Not
	Ancient woodland – Visitor impact	SANG provision	N/A	Negligible, significant	Not
	Ancient woodland – Connectivity	Embedded	N/A	Negligible, significant	Not
	Non-ancient woodland and hedgerows – habitat creation	Embedded	N/A	Negligible, significant	Not
	Barkham Brook – pollution	As above	N/A	Negligible, significant	Not
	Barkham Brook – habitat management	As above	N/A	Negligible, significant	Not
	Breeding birds – habitat creation	As above	N/A	Negligible, significant	Not
Heritage - Archaeology	Bats – habitat creation	As above	N/A	Negligible, significant	Not
	Loss of archaeological remains.	N/A	Archaeological remains preserved by record.	Slight Adverse, Not significant	
Landscape & Visual	Viewpoint 1a: Field Farm House; Adjacent residents;	Planting maturing	For residential receptors in longer term, the buffer and tree planting within and along boundaries of the Site will have matured to provide additional screening and filtering of views towards the Development.	Moderate Adverse, Significant	

TOPIC	DESCRIPTION OF LIKELY IMPACT	MITIGATION	DESCRIPTION OF RESIDUAL EFFECT	SIGNIFICANCE – (Year 10 Landscape/Visual)	
	Viewpoint 5: Langley Common Road; Adjacent residents;	Planting maturing	In long term establishment of structural planting along boundaries with Langley Common Road and internally within the Site would assist in softening and blending built form and its lighting into immediate context, however, a large proportion of receptors baseline view would be permanently lost and there would remain a noticeable change.	Moderate Adverse - Significant	
Water/Flood Risk	Major accident disaster – flood risk due to breach of defences	N/A	N/A	Negligible, significant	Not
	Surface water flood event in excess of drainage design capacity	SUDs	N/A	Minor Beneficial – Not significant	
	Aquifers and ground water flows	SUDs	N/A	Negligible, significant	Not
	Increased Water supply and demand	Water saving measures	N/A	Negligible, significant	Not
	Increased Wastewater generation			Negligible, significant	Not
Air Quality	NO ₂ , PM ₁₀ , PM _{2.5} in 2035	Travel Plan, EV's, Welcome Packs,	N/A	Negligible, significant	Not
	NO ₂ , PM ₁₀ , in 2040	As above	N/A	Negligible, significant	Not
	PM _{2.5} in 2040	As above	N/A	Negligible for some, Slight Adverse for some, Moderate Adverse for R46 – overall Not Significant	
	NO ₂ , PM ₁₀ , PM _{2.5} NO _x 2040 on ecological receptors	As above	N/A	Negligible, significant	Not
Climate Change	Increased frequency of heatwaves affecting site users, infrastructure & ecology/landscaping	Compliance with Part 0, use of cooling hierarchy; use of more resilient plants; improvements house building/infrastructure materials; risk management.	N/A	Minor Adverse to Negligible, Not significant	
	Low rainfall & drought affecting site users, infrastructure, ecology/landscaping	Water Resource Management Plans; compliance with Part G; sensitive planting regimes and use of drought-resilient planting; risk management.	N/A	Negligible to Minor Adverse, Not significant	
	Heavy rainfall & flooding affecting site users, infrastructure, ecology/landscaping	Use of Suds and attenuation basins	N/A	Minor Adverse, Not significant	
Noise & Vibration	Internal sound levels	Re-orientation of some buildings	Acceptable internal sound levels	Negligible, significant	Not
	External amenity sound levels	Shielded by buildings and orientation	Acceptable external sound levels	Negligible, significant	Not
	Operational plant noise	Mitigation may be required to ensure compliance with BS 4142	Reduced sound levels to all receivers	Negligible, significant	Not
	Operational traffic noise	N/A	N/A	Negligible, significant	Not

TOPIC	DESCRIPTION OF LIKELY IMPACT	MITIGATION	DESCRIPTION OF RESIDUAL EFFECT	SIGNIFICANCE – (Year 10 Landscape/Visual)
Cumulative	Urbanising effect on landscape character area LCT J2 in association with Lodden Garden Village	Associated Planting	Urbanising effect on landscape character area LCT J2 in association with Lodden Garden Village	Minor Adverse, Not significant

Appendix title goes here





For further details contact:

Sarah R Smith

07787 527109

sarah.r.smith@rapleys.com

120 Colmore Row Birmingham B3
3AP

Rapleys LLP is registered as a Limited Liability Partnership in England and Wales.
Registration No: OC308311. Registered Office at Unit 3a, The Incubator, The Boulevard,
Enterprise Campus, Alconbury Weald, Huntingdon, PE28 4XA. Regulated by RICS.

rapleys.com
0370 777 6292

RAPLEYS