Planning Policy relevant to Landscape and Visual Considerations

6.3.1 Current policy within the South Cambridgeshire Local Plan (2018) requires that new development responds to and protects the character of the local and wider area and enhances biodiversity and green infrastructure. Public art should be included within development of over 1000m^2. The setting of heritage assets (Policy NH/14) is a matter to be considered carefully and the character of views from PRoW leading out of historic settlements like Lolworth, Boxworth and Conington will be addressed in an appropriate and sensitive manner. Emerging policy also stresses the importance of improving networks of habitats and green spaces for people and promoting healthy living. Importantly, the Greater Cambridge Local Plan First Proposals requires that development sustain the unique character of South Cambridgeshire, *"and complement it with beautiful and distinctive development"*.

6.4 Assessment Methodology

6.4.1 The assessment of the likely significant effects will be undertaken using the methodology set out below. The methodology, set out in full in Appendix 6.1 LVIA Methodology, draws from the 'Guidelines for Landscape and Visual Impact Assessment' Third Edition, prepared by the Landscape Institute and Institute of Environmental Management and Assessment, 'An approach to Landscape Character Assessment', prepared by Natural England, the Landscape Institute TGN 02/21 'Assessing the Value of Landscapes Outside National Designations', the Landscape Institute TGN 06/19 'Visual Representation of Development Proposals', published Planning Practice Guidance from the Government, and professional experience.

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

- The baseline analysis has been based on information readily available at the time of undertaking the analysis;
- During Site visits, weather conditions, the time of day and seasonal factors have influenced the visual assessment and photographic record of the Site. Every effort has been made to ensure that the photographs and their locations are 'representative' of the Site and its surroundings; and,
- Access to assess the predicted visual effects from private individual properties outside the Site has not been obtained. As a result, the assessment of likely visual effects will be made from vantage points with representative views taken from the nearest available public viewpoint in combination with the views available from the Site itself.

Geographical Scope

6.4.3 A desktop review of the study area was undertaken, including a review of published landscape character information and relevant landscape and visual policy, and analysis of landscape context, landform, landscape features and landscape designations. Visits to the Site and surroundings were subsequently undertaken in November 2022, March 2023 and again in March 2025 to verify the desk-based review findings and add further information to the landscape and visual context of the Site. These factors combine to provide an understanding of landscape value and sensitivity and provide an indication of key views and viewpoints that are available to visual receptors.

6.4.4 To determine the extent of visual influence, a visual appraisal was undertaken of the Site and its surroundings to consider the nature of existing views from publicly accessible viewpoints including roads, Public Rights of Way (PRoW) and public open space. Consideration was given to private views, however access to private properties was not obtained. A series of representative views were subsequently selected to demonstrate the character of the Site and the study area and to represent the visual experience of visual receptors in the study area.

Views were considered from all directions and from a range of distances. These are shown on Figure 6.5.

6.4.5 The study area for this assessment corresponds to the extents shown on Figure 6.1.

Temporal Scope

6.4.6 Details on the temporal scope of the Landscape and Visual Impact Assessment can be found in Appendix 6.1. Effects are considered for the construction period, Proposed Development at Year 1 of the operational phase (once the Proposed Development has been completed); and at a point where planting associated with the Proposed Development will be established, i.e. Year 15.

6.5 Likely Significant Effects

Construction Phase

6.5.1 Listed below in Table 6.1 are the receptors considered to have the potential to be subject to significant landscape and visual effects as a result of the construction phase. Note that these receptors are not necessarily considered likely to be subject to significant effects, merely that they have this potential, and as such are scoped into the assessment.

Table 6.1: Likely Significant Effects during Construction

Receptor	Effects	Scoped in
LCA 4A: Croxton to Conington Wooded Claylands	The introduction of temporary structures, construction equipment and activity of plant and workers will result in a direct change to the character of a limited part of the LCA, affecting the level of its scenic quality and tranquillity.	✓
LCA 2A: Longstanton Fen Edge Claylands	The introduction of temporary structures, construction equipment and activity of plant and workers will result in an indirect change to the character of a small part of the LCA, affecting the level of its scenic quality and tranquillity.	✓
LCA 4B: Lolworth to Longstowe Wooded Claylands	The introduction of temporary structures, construction equipment and activity of plant and workers will result in an indirect change to the character of a small part of the LCA, affecting the level of its scenic quality and tranquillity.	✓
The character of the Site and its immediate vicinity	The introduction of temporary structures, construction equipment and activity of plant and workers will result in a direct change to a large proportion of the Site and its immediate vicinity, affecting the level of its scenic quality and tranquillity.	✓
The gateway approach to Cambridge along the A14	The introduction of temporary structures, construction equipment and activity of plant and workers will result in a direct change to a small proportion of the gateway approach to Cambridge, affecting the perception of character and scenic quality along the route.	✓
The gateway approach to Boxworth along Boxworth Road	The introduction of temporary structures, construction equipment and activity of plant and workers will result in a direct change to a large proportion of the gateway approach to Boxworth, affecting the perception of character and scenic quality.	✓
Vegetated field boundaries	It is likely that the majority of the hedgerows will be removed for construction purposes, although boundary sections may be retained.	✓
Agricultural land within the Site	The majority of the Site comprises grassland, which is of a simple structure and easily replaced, although with limited	✓

Receptor	Effects	Scoped in
	prospect of being reinstated. A high proportion of the existing grassland will be lost during the construction phase.	
Motorists on the A14 and the J15 interchange (Site Context Photographs 1, 9 and 10)	Motorists will vary in sensitivity, with motorists on the A14 passing at higher speeds, whereas pedestrians and motorists using the interchange will be more focussed on appreciation of the landscape and the construction works will be visible to them for a greater length of time will have near to medium distance, glimpsed to open, fixed views of the equipment, materials and activity associated with the construction phase.	✓
Motorists, cyclists and pedestrians on Boxworth Road, the A1037 (Huntingdon Road) and other highways north of the A14 (Site Context Photographs 2, 3, 10 and 12)	Road users will vary in sensitivity, with motorists passing at higher speeds, whereas pedestrians and cyclists will be more focussed on appreciation of the landscape and the construction works will be visible to them for a greater length of time will have near to medium distance, glimpsed to open, fixed views of the equipment, materials and activity associated with the construction phase.	✓
Pedestrians using the J14 interchange footbridge (Site Context Photograph 1)	Pedestrians crossing the footbridge in southern direction will have an elevated near distance, open, fixed view of the equipment, materials and activity associated with the construction phase.	✓
Users of PRoW 53/4 and 27/1 (Site Context Photographs 7 and 8)	Users of this route between Boxworth and Conington will have near to medium views of the equipment, materials and activity associated with the construction phase. These views will be partially screened and filtered by intervening vegetation.	✓
Walkers on PRoW 150/1 (Site Context Photographs 4 and 5)	Pedestrians on this route between Boxworth and Lolworth will have medium distance, glimpsed to partial, transient views of the equipment, materials and activity associated with the construction phase. These views will be partially screened and filtered by intervening vegetation.	✓
Workers and residents at isolated farmsteads and dwellings within the study area including Friesland Farm, Thorpes Farm, Trinity House and Yarmouth Farm	Receptors will experience glimpsed to partial, fixed views of the equipment, materials and activity associated with the construction phase. These views will be partially screened and filtered by intervening vegetation.	✓
Residents of dwellings on settlement edges within the study area, including on the northern edge of Boxworth and the southern edge of Swavesey,	Receptors will experience glimpsed to partial, fixed views of the equipment, materials and activity associated with the construction phase. These views will be partially screened and filtered by intervening vegetation.	✓

Operational Phase

6.5.2 Listed below in Table 6.2 are the receptors considered to have the potential to be subject to significant landscape and visual effects as a result of the operational phase. Note that these receptors are not necessarily considered likely to be subject to significant effects, merely that they have this potential, and as such are scoped into the assessment.

Table 6.2: Likely Significant Effects for the Completed Development

Receptor	Effects	Scoped in
LCA 4A: Croxton to Conington Wooded Claylands	The introduction of commercial built form within an existing area of agricultural land will result in a direct change to the character of a small part of the LCA, including the level of its tranquillity. However, commercial development is not an uncharacteristic influence within this LCA.	✓
The character of the Site and its immediate vicinity	The introduction of commercial built form within the agricultural land of the Site will result in a direct change to a large proportion of the Site and its immediate vicinity, including the level of its tranquillity. However, the Proposed Development will be integrated into its landscape context by a comprehensive green infrastructure strategy.	✓
The gateway approach to Boxworth along Boxworth Road	The introduction commercial built form will result in a direct change to a large proportion of the gateway approach to Boxworth, affecting the perception of character and scenic quality.	✓
Vegetated field boundaries	Whilst there will be loss of vegetation within to site to accommodate the commercial built form, the quantity and ecological and scenic quality of the retained hedgerows will benefit from reinforcement planting and an improved management regime.	✓
Agricultural land within the Site	The majority of the Site comprises arable grassland, which is of a simple structure and easily replaced, although with limited prospect of being reinstated. A high proportion of the existing grassland will be lost during the construction phase and most of the lost grassland will not have been reinstated by the operational phase. However, during the operational phase, the ecological and scenic value of the retained grassland will benefit from an improved management regime.	✓
Motorists, cyclists and pedestrians on Boxworth Road, the A1037 (Huntingdon Road) and other highways north of the A14 (Site Context Photographs 2, 3, 10 and 12)	Road users will have near distance views of the proposed commercial built form, and over time the Proposed Development will become softened and integrated within its landscape context by the comprehensive landscape strategy proposed for the scheme.	✓
Pedestrians using the J14 interchange footbridge (Site Context Photograph 1)	Pedestrians crossing the footbridge in southern direction will have an elevated near distance, open, fixed view of the proposed commercial development integrated within its landscape context by the comprehensive landscape strategy proposed for the scheme.	✓
Users of PRoW 53/4 and 27/1 (Site Context Photographs 7 and 8)	Users of this route between Boxworth and Conington will have near to medium views of the proposed commercial built form. These views will be partially screened and filtered by intervening vegetation.	✓
Walkers on PRoW 150/1 (Site Context Photographs 4 and 5)	Pedestrians on this route between Boxworth and Lolworth will have medium distance, glimpsed to partial, transient views of the proposed commercial built form. These views will be partially screened and filtered by intervening vegetation.	✓
Workers and residents at Friesland Farm,	Receptors will experience close range, fixed views of the proposed commercial development integrated within its landscape context by the comprehensive landscape strategy proposed for the scheme.	✓

Receptor	Effects	Scoped in
Residents of dwellings on settlement edges within the study area, including on the northern edge of Boxworth and the southern edge of Swavesey,	Receptors will experience glimpsed to partial, fixed views of the proposed commercial development. These views will be partially screened and filtered by intervening vegetation.	✓

6.6 Impacts Scoped Out of the Assessment

6.6.1 Listed below in Table 6.3 are the receptors considered not to have the potential to be subject to significant landscape and visual effects as a result of the demolition, construction or operational phase. As such they are scoped out of the assessment.

Table 6.3: Non-Significant Effects Proposed to be Scoped out of ES

Receptor	Effects	Scoped in
NCA 88: Bedfordshire and Cambridgeshire Claylands	The Proposed Development between Cambridge and Huntingdon at the northern end of the NCA would forms a very small part of the wider NCA. The additional commercial development would cause a very slight change given the large scale of the NCA and would represent the expansion of an existing development type and deliver accessible natural greenspace.	X
Pedestrians, cyclists and horse riders on other PRoW within the study area	Little or no intervisibility has been identified between the Site and other PRoW within the study area.	X

6.7 Likely Mitigation

6.7.1 Primary mitigation measures will include:

- Locating built form on the low-lying eastern parts of the Site, consolidating such built form around Junction 24, Cambridge Services and Buckingway Business Park;
- Treat north and eastern site areas sensitively and reduce adverse effects on users of PRoW 27/1 and 150/1; and
- Provide a sensitive treatment along Boxworth Road on the Site's eastern boundary to enhance the approach to Boxworth from the north.

6.7.2 Secondary mitigation measures will include:

- Biodiversity enhancements within a comprehensive landscape structure of grasslands and suitable semi-natural habitats;

6.7.3 Recessive colouration of the facades of the development and considered articulation of the roofscape (with the potential for stepping up and down and breaking the perceived 'monolithic' horizontal massing) and volume will help to limit adverse landscape and visual effects.

6.8 Cumulative Effects

6.8.1 The Landscape and Views ES chapter will consider committed developments and assess any potential cumulative impacts with the Proposed Development for developments within 2km of the Proposed Development Site.

6.9 Summary

6.9.1 Table 6.4 summarises the likely construction, operational and cumulative effects of the Proposed Development.

Table 6.4: Landscape and Visual Effects Scope

Construction/ Operation	Receptor	Effects	Scoped in
Construction	LCA 4A: Croxton to Conington Wooded Claylands	The introduction of temporary structures, construction equipment and activity of plant and workers will result in a direct change to the character of a limited part of the LCA, affecting the level of its scenic quality and tranquillity.	✓
	LCA 2A: Longstanton Fen Edge Claylands	The introduction of temporary structures, construction equipment and activity of plant and workers will result in an indirect change to the character of a small part of the LCA, affecting the level of its scenic quality and tranquillity.	✓
	LCA 4B: Lolworth to Longstowe Wooded Claylands	The introduction of temporary structures, construction equipment and activity of plant and workers will result in an indirect change to the character of a small part of the LCA, affecting the level of its scenic quality and tranquillity.	✓
	The character of the Site and its immediate vicinity	The introduction of temporary structures, construction equipment and activity of plant and workers will result in a direct change to a large proportion of the Site and its immediate vicinity, affecting the level of its scenic quality and tranquillity.	✓
	The gateway approach to Cambridge along the A14	The introduction of temporary structures, construction equipment and activity of plant and workers will result in a direct change to a small proportion of the gateway approach to Cambridge, affecting the perception of character and scenic quality along the route.	✓
	The gateway approach to Boxworth along Boxworth Road	The introduction of temporary structures, construction equipment and activity of plant and workers will result in a direct change to a large proportion of the gateway approach to Boxworth, affecting the perception of character and scenic quality.	✓
	Vegetated field boundaries	It is likely that the majority of the hedgerows will be removed for construction purposes, although boundary sections may be retained.	✓
	Agricultural land within the Site	The majority of the Site comprises grassland, which is of a simple structure and easily replaced, although with limited prospect of being reinstated. A high proportion of the existing grassland will be lost during the construction phase.	✓
	Motorists on the A14 and the J15 interchange (Site	Motorists will vary in sensitivity, with motorists on the A14 passing at higher speeds, whereas pedestrians and motorists using the interchange will be more focussed on appreciation of the landscape and the	✓

Construction/ Operation	Receptor	Effects	Scoped in
	Context Photographs 1, 9 and 10)	construction works will be visible to them for a greater length of time will have near to medium distance, glimpsed to open, fixed views of the equipment, materials and activity associated with the construction phase.	
	Motorists, cyclists and pedestrians on Boxworth Road, the A1037 (Huntingdon Road) and other highways north of the A14 (Site Context Photographs 2, 3, 10 and 12)	Road users will vary in sensitivity, with motorists passing at higher speeds, whereas pedestrians and cyclists will be more focussed on appreciation of the landscape and the construction works will be visible to them for a greater length of time will have near to medium distance, glimpsed to open, fixed views of the equipment, materials and activity associated with the construction phase.	✓
	Pedestrians using the J14 interchange footbridge (Site Context Photograph 1)	Pedestrians crossing the footbridge in southern direction will have an elevated near distance, open, fixed view of the equipment, materials and activity associated with the construction phase.	✓
	Users of PRoW 53/4 and 27/1 (Site Context Photographs 7 and 8)	Users of this route between Boxworth and Conington will have near to medium views of the equipment, materials and activity associated with the construction phase. These views will be partially screened and filtered by intervening vegetation.	✓
	Walkers on PRoW 150/1 (Site Context Photographs 4 and 5)	Pedestrians on this route between Boxworth and Lolworth will have medium distance, glimpsed to partial, transient views of the equipment, materials and activity associated with the construction phase. These views will be partially screened and filtered by intervening vegetation.	✓
	Workers and residents at isolated farmsteads and dwellings within the study area including Friesland Farm, Thorpes Farm, Trinity House and Yarmouth Farm	Receptors will experience glimpsed to partial, fixed views of the equipment, materials and activity associated with the construction phase. These views will be partially screened and filtered by intervening vegetation.	✓
	Residents of dwellings on settlement edges within the study area, including on the northern edge of Boxworth and the southern edge of Swavesey,	Receptors will experience glimpsed to partial, fixed views of the equipment, materials and activity associated with the construction phase. These views will be partially screened and filtered by intervening vegetation.	✓
Operation	LCA 4A: Croxton to Conington Wooded Claylands	The introduction of commercial built form within an existing area of agricultural land will result in a direct change to the character of a small part of the LCA, including the level of its tranquillity. However, commercial development is not an uncharacteristic influence within this LCA.	✓
	The character of the Site and its immediate vicinity	The introduction of commercial built form within the agricultural land of the Site will result in a direct change to a large proportion of the Site and its immediate vicinity, including the level of its tranquillity.	✓

Construction/ Operation	Receptor	Effects	Scoped in
		However, the Proposed Development will be integrated into its landscape context by a comprehensive green infrastructure strategy.	
	The gateway approach to Boxworth along Boxworth Road	The introduction commercial built form will result in a direct change to a large proportion of the gateway approach to Boxworth, affecting the perception of character and scenic quality.	✓
	Vegetated field boundaries	Whilst there will be loss of vegetation within to site to accommodate the commercial built form, the quantity and ecological and scenic quality of the retained hedgerows will benefit from reinforcement planting and an improved management regime.	✓
	Agricultural land within the Site	The majority of the Site comprises arable grassland, which is of a simple structure and easily replaced, although with limited prospect of being reinstated. A high proportion of the existing grassland will be lost during the construction phase and most of the lost grassland will not have been reinstated by the operational phase. However, during the operational phase, the ecological and scenic value of the retained grassland will benefit from an improved management regime.	✓
	Motorists, cyclists and pedestrians on Boxworth Road, the A1037 (Huntingdon Road) and other highways north of the A14 (Site Context Photographs 2, 3, 10 and 12)	Road users will have near distance views of the proposed commercial built form, and over time the Proposed Development will become softened and integrated within its landscape context by the comprehensive landscape strategy proposed for the scheme.	✓
	Pedestrians using the J14 interchange footbridge (Site Context Photograph 1)	Pedestrians crossing the footbridge in southern direction will have an elevated near distance, open, fixed view of the proposed commercial development integrated within its landscape context by the comprehensive landscape strategy proposed for the scheme.	✓
	Users of PRoW 53/4 and 27/1 (Site Context Photographs 7 and 8)	Users of this route between Boxworth and Conington will have near to medium views of the proposed commercial built form. These views will be partially screened and filtered by intervening vegetation.	✓
	Walkers on PRoW 150/1 (Site Context Photographs 4 and 5)	Pedestrians on this route between Boxworth and Lolworth will have medium distance, glimpsed to partial, transient views of the proposed commercial built form. These views will be partially screened and filtered by intervening vegetation.	✓
	Workers and residents at Friesland Farm,	Receptors will experience close range, fixed views of the proposed commercial development integrated within its landscape context by the comprehensive landscape strategy proposed for the scheme.	✓
	Residents of dwellings on settlement edges within the study area, including on the northern edge of Boxworth and the	Receptors will experience glimpsed to partial, fixed views of the proposed commercial development. These views will be partially screened and filtered by intervening vegetation.	✓

Construction/ Operation	Receptor	Effects	Scoped in
	southern edge of Swavesey,		
Construction and Operation	NCA 88: Bedfordshire and Cambridgeshire Claylands	The Proposed Development between Cambridge and Huntingdon at the northern end of the NCA would forms a very small part of the wider NCA. The additional commercial development would cause a very slight change given the large scale of the NCA and would represent the expansion of an existing development type and deliver accessible natural greenspace.	X
	Pedestrians, cyclists and horse riders on other PRoW within the study area	Little or no intervisibility has been identified between the Site and other PRoW within the study area.	X

7 Ecology

7.1 Introduction

7.1.1 An assessment will be undertaken of the likely significant effects of the Proposed Development on the environment with respect to Ecology and Biodiversity.

7.2 Baseline Conditions

Desk Study

7.2.1 Cambridgeshire and Peterborough Environmental Records Centre (CPERC) was contacted to compile background information on the site and its immediate surroundings with further information on designated sites obtained from the Multi-Agency Geographic Information for the Countryside (MAGIC) database, which uses information held by Natural England and other organisations.

Habitat Survey

7.2.2 Habitat surveys have previously been conducted by Ecology Solutions in March 2021, September 2022 and July 2023, with a further habitat survey due to be undertaken in 2025 given the extent of the intervening time. This habitat survey will be based on UK Habitat Classification (UKHab)[45] methodology, whereby primary and secondary habitats are classified and mapped, together with an assessment of the species composition of each habitat, as recommended by Natural England.

7.2.3 As of July 2023, the Site comprises cereal crops, non-cereal crops, other neutral grassland, ruderal / ephemeral, mixed scrub, Blackthorn *Prunus spinosa* scrub, Ponds (non-priority habitat), developed land; sealed surface, rural trees, line of trees, native hedgerows, species-rich native hedgerows and ditches.

Faunal Survey

7.2.4 The habitats present at the Site have also been appraised for their suitability to support protected, priority or otherwise notable species, with specific surveys for Badgers *Meles meles*, bats, Otters *Lutra lutra*, Water Voles *Arvicola amphibius*, wintering and breeding birds, reptiles and Great Crested Newts *Triturus cristatus* undertaken by Ecology Solutions between 2021 and 2023. Considering the extent of the intervening time since the completion of these surveys in relation to expected submission date, Ecology Solutions is currently undertaking a suite of updated surveys throughout 2025. The methodology for these surveys is provided individually below.

Badgers

7.2.5 Badger surveys have previously been undertaken in March and October 2021, September 2022 and July 2023, with an additional three surveys planned for 2025. These surveys comprise a thorough search of the site for evidence of Badger activity, such as setts, well-worn paths and run-throughs, snagged hair, footprints, latrines and foraging signs, to build up a picture of the use of the site by this species.

7.2.6 Four Badger setts were identified during the surveys undertaken prior to 2025. Of these, three are outlier / subsidiary setts and one is a main sett. As of 2023, one outlier sett was considered inactive, albeit with prior activity observed in 2021, while the other two, in addition

[45] UKHab Ltd (2023) *UK Habitat Classification Version 2.0* (at https://ukhab.org)

to the main sett, showed signs of continued activity including fresh spoil, footprints, hair, old bedding and multiple latrines.

7.2.7 The Site is considered to offer good foraging and dispersal opportunities for Badgers through the field margin habitats, with evidence of foraging recorded along the western boundary. The site is well connected to suitable habitat, at least to the south, however, the A14 dual carriageway presents a strong dispersal barrier to the north.

Bats

7.2.8 Bat surveys take a three-pronged approach, with a ground level roost assessment conducted to appraise all trees within and immediately adjacent to the Site for their potential to support roosting bats and activity transect surveys and remote surveys conducted to determine the Site's suitability to support foraging and commuting bats.

7.2.9 Features searched for during the ground level roost assessment include holes, cavities, splits, loose bark, dark staining on the tree below a hole, small scratch marks around a hole and a very dense covering of mature Ivy *Hedera helix*. Such surveys have already been completed in March 2021, September 2022 and July 2023, with an additional survey planned for 2025. The surveys conducted to date indicated that no trees containing Potential Roosting Features (PRFs) suitable of supporting roosting bats are present on-Site.

7.2.10 Activity transect and remote surveys, undertaken with regard to best practice guidelines issued by Natural England46, the Joint Nature Conservation Committee (JNCC)47 and the Bat Conservation Trust (BCT) 4849, have previously been conducted throughout 2021, 2022 and 2023, with three activity transect surveys (one each in spring, summer and autumn) and a further seven remote surveys (monthly between April and October) to be completed in 2025.

7.2.11 Activity transect surveys, which commence at sunset and continue for approximately 120 minutes during suitable weather conditions, involve surveyors using iPads paired with Echo Meter Touch 2 PRO bat detectors walking set transect routes that encompass the majority of the site noting the species, number and behaviour of any bats recorded. Calls are subsequently analysed using Kaleidoscope bat sound analysis software. Remote surveys involve the deployment of static SM4BAT bat detectors on-site for periods of at least five consecutive nights that are programmed to record from 30 minutes before sunset to 30 minutes after sunrise, with the data subsequently analysed using Kaleidoscope software.

7.2.12 The native and species-rich native hedgerows, line of trees, trees and mixed Blackthorn scrub habitats are considered to be of interest for foraging and dispersing bats. Most of the bat surveys completed to date confirmed relatively low levels of bat activity associated with these habitats and, of the nine species identified on-site across the survey effort completed to date, most registrations were attributed to Common Pipistrelle, a relatively common and widespread species. Although Barbastelle, a rarer bat species, was infrequently recorded during the survey work the low detection rate would suggest that the site is not of great importance for this species.

[46]Mitchell-Jones, A. J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

[47]Mitchell-Jones, A.J. & McLeish, A.P. (Eds.) (2004). *Bat Workers' Manual*. 3rd Edition. Joint Nature Conservation Committee, Peterborough.

[48] Collins, J. (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. 3rd Edition. The Bat Conservation Trust, London.

[49] Collins, J. (ed.) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition)*. The Bat Conservation Trust, London.

Otters

7.2.13 Otters may be present in watercourses of varying sizes ranging from small lakes to rivers, estuaries and coasts. The site was assessed for its suitability to support Otters in March and October 2021, September 2022 and July 2023, with a further two surveys planned for 2025. During these surveys signs such as spraint, footprints, slides, holts and couches are sought for. As of 2023, no evidence was recorded for this species and the on-Site ditches were not considered to offer any suitability for Otters, with these found to be dry or only damp throughout the survey effort.

Water Voles

7.2.14 The suitability of the site to support Water Voles has been assessed in March and October 2021, September 2022 and July 2023, with a further two surveys planned for 2025. As Water Voles are rarely seen, these surveys consist of a close examination of all ditches present throughout site for characteristic field signs, such as Faeces, Latrines, Feeding Stations, Burrows and Footprints, in addition to any Water Voles that may be observed directly. The survey work undertaken up to 2023 found the on-Site ditches to be dry, or only damp, and in many instances culverted when entering the site. Due to this, in combination with the absence of any evidence suggesting the presence of Water Voles on-Site, it is considered that this species is unlikely to utilise the site.

Hedgehogs

7.2.15 While no specific surveys have been undertaken for Hedgehogs *Erinaceus europaeus*, it is considered that the Site contains suitable hedgerow, scrub and grassland field boundary habitats to provide foraging, refuge and hibernation opportunities for this species. Therefore, the presence of Hedgehogs on-site cannot be ruled out.

Birds

7.2.16 The utilisation of the Site by birds is determined through a series of wintering and breeding bird surveys. These have previously been conducted throughout 2021 and 2023, with an additional three wintering bird surveys and three breeding bird surveys to be conducted throughout 2025. Bird surveys consist of an experienced ornithologist slowly walking a transect of the site that commences at sunrise during suitable weather conditions that is designed to take in all the different on-site habitats and to allow visual inspections of all open habitats. The surveyor records the locations, numbers and activity of all bird species present on, over and adjacent to Site. This methodology ensures that the majority of species that use the site would be recorded over the course of the visits.

7.2.17 The Site supports good opportunities for nesting and foraging birds through the intersecting and bounding hedgerow, line of tree, tree and scrub habitats, with the arable fields and grassland and ruderal / ephemeral field margins also presenting opportunities for ground nesting species.

7.2.18 The wintering and breeding bird surveys undertaken to date recorded six species listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)[50] including Little Ringed Plover *Charadrius dubius*, Quail Coturnix *coturnix*, Hobby *Falco subbuteo*, Red Kite *Milvus milvus*, Redwing *Turdus iliacus* and Fieldfare *Turdus pilaris*. Both Redwing and Fieldfare are winter migrants and would therefore would not be expected to utilise the site for breeding purposes. Only single individuals of Hobby and Red Kite were recorded, with these observed flying over / adjacent to Site with there being no indication that these species are using the Site for breeding purposes. The Quail, however, was calling, indicating that it was a possible breeder. Little Ringed Plover is the most notable species recorded on-Site, with this species

[50] Wildlife and Countryside Act 1981, chapter 69. https://www.legislation.gov.uk/ukpga/1981/69

confirmed to be breeding towards the north-eastern corner of the Site, with a peak count of six adults (including two pairs) and three juveniles on 21 June 2023. This species was also recorded off-site, past Boxworth Road, beyond the eastern site boundary. The breeding bird survey conducted in April 2025 indicates that this species remains present, with a count of five individuals.

7.2.19 Additional notable species recorded on and adjacent to Site across the bird surveys include Skylark *Alauda arvensis*, Mallard *Anas platyrhynchos*, Greylag Goose *Anser anser*, Meadow Pipit *Anthus pratensis*, Swift *Apus apus*, Linnet *Carduelis cannabina*, Greenfinch *Carduelis chloris*, Ringed Plover *Charadrius hiaticula*, Black-headed Gull *Chroicocephalus ridibundus*, Stock Dove *Columba oenas*, Rook *Corvus frugilegus*, Corn Bunting *Emberiza calandra*, Yellowhammer *Emberiza citrinella*, Reed Bunting *Emberiza schoeniclus*, Kestrel *Falco tinnunculus*, Snipe *Gallinago gallinago*, Oystercatcher *Haematopus ostralegus*, Herring Gull *Larus argentatus*, Common Gull *Larus canus*, Lesser Black-backed Gull *Larus fuscus*, Yellow Wagtail *Motacilla flava*, Grey Partridge *Perdix perdix*, Dunnock *Prunella modularis*, Bullfinch *Pyrrhula pyrrhula*, Woodcock *Scolopax rusticola*, Starling *Sturnus vulgaris*, Wren *Troglodytes troglodytes*, Song Thrush *Turdus philomelos*, Mistle Thrush *Turdus viscivorus* and Lapwing *Vanellus vanellus*.

7.2.20 Species confirmed to nest on and adjacent to Site include Buzzard *Buteo buteo*, Little Ringed Plover, Carrion Crow *Corvus corone*, Jackdaw *Corvus monedula*, Common Moorhen *Gallinula choropus*, Great Tit *Parus major* and Magpie *Pica pica*. Additionally, Reed Warbler *Acrocephalus scirpaceus*, Skylark, Linnet *Carduelis cannabina*, Goldfinch *Carduelis carduelis*, Corn Bunting, Yellowhammer, Reed Bunting, Robin *Erithacus rubecula*, Chaffinch *Fringilla coelebs*, Pheasant *Phasianus colchicus*, Chiffchaff *Phylloscopus collybita*, Willow Warbler *Phylloscopus trochilus*, Dunnock, Blackcap *Sylvia atricapilla*, Whitethroat *Sylvia communis*, Wren, Blackbird *Turdus merula* and Song Thrush are all considered to be possible breeders.

Reptiles

7.2.21 Specific surveys for reptiles were carried out in September and early October 2021 and in May, June and July 2023, with updated surveys to be undertaken in 2025. The methodology utilised principally derives from guidance from Froglife Advice Sheet 1051, the Herpetofauna Workers' Manual[52], the Herpetofauna Groups of Britain and Ireland's (HGBI) advisory note[53] and Natural England's Standing Advice for Reptiles[54] and comprises of the deployment of artificial refugia within suitable habitat which provide shelter and heat up more quickly than their surroundings in the morning and can remain warmer than their surroundings in the late afternoon. Being ectothermic, reptiles use said refugia to bask under and raise their body temperature which allows them to forage earlier and later in the day. To determine presence / absence, these refugia are checked for reptile activity over seven visits at appropriate times of the day during suitable weather conditions. While the site contains tussocky grassland field margins identified as being capable of supporting common reptile species, the presence / absence surveys conducted in 2021 and 2023 indicated that this group is absent from Site.

[51] Froglife (1999). *Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation.* Froglife Advice Sheet 10. Froglife, Halesworth.

[52] Gent, T and Gibson, S. (2003). *Herpetofauna Workers' Manual*. JNCC, Peterborough.

[53] HGBI (1998). *Evaluating Local Mitigation / Translocation Programmes: Maintaining Best Practice and Lawful Standards*.

[54] Natural England (2011). *Standing Advice for Reptiles*. http://www.naturalengland.org.uk/Images/Reptile%20feb11_tcm6-21712.pdf

Great Crested Newts

7.2.22 The presence of Great Crested Newts in ponds within and surrounding Site has been determined by undertaking Habitat Suitability Index (HSI)[55] assessments, eDNA and population class action surveys upon on-site ponds and off-site ponds within 500 m of the site boundary not separated by a dispersal barrier, where access was granted. HSI is a numerical index that indicates the suitability of a pond for Great Crested Newts. On and off-Site ponds were subject to a HSI assessment in May 2021 and again in July 2023, according to guidance set out by the National Amphibian and Reptile Recording Scheme.

7.2.23 eDNA testing, approved by Natural England, was undertaken in May 2021. While residing within a waterbody, Great Crested Newts deposit traces of DNA which can be detected through sampling the pond water and undergoing analysis within the laboratory. A result of presence or absence is returned by the laboratory, however, if found to be present, no measure of the population size is obtained through this survey method.

7.2.24 Due to the confirmation of the presence of Great Crested Newts within Pond P7, an off-Site pond beyond the eastern extent of the southern Site boundary, through the eDNA survey, a total of six traditional population class surveys, required to establish a population size, were undertaken on this pond in May and June 2021, all of which were performed during suitable weather conditions using two methods per visit (torch survey and bottle-trapping) in accordance with the Natural England (previously English Nature) guidelines[56]. The terrestrial habitat within and immediately adjacent to Site was also assessed in terms of its potential to support Great Crested Newts, with the field boundaries considered to contain suitable habitat to support this species.

Designated Sites

7.2.25 There are no statutory designations of nature conservation value within or immediately adjacent to Site. The closest Site of Special Scientific Interest (SSSI) is Overhaul Grove SSSI, which lies approximately 2km beyond the southern Site boundary. The closest Local Nature Reserve (LNR) is Mare Fen LNR located approximately 2.7km north of the Site. Ouse Washes Ramsar, Special Protection Area (SPA), Special Area of Conservation (SAC) and SSSI is situated further afield. This designated site is located approximately 9.7km north of the Site and is one of the most extensive areas of seasonally-flooding washlands of its type in Britain.

7.2.26 Given the intervening distance between the Proposed Development and Ouse Washes Ramsar, SPA, SAC and SSSI, in addition to the absence of wetland habitat on or adjacent to Site, it is not considered that they would be functionally linked and, therefore, no detrimental effects upon this designated site are anticipated. Similarly, owing to the intervening distances and the nature of the Proposed Development, it is considered highly unlikely that any adverse impacts will occur on any other statutory designated sites within the vicinity of the proposals.

7.2.27 There are also no non-statutory designated sites within or directly adjacent to the site boundary. The closest non-statutory site is Boxworth Protected Road Verge (PRV) City Wildlife Site (CWS) located approximately 1.8km south-west of the Site. Again, due to the intervening distances involved, it is considered highly unlikely that any adverse impacts will occur on this, or any other, non-statutory designated sites as a result of the Proposed Development.

[55] Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus*). Herpetological Journal 10 (4), 143-155.

[56] English Nature (2001). *Great Crested Newt Mitigation Guidelines*. https://cieem.net/resource/great-crested-newt-mitigation-guidelines/

Receptors

7.2.28 The following ecological receptors were identified during survey work and have been considered in the scope of works below:

- Arable farmland (cereal crops and non-cereal crops);
- Other neutral grassland;
- Ruderal / ephemeral;
- Scrub (mixed scrub and Blackthorn scrub);
- Ponds (non-priority habitat);
- Developed land (sealed surface);
- Rural trees;
- Line of trees;
- Hedgerows (native hedgerows and species-rich native hedgerows);
- Ditches;
- Badgers;
- Bats;
- Otters;
- Water Voles;
- Hedgehogs;
- Birds (wintering and breeding birds);
- Reptiles;
- Great Crested Newts; and
- Designated sites (statutory and non-statutory).

7.3 Approach

The National, Local, and Regional Planning Policy Context

7.3.1 The following national, local and regional policies will be considered during the ES Chapter:

- National Planning Policy Framework (NPPF) (December 2024);

- The South Cambridgeshire Local Plan[57] (in particular policies NH/4, NH/5, NH/6 and NH/8);
- Greater Cambridge Shared Planning Biodiversity Supplementary Planning Document (SPD) [58]; and
- Emerging Greater Cambridge Local Plan

7.4 Assessment Methodology

Establishing Baseline Conditions

7.4.1 Habitat and protected species surveys have been undertaken in 2021 and 2023 and will continue to be undertaken at the Site in 2025, where required, to inform the assessment. The following determinants are currently being reassessed:

- Habitats;
- Badgers;
- Bats;
- Water Voles;
- Otters;
- Birds (wintering and breeding); and
- Reptiles.

Future Baseline

7.4.2 If the Proposed Development were not to come forward, it is expected that the Site would remain in its current state as a recreational park and agricultural fields. This would maintain habitats at their current state.

Assessment Approach

7.4.3 Guidance used to inform the assessment would be principally issued by the Chartered Institute of Ecology and Environmental Management (CIEEM). The assessment of potential likely significant effects will be undertaken using the following guidelines:

- 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (CIEEM 2019)[59];
- 'Guidelines for Preliminary Ecological Appraisal' (CIEEM 2017)[60]; and

[57] South Cambridgeshire District Council (2018). *South Cambridgeshire Local Plan*. https://www.scambs.gov.uk/media/h0vjdqxj/south-cambridgeshire-adopted-local-plan-2018-1.pdf

[58] Greater Cambridge Shared Planning (2022). *Biodiversity SPD*. https://www.greatercambridgeplanning.org/media/2504/gcsp-biodiversity-spd-final-copy-march-2022-1.pdf

[59] CIEEM (2019). *Guidelines for Ecological impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. CIEEM: Winchester*

[60] CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester*.

- 'BS 42020:2013 Biodiversity – Code of Practice for Planning and Development'[61].

7.4.4 The impact assessment process involves:

- Identifying the importance / sensitivity of a feature;
- Identifying and characterising impacts on species / habitats;
- Incorporating measures to avoid and reduce (mitigate) these impacts as part of an iterative design process;
- Assessing the significance of any likely residual effects after mitigation;
- Identifying appropriate compensation measures to address significant residual effects; and
- Identifying opportunities for ecological enhancement.

7.4.5 The assessment would describe those impacts that are relevant to understanding the significant ecological effects and determining their significance. The CIEEM Guidance describes the concept of ecological significance and how this relates to the ability to deliver biodiversity conservation objectives for a given feature.

7.4.6 The assessment of potentially significant effects on sensitive receptors will consider the receptor sensitivity (on a scale of high, medium and low) and the magnitude of change (on a scale of major, medium, minor and negligible) to determine significance (on a scale of major, moderate, minor and negligible). Significant effects will be determined through professional judgment.

7.4.7 The assessment would be informed by detailed drawings and secured design principles relating to vegetation loss/habitat creation, lighting and drainage. A number of supporting documents would also be prepared which would set out the principles that would be adopted to ensure the protection and enhancement of the ecology and biodiversity on-Site receptors.

7.4.8 Mitigation measures would be 'embedded' within the Proposed Development through the retention of key existing habitats or features of value (wherever possible), built development layout, as well as carefully defined design principles of green/blue infrastructure, creation of new habitats, lighting, drainage and access. Where there are impacts remaining following the application of appropriate mitigation, these will be identified, and any necessary additional avoidance, mitigation and/or compensation measures described.

Geographical Scope

7.4.9 The study area is considered a zone of influence 2km around the red line boundary for protected species, and statutory and non-statutory designated sites. A zone of influence of 10km is considered when reviewing a development in relation to European protected sites such as SACs and SPAs.

7.4.10 The zone of influence of the Proposed Development is defined as:

- The red line boundary, for effects on designations, habitats and species;

[61] British Standards Institution (2013) *BS 42020:2013 Biodiversity – Code of practice for planning and development.*

- Adjacent habitat, considered by species, for mobile species with territories or foraging ranges that may overlap the Site;
- Designated sites which can be impacted through Proposed Development activities; and
- Undesignated priority (Section 41) habitats that may be sensitive receptors to increased recreational pressure or other impacts such as surface water pollution.

7.5 Likely Significant Effects

7.5.1 Given that the survey effort to determine the ecological receptors on-site remains ongoing, a full picture of the impacts of the Proposed Development upon ecology is yet to be determined. That said, previous ecological surveying conducted between 2021 and 2023 indicate that the on-Site habitats support a range of protected species, including Badgers, foraging and commuting bats, foraging, commuting and breeding and wintering birds and Great Crested Newts. As such, a summary of the expected likely significant effects are detailed below.

Construction

7.5.2 Likely significant effects anticipated during the construction phase include:

- Direct loss of priority habitats on Site, such as hedgerows;
- Direct disturbance on general faunal populations on and in the vicinity of the Site;
- Adverse impacts on protected species on and in the vicinity of the Site, such as Badgers, bats, wintering and breeding birds and Great Crested Newts as a result of construction activities;
- Indirect disturbance of general faunal populations within hearing range
- Disruption to habitats and disturbance to faunal populations within receiving range of dust, lighting, noise, emissions from construction traffic and works; and
- Lighting during construction phase on sensitive habitats used by nocturnal species.

Operation

7.5.3 Likely significant effects anticipated during the operation phase include:

- Degradation of retained and created habitats on Site from associated activities;
- Disturbance to faunal species / populations on and in the vicinity of the Site from unintentional mismanagement and timing of management works;
- Disturbance to habitats (including statutory and non-statutory designated sites) and fauna on and in the vicinity of the Site due to an increase in local population and recreational pressure; and
- Indirect disturbance to faunal populations on and in the vicinity of the Site from increases in lighting, noise and population.

7.5.4 It is expected that mitigation and enhancement measures for protected species, at least, will be required. Post-development, landscaping will need to be managed to ensure a net gain in biodiversity is secured.

7.6 Impacts Scoped Out of the Assessment

7.6.1 An assessment of the habitats on-site has been undertaken and their ability to support protected, priority or otherwise notable species was undertaken in context of the site's location.

7.6.2 Based on current evidence, impacts on the following ecological receptors have been scoped out:

- Impacts on Statutory Sites – no adverse impacts expected between proposed development and statutory sites in the wider landscape owing to intervening distances and nature of habitat on and adjacent to Site;
- Impacts on Non-Statutory Sites – no adverse impacts expected owing to intervening distances between Proposed Development and non-statutory sites in the wider landscape (the closest non-statutory site, Boxworth PRV CWS, is located approximately 1.8km from site).
- Impacts on habitats of low ecological value – habitats identified during the habitat surveys conducted in 2021, 2022 and 2023 considered to offer negligible intrinsic ecological value;
- Impacts on Otter – no prior evidence of species utilising Site;
- Impacts on Water Vole – no prior evidence of species utilising Site;
- Impacts on Dormice – no prior evidence of species utilising Site; and
- Impacts reptiles - no prior evidence of species utilising Site.

7.7 Likely Mitigation

7.7.1 To ensure that significant effects on ecology and nature conservation are avoided, a series of mitigation and enhancement measures are expected to be implemented, with these detailed individually below.

Habitats

Construction

7.7.2 The Proposed Development shall ensure, where possible, that habitats of greatest value are retained and protected during the construction phase to ensure no degradation of retained habitats. The Proposed Development shall be focussed on habitats of low ecological value and distinctiveness to deliver a minimum 20% biodiversity net gain.

Operation

7.7.3 The Proposed Development will ensure that strong green infrastructure corridors will be established, thereby bolstering existing habitats of ecological value such as the hedgerows. Further establishment of species-rich habitats will be established including woodland, scrub and other neutral grassland, alongside the establishment of a new country park, all of which will contribute towards a minimum 20% biodiversity net gain and align with biodiversity net gain aspirations of the Greater Cambridge Shared Planning Biodiversity SPD.

Badgers

Construction

7.7.4 On the occasion that a Badger sett would be adversely impacted by the proposals, a Natural England licence will be sought before development commences. The licensed closure will consist of an exclusion and monitoring exercise lasting 21 days followed by a cautious demolition of the sett using a small excavator and is overseen by an ecologist, all undertaken between July and November to avoid the sensitive period in which young are being born and reared. Any closure of a main sett will require compensation to ensure that opportunities are present post-development. This is typically in the form of a new artificial sett that will replace the one that is lost. The artificial sett will need to be constructed, established and show signs of use by Badgers prior to the removal of existing setts.

7.7.5 Should a sett be retained, a 30m consultation zone will be established into which heavy machinery will not enter unless at the instruction of an ecologist.

7.7.6 All site personnel will be made aware of the presence of this species during construction and any trenches or other hazards to Badgers within the construction zone will be identified and measures undertaken to minimise any risk.

Operation

7.7.7 The provision of new suitable foraging habitats and the establishment of strong green infrastructure through the site as part of an ecologically led landscaping scheme will ensure that opportunities for Badgers remain post-development. Badger reflectors will also be placed at strategic locations along new roads in order to deter Badger movement and reduce the chances of Road Traffic Accidents (RTAs).

Bats

Construction

7.7.8 As all on-Site trees are not considered suitable for supporting roosting bats they can be felled without the need for a Natural England European Protected Species (EPS) licence.

7.7.9 Habitats of greatest interest for bats, such as hedgerows, treelines, trees and scrub will be retained wherever possible to maintain opportunities for bats during the construction phase.

7.7.10 The adoption of a strict Construction and Environmental Management Plan (CEMP) will ensure lighting controls are in place during the construction phase to mitigate for any potential temporary lighting impacts.

Operation

7.7.11 Where losses to habitat utilised by bats occur, replacement planting shall be provided. Additional tree, scrub and hedgerow planting will be incorporated into the scheme to promote wildlife corridors around site and improve the foraging and commuting opportunities for bats. The provision of new areas of wildflower grassland seeding would heighten the invertebrate suitability of the site and therefore improve food resource for bats.

7.7.12 The Proposed Development will ensure a sensitive lighting design is adopted in accordance with the Institute of Lighting Professionals (ILP) and BCT guidance note. This will ensure that artificial lighting does not represent an indirect effect on bats and that dark corridors remain across and around the site.

7.7.13 The provision of bat boxes incorporated into newly constructed buildings or on retained trees would offer new roosting opportunities on-site not present pre-development and would align with the Greater Cambridge Shared Planning Biodiversity SPD.

Other Mammals (Hedgehog)

Construction

7.7.14 Areas of suitable habitat will be cleared outside the winter hibernation period (October to April inclusive).

Operation

7.7.15 The retention, enhancement and establishment of hedgerow, scrub and grassland habitats will be prioritised, particularly around the site boundaries, to provide continued opportunities for commuting and foraging Hedgehogs.

7.7.16 The provision of log piles towards the site boundaries will offer increased refuge and hibernation opportunities for this species post-development.

7.7.17 Should any fencing be implemented, particularly around the site boundary, this will be of a design that ensures the continued permeability of the site for this species.

Birds

Construction

7.7.18 Species listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) are afforded additional protection meaning it is an offence to intentionally or recklessly disturb a schedule 1 bird on or near a nest contain eggs or young; when it is building a nest, or its dependent young.

7.7.19 Owing to the presence of nesting Little Ringed Plovers within the northeast corner of the site, a nesting bird survey will be undertaken prior to any commencement of works are to be undertaken within the nesting bird season (March to August inclusive). Where active nests are noted, these shall be safeguarded to ensure that no disturbance occurs to the nests until the young are no longer dependent. Continued monitoring will be undertaken during this time and, where appropriate, mitigation will be incorporated into any adopted CEMP to allow works to continue in areas without a nesting constraint.

7.7.20 General clearance of nesting bird habitat will also seek to be removed outside of the nesting period and, where this cannot be achieved, will only be removed once a nesting bird survey has been undertaken to ascertain whether any active nests are present.

7.7.21 The loss of hedgerows and trees on-Site will be minimised where possible.

Operation

7.7.22 The provision of new native tree, hedgerow and shrub planting utilising species with known value for wildlife, such as trees that bear fruit over autumn and winter that can offer food resource for winter migrants including Fieldfare and Redwing, will ensure that opportunities remain for foraging birds' post-development. Appropriate management shall be undertaken to ensure habitats are maintained in favourable conditions for farmland birds, such as Yellowhammer.

7.7.23 To mitigate for the loss in breeding habitat for Little Ringed Plovers, and other ground nesting farmland species, replacement breeding habitat will be provided, with this species favouring

sparsely vegetated areas of gravel or sand near a shallow waterbody. This could be delivered through scraping back and maintaining an area of bare ground alongside an accompanying shallow pond, preferably towards the site boundary to reduce the potential for any disturbance.

7.7.24 A variety of bird boxes will be provided on retained trees and / or incorporated into the newly constructed buildings to align with the Greater Cambridge Shared Planning Biodiversity SPD. Boxes should be chosen that offer opportunities for notable species confirmed to be utilising the site, such as Swifts.

Great Crested Newts

Construction

7.7.25 Pond P7, the off-site pond confirmed to support a population of Great Crested Newts, will not be impacted by the Proposed Development, however, terrestrial habitat for this species will be lost. To mitigate for this, the Proposed Development will opt into the District Level Licensing Scheme provided by Natural England to offset the loss of terrestrial habitats as part of the Proposed Development

7.7.26 The District Level Licensing Scheme focuses on the provision of long-term Great Crested Newt habitats where surveys show it will be most effective to restore, connect and expand Great Crested Newt populations through financial contributions made by the Applicant. The Proposed Development would allow for the development to proceed without the need for the mitigation required under a Natural England EPS licence, although it may require the supervision of an ecologist.

Operation

7.7.27 Regardless of the above, the Proposed Development will include new terrestrial and aquatic habitats for Great Crested Newts and other amphibians. Landscaping will seek to establish new aquatic habitats, whether this be wildlife ponds or attenuation features, with these be planted with a variety of native emergent and aquatic vegetation. New landscaping will also include areas of tussocky grassland and shrub planting to offer dispersal opportunities for this species during their terrestrial phase.

7.7.28 Several hibernacula and log piles will be provided in areas close to new attenuation features and / or within areas of landscaping to offer new refugia and hibernation opportunities for this species.

7.8 Cumulative Effects

7.8.1 The cumulative assessment will consider the same potential likely significant effects (where possible and where the necessary information is available) as identified for the Proposed Development for identified plans and projects within close proximity to the Site. Cumulative schemes are listed in Chapter 14.

7.9 Summary

7.9.1 Table 7.1 summarises the likely construction, operational and cumulative effects of the Proposed Development.

Table 7.1: Topic Scope

Receptor	Effects	Scoped In
Relatively valuable pre-development habitats (e.g. arable field margins, hedgerows and ponds)	Potential loss of habitats during construction. Degradation of retained habitats during operational phase due to operation activities.	✓
Pre-development habitats considered to offer negligible intrinsic ecological value (e.g. recolonising vegetation and hardstanding)	No significant effects considered likely owing to low ecological value of habitats.	X
Badgers – Four Badger setts (one main sett and three outlier / subsidiary setts) were identified on-site between 2021 and 2023.	Potential destruction and disturbance of Badger setts during construction. Increase in road fatalities owing to an increase in road traffic during operational phase.	✓
Bats – No roosting opportunities are present on-site, although the field boundary habitats offer foraging and commuting opportunities for this group with nine species identified across the survey effort conducted to date. Most registrations relate to Common Pipistrelle, a common and widespread species. Although Barbastelle, a rarer bat species, has been infrequently recorded, the low detection rate would suggest that the site is not of great importance for this species.	Loss of habitats utilised by bats during construction activities. Lighting impacts during construction phase. Lighting impacts of retained habitats during operational phase.	✓
Otters – No evidence has been recorded that suggests the presence of Otters on-site, with the ditches considered to offer no suitability for this species.	No impacts on this species are anticipated as a result of the Proposed Development.	X
Water Voles – No evidence suggesting the presence of Water Voles on-site has been recorded, with the ditches considered to offer negligible opportunities for this species.	No impacts on Water Voles are anticipated as a result of the Proposed Development.	X
Hedgehogs – While no specific surveys or sightings for Hedgehogs have occurred, given the site contains suitable field boundary habitats to provide foraging, refuge and hibernation opportunities for this species, its presence cannot be ruled out.	Removal of suitable habitat and potential for killing or injuring animals during construction phase. Increase in road traffic fatalities during operational phase.	✓
Birds – The site supports good opportunities for nesting and foraging birds through the field margin habitats, with the arable fields and areas of grassland also presenting opportunities for ground nesting species. Six species listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) including Little Ringed Plover, Quail, Hobby, Red Kite, Redwing and Fieldfare were observed over the survey effort. Little Ringed Plover is the most notable of these, being confirmed to be breeding towards the north-eastern corner of the site, with a peak count of six adults. Numerous additional notable species were observed on / flying over / adjacent to site over the survey effort. Several further species are considered to be breeders / possible breeders.	Loss of suitable nesting and foraging habitat during construction phase. Potential for destruction and disturbance (Schedule 1 species) of active bird nests during construction phase. Increased disturbance of birds during operational phase.	✓

Receptor	Effects	Scoped In
Reptiles – While the site contains tussocky grassland field margins considered to be capable of supporting common reptile species, the presence / absence surveys conducted in 2021 and 2023 indicated that this group is absent from site.	No impacts on Reptiles are expected as a result of the Proposed Development.	X
Great Crested Newts – Great Crested Newts have been confirmed within Pond P7, an off-site pond beyond the eastern extent of the southern site boundary, through eDNA and population class surveys undertaken in 2021.	Loss of terrestrial habitat for Great Crested Newts during construction phase. Lowering of connectivity and suitable terrestrial habitat during operational phase.	✓
Statutory designated sites of nature conservation importance (e.g. Ramsar's, SACs, SPAs, SSSIs and LNRs).	Due to the intervening distances, on-site habitats and the nature of the Proposed Development proposals, it is considered highly unlikely that any adverse impacts will occur on any statutory designated sites within the vicinity of the Site.	X
Non-statutory designated sites of nature conservation importance (e.g. CWSs).	Due to the intervening distances between the Proposed Development and non-statutory sites, it is considered highly unlikely that any adverse impacts will occur as a result of the Proposed Development.	X

8 Air Quality

8.1 Introduction

8.1.1 An assessment will be undertaken of the likely significant effects of the Proposed Development on the environment with respect to Air Quality.

8.1.2 This Chapter of the EIA Scoping Report has been prepared by Stantec and sets out the technical details of the air quality assessment which will be reported in the ES.

8.1.3 Air quality has been scoped into the ES due to the potential for significant effects as a result of emissions to air primarily associated with emissions from traffic during the operational phase. The proposed methodologies and scope of the assessment are provided in the following sections.

8.2 Baseline Conditions

8.2.1 Baseline data has been obtained from the following sources:

- Monitoring data from the latest available South Cambridgeshire District Council[62] (SCDC), Huntingdonshire District Council[63] (HDC) and Cambridge City Council[64] (CCC) Air Quality Annual Status Reports.
- National background pollution maps[65] published by the Department for Environment, Food and Rural Affairs (DEFRA) which cover the whole country on a 1x1 km grid.

8.2.2 SCDC and neighbouring HDC and CCC have investigated air quality within their administrative boundaries as part of their responsibilities under the Local Air Quality Management (LAQM) regime. The Proposed Development is located within SCDC's administrative area, but close to both HDC and CCC through which traffic associated with the Proposed Development will pass.

8.2.3 Whilst there are currently no Air Quality Management Areas (AQMAs) under the jurisdiction of SCDC, HDC has declared one AQMA due to exceedances of the annual mean nitrogen dioxide (NO2) National Air Quality Objective (NAQO) encompassing the southern part of Huntingdon town centre located approximately 11km to the northwest of the Proposed Development.

8.2.4 SCDC, HDC and CCC all undertake air quality monitoring within their administrative boundaries using both automatic and passive monitoring techniques. In the vicinity of the Proposed Development only passive monitoring of NO2 (diffusion tube) is undertaken, with the closest automatic monitoring (of NO2 and particulate matter (PM10 and PM2.5)) undertaken in Huntingdon (HDC), Impington (SCDC) and Cambridge (CCC) over 8km from the Proposed Development.

8.2.5 The most representative monitoring of likely air quality at the Proposed Development is undertaken by SCDC at Bar Hill, approximately 3km southeast of the Proposed Development along the A14. This monitoring location (DT5) is located approximately 18 m from the A14 and in 2023 measured an annual mean NO_2 concentration of 11.3 µg/m^3, well below the National

[62] South Cambridgeshire District Council 2024 Annual Status Report, 2024.

[63] Huntingdonshire District Council 2024 Annual Status Report, 2024.

[64] Cambridge City Council 2024 Annual Status Report, 2024.

[65] Department for Environment, Food and Rural Affairs (DEFRA). '*2021 Based Background Maps*'. *Available at: https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021*

Air Quality Objective (NAQO as defined in the Air Quality Standards Regulations[66]) of 40 µg/m^3.

8.2.6 HDC also monitor NO2 at 3 locations in the vicinity of Fenstanton, approximately 3km to the northwest of the Proposed Development. The most recent published data is from 2023 with a measured annual mean NO2 concentrations at these monitoring locations were all less than 12 µg/m3, well below the NAQO of 40 µg/m3.

8.2.7 All annual mean NO2 concentrations recorded in all nearby districts have been below 60 µg/m3 in the last five years, which according to DEFRA TG(22) guidance indicates that it is unlikely that any exceedances of the 1-hour mean NAQO have occurred at any of these locations.

8.2.8 Existing DEFRA predicted[67] background concentrations at the Proposed Development are shown in Table 8.1 below. All background concentrations are significantly below the relevant NAQOs in 2025.

Table 8.1: Estimated Annual Mean Background Concentrations

Year	Location	Annual Mean (µg/m3)		
		NO2	PM10	PM2.5
2025	534_265	5.7	11.9	6.2
	535_265	8.3	15.6	7.6
NAQO		**40**	**40**	**20**

8.2.9 Future baseline air quality will be predicted through dispersion modelling of emissions from road traffic. The model will use traffic data supplied by Stantec (the Applicant's Transport Consultants), which will be verified against local roadside air quality monitoring data, to ensure a robust baseline, future baseline and operational phase model.

Receptors

8.2.10 Changes in road traffic emissions resulting from vehicle movements associated with the Proposed Development may impact on existing sensitive receptor locations as well as new proposed sensitive receptor locations.

8.2.11 Relevant sensitive human receptor locations in the vicinity of the Proposed Development range from low (indicative examples include public footpaths, playing fields and parks), medium (offices, business park, service station and shops) and high sensitivity (residential dwellings, nurseries and potential hotels).

8.2.12 When identifying receptors particular attention will be paid to assessing impacts close to junctions, traffic lights and roundabouts and where there is a combined effect of several road links and routes along which substantial volumes of traffic generated by the Proposed Development will travel.

8.2.13 Relevant ecological receptor locations are designated sites that are sensitive to increases in concentrations on nitrogen oxides (NOx) and ammonia (NH3) and to increases in nutrient and

[66] Statutory Instrument 2010, No. 1001, '*The Air Quality Standards Regulations 2010*' HMSO, London

[67] Department for Environment, Food and Rural Affairs (DEFRA) (2024). '*2021 Based Background Maps'. Available at: https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021*

acid deposition of nitrogen. As per the IAQM guidance68, designated ecological sites will be considered as sensitive receptors where they contain features sensitive to air pollution and are within 200 m or roads predicted to experience increases in traffic flows above the relevant criteria; the identification of ecological receptor locations is subject to receipt of traffic data.

8.3 Approach

The National, Local, and Regional Planning Policy Context

Regulatory Requirements

8.3.1 The assessment will be prepared with consideration paid to the following regulations:

- The Air Quality Standards Regulations and subsequent amendments[69].
- Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019[70].
- The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020[71].
- The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023[72].
- Part IV of the Environment Act 1995[73].
- The Environment Act 2021[74].
- The Conservation of Habitats and Species Regulations 2017[75] and The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019[76].
- Countryside and Rights of Way Act 2000[77].

National Policy

8.3.2 The assessment will be completed in accordance with the following national policies:

- The Department for Environment, Food and Rural Affairs' (DEFRA's) Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007[78].

[68] Institute of Air Quality Management (2020). A guide to the assessment of air quality impacts on designated nature conservation sites v1.1 May 2020. Available at: https://iaqm.co.uk/text/guidance/air-quality-impacts-on-nature-sites-2020.pdf

[69] Statutory Instrument 2010, No. 1001, '*The Air Quality Standards Regulations 2010*' HMSO, London.

[70] Statutory Instruments 2019, No. 74, '*The Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019*' HMSO, London

[71] Statutory Instruments 2020, No. 131, '*The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020*' HMSO, London

[72] Statutory Instruments 2023 No. 96. '*The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023*' HMSO, London

[73] Environment Act 1995, Part IV.

[74] Statutory Instruments 2021, c. 30, '*Environment Act 2021*' HMSO, London

[75] Statutory Instrument 2017, No. 1012, '*The Conservation of Habitats and Species Regulations 2017*' HMSO, London.

[76] Statutory Instrument 2019, No,0000 '*The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019*' HMSO, London.

[77] Statutory Instrument 2000, c. 37, '*Countryside and Rights of Way Act 2000*' HMSO, London.

[78] Department for Environment, Food and Rural Affairs (DEFRA) in partnership with the Scottish Executive, The National Assembly for Wales and the Department of the Environment for Northern Ireland (2007). 'The Air Quality Strategy for England, Scotland, Wales, Northern Ireland' HMSO, London.

- DEFRA Air Quality Strategy 2023[79].
- The Environmental Improvement Plan 2023[80].
- Air Quality Plan for Nitrogen Dioxide (NO_2) in the UK[81].
- Clean Air Strategy 2019[82].
- The National Planning Policy Framework[83].
- The National Planning Practice Guidance [84].

Local Policy and Guidance

8.3.3 Consideration will be given to the following local policy and guidance documents:

- The South Cambridgeshire Local Plan (adopted 2008)[85].
- Greater Cambridge Air Quality Strategy[86] (2024)
- Greater Cambridge Sustainable Design and Construction SPD[87] (2020)

Air Quality Guidance

8.3.4 The assessment will be prepared in accordance with the following guidance:

- DEFRA Local Air Quality Management Technical Guidance (LAQM.TG(22))[88].
- Environmental Protection UK (EPUK)/Institute of Air Quality Management (IAQM) 'Land-Use Planning & Development Control: Planning for Air Quality'[89].
- IAQM Guidance on the Assessment of Dust from Demolition and Construction[90].

[79] Department for Environment, Food and Rural Affairs (DEFRA) (2023). 'The Air Quality Strategy for England'. Available at: https://www.gov.uk/government/publications/the-air-quality-strategy-for-england.

[80] Department for Environment, Food and Rural Affairs (DEFRA) (2023). 'Environmental Improvement Plan 2023'. Available at: https://www.gov.uk/government/publications/environmental-improvement-plan.

[81] Department for Environment, Food and Rural Affairs (DEFRA) (2018). 'UK Plan for tackling Roadside Nitrogen Dioxide Concentrations: Detailed Plan'. Available at: https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017.

82 Department for Environment, Food and Rural Affairs (DEFRA) (2019). 'Clean Air Strategy 2019'.

83 Ministry of Housing, Communities & Local Government (2023) 'National Planning Policy Framework'

[84] Ministry of Housing, Communities & Local Government (MHCLG) (2019). '*Planning Practice Guidance (PPG)*.'

[85] South Cambridgeshire Local Plan (2018). Available from: South Cambridgeshire Adopted Local Plan 2018.

[86] Greater Cambridge Air Quality Strategy 2024 – 2029. SCDC and CCC, 2024.

[87] Greater Cambridge Sustainable Design and Construction SPD. SCDC and CCC, 2020

[88] Department for Environment, Food and Rural Affairs (DEFRA) (2022). 'Local Air Quality Management Technical Guidance (TG22)'. August 2022.

[89] Environmental Protection UK and the Institute of Air Quality Management (EPUK / IAQM) (2017). 'Land-use Planning & Development Control: Planning for Air Quality'. V1.2. The Institute for Air Quality Management, London

[90] Institute of Air Quality Management (2024). 'Guidance on the Assessment of Dust from Demolition and Construction' version 2.2, IAQM, London

- IAQM 'Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites[91].
- Joint Nature Conservation Committee (JNCC) 'Guidance on Decision-making Thresholds for Air Pollution'[92].
- Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations[93].

8.4 Assessment Methodology

Construction Dust

8.4.1 A qualitative assessment of construction dust impacts will be undertaken in accordance with the IAQM 'Guidance on the Assessment of Dust from Demolition and Construction' and appended to the ES Chapter. The assessment will determine the risk of impacts from earthworks and construction activities, and as a result of trackout, based on the magnitude of activities and the overall sensitivity of the surrounding area. The sensitivity of the area to construction dust and PM10 impacts will consider existing sensitive receptor locations, in addition to proposed receptor locations which may be present during later stages of construction.

8.4.2 Appropriate dust mitigation measures will be recommended based on the outcome of the qualitative assessment to ensure that effects of construction dust will not be significant.

Road Traffic Emissions

8.4.3 Information regarding baseline air quality will be obtained by collating the results of monitoring carried out by SCDC, HDC and CCC and referring to maps of AQMAs and exceedances of the Limit Values. Background concentrations will be defined based on the national pollution maps published by DEFRA (DEFRA, 2024).

8.4.4 Given the scale of the Proposed Development, it is considered that a detailed (dispersion modelling) assessment of operational phase (and potentially construction phase) road traffic emission impacts on air quality will be required.

8.4.5 Air quality will be assessed at a range of representative worst-case human receptor locations, the model will be used to predict concentrations within the Site and at off-site receptors to assess the impacts of additional traffic associated with the Proposed Development.

8.4.6 For ecological sites that require detailed assessment, NOx and NH3 concentrations and nitrogen and acid deposition will be assessed at a range of transects at increasing distances from the adjacent road.

8.4.7 Concentrations of NO2, PM10 and $PM_{2.5}$ (for human receptors) and NO_x and NH_3 (for ecological receptors) will be predicted using the ADMS-Road dispersion model for the following scenarios:

[91] Institute of Air Quality Management (2020). A guide to the assessment of air quality impacts on designated nature conservation sites v1.1 May 2020. Available at: https://iaqm.co.uk/text/guidance/air-quality-impacts-on-nature-sites-2020.pdf

[92] Chapman and Kite (2021). 'Guidance on Decision-Making Thresholds for Air Pollution' JNCC Report No.696. Available at: https://data.jncc.gov.uk/data/6cce4f2e-e481-4ec2-b369-2b4026c88447/JNCC-Report-696-Main-FINAL-WEB.pdf.

[93] Natural England (2018). Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations. Version: June 2018.

- Baseline & Model Verification (based on available local monitoring along road network provided);
- Future Baseline + Cumulative Developments; and
- Future Baseline + Cumulative Developments + Completed Development.

8.4.8 To create a robust model, verification will be undertaken to compare the results of modelling against those from monitoring. The baseline year will be chosen to reflect the most recent year for which sufficient air quality monitoring data is available with which to model the verification.

8.4.9 Emissions of NOx, PM10 and PM2.5 associated with road traffic will be calculated using the most recent version of the Emissions Factor Toolkit[94] (EFT) at the time of undertaking the assessment (currently v13.1). If a detailed assessment of impacts at ecological receptors is required, in addition to the EFT, emissions of ammonia (NH3) will be calculated using the Calculator for Road Emissions of Ammonia (CREAM) tool[95] (Air Quality Consultants Ltd., 2024). Traffic data will be entered into the EFT to provide emissions rates for each of the road links modelled.

8.4.10 The cumulative effects of the Proposed Development and committed developments in the study area will be inherently considered within the assessment via the inclusion of committed developments and traffic growth within the future baseline traffic data.

8.4.11 Traffic data used in the modelling will be provided by Stantec and meteorological data will be derived from the closest regionally representative station at Mildenhall.

Significance of Effects Matrix

8.4.12 The assessment of road traffic emissions will assess the future baseline (including traffic associated with identified cumulative schemes). Predicted concentrations will be compared to the relevant NAQOs to identify any exceedances and impacts (for existing receptors only) will be determined using the criteria EPUK / IAQM guidance, outlined in Table 8.2 below.

Table 8.2: Air Quality Significance Criteria for Road Traffic Emissions

Long term average concentrations at receptor in assessment year	% Change in concentration relative to Air Quality Assessment Level			
	1	2-5	6-10	>10
75% or less of AQAL	Negligible	Negligible	Minor	Moderate
76-94% of AQAL	Negligible	Minor	Moderate	Moderate
95-102% of AQAL	Minor	Moderate	Moderate	Major
103-109% of AQAL	Moderate	Moderate	Major	Major
110% or more of AQAL	Moderate	Major	Major	Major

Where concentrations increase the impact is described as adverse, and where it decreases as beneficial.
% change rounded to nearest whole number. Where the % change is 0 (i.e. less than 0.5%) the impact will be Negligible.
a NO_2 or PM_{10}: > 44 µg/m^3 annual mean; $PM_{2.5}$ >22 µg/m^3 annual mean; PM_{10} >35.2 µg/m^3 annual mean (days).
b NO_2 or PM_{10}: > 40.8 – ≤ 44 µg/m^3 annual mean; $PM_{2.5}$ > 20.4 – ≤22 µg/m^3 annual mean; PM_{10} >32.64 – ≤35.2 µg/m^3 annual mean (days).
c NO_2 or PM_{10}: > 38 – ≤40.8 µg/m^3 annual mean; $PM_{2.5}$ >19 – ≤20.4µg/m^3 of annual mean; PM_{10} >30.4 – ≤32.64 µg/m^3 annual mean (days).

[94] *Emissions Factor Toolkit (Version 13.1)*. Retrieved from https://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html

[95] *Calculator for Road Emissions of Ammonia (CREAM) v2.* Air Quality Consultants Ltd. (2025). Retrieved from https://www.aqconsultants.co.uk/resources

d NO_2 or PM_{10}: >30 - ≤38 µg/m^3 annual mean; $PM_{2.5}$ >15 - ≤19 µg/m^3 annual mean; or <24 - ≤ 30.4 µg/m^3 annual mean (days).
e NO_2 or PM_{10}: ≤30 µg/m^3 annual mean; $PM_{2.5}$ ≤15 µg/m^3 annual mean; PM_{10} ≤24 µg/m^3 annual mean (days).

8.4.13 The IAQM guidance states that the overall assessment of significance should be based on professional judgement, taking into account factors including:

- the number of properties affected by 'slight', 'moderate' or 'major' adverse air quality impacts and a judgement on the overall balance;
- the magnitude of the changes and the descriptions of the impacts at the receptors;
- whether or not an exceedance of an NAQO is predicted to arise in the operational study area (where there are significant changes in traffic) where none existed before, or an exceedance area is substantially increased;
- the uncertainty, comprising the extent to which worst-case assumptions have been made; and
- the extent to which an NAQO is exceeded.

8.4.14 Therefore, where impacts at an individual receptor are classified as 'negligible' or 'slight', effects would typically be considered 'not significant'. However, where 'moderate' or 'major' adverse impacts are identified at individual receptors, the overall effect needs to be considered in the round taking into account the changes at all of the modelled receptor locations, with a judgement made as to whether the overall air quality effect of the development is 'significant' or not.

8.4.15 The assessment of road traffic emissions at ecological receptors will also assess the future baseline (including traffic associated with identified cumulative schemes) with and without the Proposed Development. Impacts will be compared to a threshold of 1% of the critical level or load which is accepted to be a pragmatic threshold for determining no likely significant effects. It should be noted that an impact of more than 1% is not, per se, an indication that a significant effect exists, only the possibility of one which would trigger the need for further, more detailed assessment undertaken by the Project Ecologist of the ecological sensitivity and value of the habitat.

8.4.16 Where significant effects are identified, appropriate mitigation measures will be recommended.

Geographical Scope

8.4.17 The proposed Study Area for this assessment will be defined on the basis of the following:

- For assessment of road traffic emissions (during either operation or construction), the Study Area (based on the EPUK / IAQM guidance, 2017) includes all roads (and any adjacent sensitive receptors) within 250 m of the Site and any roads where development traffic flows are predicted to exceed the EPUK / IAQM screening criteria of an increase of 500 Light Duty Vehicle (LDV) Annual Average Daily Traffic (AADT) trips or 100 Heavy Duty Vehicle (HDV) AADT (or an increase of 100 LDV AADT or 25 HDV AADT inside of an AQMA);
- For ecological receptors where sensitive features are located within 200 m of a road, guidance[25]; [27] indicates that an increase in traffic flows of more than 1,000 AADT or HDV flows of more than 200 AADT could have the potential to result in significant effects and should be assessed.
- To account for potential 'in-combination' effects at Habitat Regulations Sites, the threshold of 1,000 AADT is applied to the change in 'in-combination' traffic flows and to

enable a proportionate assessment, a lower screening criteria of 50 AADT is applied to development traffic. Joint Nature Conservation Committee (JNCC) research[26] indicates that such changes in traffic flows are not considered to have the potential to meaningfully contribute to in-combination effects which might undermine a site's conservation objectives; and

- For the construction dust risk assessment, the Study Area (based on the IAQM guidance, 2024) is defined as comprising the area up to 250 m from the site boundary and 50 m from the route(s) used by demolition and construction vehicles (up to 250 m from the site entrance(s)).

8.4.18 The above criteria are indicative and therefore it may not be necessary to carry out a detailed assessment of air quality impacts on all road links which exceed these criteria. The need for inclusion of roads within the assessment will also take account the presence of receptors, receptor proximity to the road and whether representative worst-case air quality conditions have been assessed elsewhere.

Temporal Scope

8.4.19 Whilst the build out of the Proposed Development is anticipated to be phased, the air quality assessment will consider a realistic worst-case scenario with full Proposed Development traffic (and cumulative schemes and growth) occurring prior to full build out. The exact assessment years (in terms of background concentrations and emission factors) will be detailed in the Air Quality ES Chapter.

8.5 Likely Significant Effects

8.5.1 There is considered to be the potential for the following likely significant air quality effects with regards to the Proposed Development:

- Changes in pollutant concentrations as a result of traffic related emissions associated with both the Construction and Operational phases of the Proposed Development.

8.5.2 Such effects will be considered for the Proposed Development in isolation, as well as for the Proposed Development together with any relevant cumulative schemes.

8.6 Impacts Scoped Out of the Assessment

8.6.1 During construction, dust from on-site activities and off-site trackout by construction vehicles has the potential to impact on sensitive human receptors within the study area. The main potential impacts are loss of amenity (as a result of dust soiling) and deterioration of human health (as a result of increased concentrations of PM10). A Construction and Environmental Management Plan (CEMP) will incorporate dust mitigation measures recommended from the IAQM's 'Guidance on the Assessment of Dust from Demolition and Construction' (2024), and will be secured by a appropriately worded planning condition. With these mitigation measures in place, the impact of construction dust is considered inherently to be 'not significant' and has been scoped out of the ES. Instead, a construction dust risk assessment will be carried out and appended to the Air Quality Chapter of the ES to determine the risk of dust impacts and identify appropriate demolition and construction phase mitigation measures to be included in a CEMP.

8.6.2 As outlined in the IAQM construction dust guidance (IAQM, 2024), impacts from exhaust emissions from Non-Road Mobile Machinery (NRMM) are unlikely to be significant as NRMM must adhere to the emission standards for NO2 and PM10 set out in the Non-Road Mobile Machinery Regulations 2018 (His Majesty's Stationery Office, 2018). Therefore, the effects of NRMM on local air quality are considered to be 'not significant' and will not be assessed within the ES Chapter.

8.6.3 The Energy Strategy for the Proposed Development will be electric led with no combustion anticipated on-site. As a result, there is no potential for air quality impacts associated with energy centre emissions on human receptors and designated ecological sites and this effect has been scoped out of the ES Chapter.

8.7 Likely Mitigation

8.7.1 A CEMP and Construction Traffic Management Plan (and routing agreement), to be secured by planning conditions, will incorporate dust mitigation measures recommended from the IAQM's 'Guidance on the Assessment of Dust from Demolition and Construction' (2024) and HGV routing to minimise the risk of potential effects.

8.7.2 In relation to the Operational phase mitigation, a Travel Plan and Low Emission Strategy (as required by the Greater Cambridge Sustainable Design and Construction SPD will detail the mitigation measures to encourage modal shift to active and sustainable forms of travel, alongside EV charging provision.

8.8 Cumulative Effects

8.8.1 Cumulative developments within the local area will be considered in a cumulative effects assessment in combination with the predicted impacts from the Proposed Development.

8.8.2 The cumulative effects of the Proposed Development and committed developments in the study area will be inherently considered within the assessment via the inclusion of committed developments and traffic growth within the future baseline traffic data insofar as relevant information for these schemes is publicly available. Accordingly, the above methodologies will be applied to the assessment of likely significant cumulative effects, where possible. Where a potential lack of information in relation to specific cumulative schemes does not allow for this, the assessment (or components of the cumulative assessment) will be based upon professional and expert judgement.

8.9 Summary

8.9.1 Table 8.3 summarises the likely construction, operational and cumulative effects of the Proposed Development.

Table 8.3: Topic Scope

Receptor	Effects	Scoped In
Local Air Quality during both Construction and Operation	Potential increase in concentration of air pollutants resulting from emissions from vehicle movements associated with the Construction and Operational phases of the Proposed Development	✓
Dust during construction phase	Not significant	X
Emissions from NRMM during construction	Not significant	X
Emissions from onsite Energy generation plant	Not significant	X

9 Soil Resources and Agricultural Land

9.1 Introduction

9.1.1 An assessment will be undertaken of the likely significant effects of the Proposed Development on the environment with respect to soil resources and agricultural land. The assessment will be undertaken by Land Research Associates – specialists in this field for over thirty years.

9.1.2 The Site comprises approximately 90.84 ha of land, the majority of which is in agricultural use. Hence, agricultural land is a potential impact receptor. The majority of the soils appear natural / undisturbed, based on desk study evidence. Soils are an important finite resource which may be lost or damaged by built development. Hence, the soil resource is also a potential impact receptor. This Chapter will consider the potential impacts on agricultural land and soils resources.

9.2 Baseline Conditions

9.2.1 A desk study of publicly available information has been undertaken for the Site. Data sources include geology maps, soil maps, existing agricultural land classification (ALC) maps, satellite imagery and Ordnance Survey maps.

9.2.2 The British Geological Survey (BGS) map, published at 1,50-000 scale, records the basal geology of the site as Jurassic clay and mudstone of the Ancholme Group. No overlying surface deposits are recorded, although chalky till is mapped immediately to the west.

9.2.3 The National Soil Map, published at 1:250,000 scale, records the Site as belonging to the Evesham 3 Soil Association: principally slowly permeable clayey and fine loamy over clayey soils, formed on Jurassic and Cretaceous clay or mudstone. Hanslope Association is recorded immediately to the west of the Site: variably calcareous slowly permeable clayey soils formed in chalky till.

9.2.4 No detailed ALC mapping is available for the Site. The provisional Agricultural Land Classification map of England and Wales, published at 1:250,000 scale, records the site as mostly being of Grade 3 quality. Some Grade 2 land is mapped inside the western boundary of the Site. It is likely that the Grade 2 land is related to the chalky till, and associated soils, mapped immediately to the west of the Site. However, it is anticipated that the recorded soils and geology are most likely to form a mix of Subgrades 3a and 3b. A detailed soil survey is required to confirm land grades and soil types however.

9.2.5 Satellite imagery and background mapping indicates that 7.5 ha in the east of the Site has been taken out of agriculture in the past ten years and has been in use as A14 Project Offices in recent years. It is likely that this development has affected the soils and land quality in this area.

Receptors

Soil resources

9.2.6 Soils are a valuable finite resource that have important environmental, cultural and economic properties and functions which vary according to the influences of time, parent material, climate, topography, living organisms and man.

Agricultural land

9.2.7 Agricultural land enables the production of important food and fibre products, supports rural jobs and communities, is home to valuable flora and fauna, and helps the country maintain a degree of self-sufficiency. In England and Wales the Agricultural Land Classification (ALC) system is used to classify land according to the degree to which it can support agricultural and horticultural enterprises; from Grade 1 (excellent quality) land with few limitations to use to Grade 5 (very poor quality) land with very severe limitations to use. Land of Grade 1, Grade 2 and Subgrade 3a quality is considered to be 'best and most versatile' (BMV) agricultural land. This land has certain levels of protection / consideration in planning policies.

9.3 Approach

The National, Local, and Regional Planning Policy Context

9.3.1 The following national, local and regional policies will be referred to within the ES Chapter:

- National Planning Policy Framework (December 2024);
- Planning Practice Guidance (February 2024); and
- South Cambridgeshire Local Plan;

9.4 Assessment Methodology

9.4.1 The assessment methodology used has been developed by Land Research Associates and is based on professional judgement resulting from over thirty years' experience working in this sphere. The assessment of impact loss of agricultural land is partially based on the statutory threshold of 20 ha referenced by the most relevant Natural England Technical Information Note96.

9.4.2 Below are the relevant sensitivity, magnitude and significance criteria matrixes. Moderate and major effects are considered significant.

Table 9.1: Sensitivity - Soil Resources

Receptor	High	Medium	Low
Soil resource	Permeable coarse loamy and medium fine loamy soils OR other soils capable of supporting valuable habitats.	Heavy fine loamy, clayey or sandy topsoils not capable of supporting valuable habitats. Mixed permeable and slowly permeable subsoils.	Damaged or contaminated soils. Slowly permeable subsoils.

Table 9.2: Sensitivity - Agricultural Land

Receptor	High	Medium	Low
Agricultural land	Grade 1 and 2.	Subgrade 3a.	Subgrade 3b, Grade 4 and 5.

[96] *TIN049 (2012) - Agricultural Land Classification: protecting the best and most versatile agricultural land.*

Table 9.3: Magnitude - Soil Resources

Receptor	Large	Medium	Low	Negligible
Soil resource	Loss of >80 % of topsoil resources and insufficient topsoil protected for on-site uses OR subsoil compaction of >10 % of site.	Loss or irreversible damage >50 and <80 % of topsoil resources OR compaction of >5 and <10 % of subsoils.	Loss or irreversible damage to <50 % of topsoil resources OR compaction of <5 % of subsoils.	Only minor / temporary disturbance of soils within the site.

Table 9.4: Magnitude - Agricultural Land

Receptor	Large	Medium	Low	Negligible
Agricultural land	Irreversible loss of >80 ha of best and most versatile land.	Irreversible loss of >20 and <80 ha of best and most versatile land.	Irreversible loss of >5 and <20 ha of best and most versatile land.	Irreversible loss of <5 ha of best and most versatile land OR loss of non-best and most versatile land.

Table 9.5: Significance Criteria

	Sensitivity			
Magnitude	**High**	**Medium**	**Low**	**Negligible**
Large	Major adverse	Major adverse	Moderate adverse	Minor adverse
Medium	Major adverse	Moderate adverse	Minor adverse	Negligible
Low	Moderate adverse	Minor adverse	Minor adverse	Negligible
Negligible	Minor adverse	Negligible	Negligible	Negligible

9.5 Geographical Scope

9.5.1 The site covers approximately 90.84 ha to the south-west of the A14.

9.6 Likely Significant Effects

Soil resources

9.6.1 Based on available evidence, it is likely that the Site has medium fine loamy (high sensitivity receptor) or heavy fine loamy / clayey topsoils (medium sensitivity receptor) and mixed permeable and slowly permeable subsoil (medium sensitivity) or slowly permeable subsoil (low sensitivity). Without mitigation measures, it is likely that there would be a medium or large magnitude impact on these receptors during the construction and operational phases of the Proposed Development. This would result in a moderate or major adverse residual effect, which is considered significant. A soil survey would be required to accurately determine soil types and inform a soil management plan.

Agricultural land

9.6.2 Based on the predominant soil type expected at this Site, Evesham 3 Soil Association (slowly permeable clayey and fine loamy over clayey soils), it is likely that the land will be of moderate agricultural quality – Subgrade 3a (medium sensitivity) and / or Subgrade 3b (low sensitivity) land is expected. It is expected that c. 7.5 ha of the Site is not in agricultural use. It is expected

that the magnitude of impact would be in the range of medium (irreversible loss of >20 and <80 ha of best and most versatile land) to negligible (irreversible loss of <5 ha of best and most versatile land or loss of non-best and most versatile land). This would result in a moderate adverse (significant), minor adverse or negligible residual effect. A soil survey would be required to accurately determine the quality of the agricultural land at the Site.

9.7 Likely Mitigation

Soil resources

9.7.1 To mitigate the potential loss or damage of soil resources a Site-specific soil management plan should be adopted during construction. A soil management plan should be written by a suitably qualified practitioner in accordance with the principals outlined in the Construction Code of Practice for Sustainable Use of Soils on Construction Sites. It should: detail the depth and method of soil stripping and stockpiling; identify the soil requirements of the Proposed Development (e.g. planting and landscaping) and assess the suitability and availability of on-site resources; and outline the means to protect soil from compaction damage and remedial measures (such as ripping/subsoiling) to remove damage.

9.7.2 The adoption and implementation of a suitable soil management plan is likely to reduce the magnitude of impact on soil resources to low or negligible and this would result in a moderate adverse (significant), minor adverse or negligible residual effect.

Agricultural land

9.7.3 Assuming the whole Site is to be developed, mitigation of loss of agricultural land is not possible.

9.8 Cumulative Effects

9.8.1 The likelihood of cumulative effects would be determined at the point of a soil survey and full EIA assessment.

9.9 Summary

9.9.1 Table 9.6 summarises the likely construction, operational and cumulative effects of the Proposed Development.

Table 9.6: Topic Scope

Receptor	Effects	Scoped In
Soil resources	The site is likely to have high (medium fine loam topsoil), medium (heavy fine loam or clay topsoil, mixed permeability subsoil) and / or low (slowly permeable subsoil) sensitivity receptors. With mitigations, the proposed development would be likely to have a low (loss or irreversible damage to <50 % of topsoil resources or compaction of <5 % of subsoils) or negligible (only minor / temporary disturbance of soils within the site) magnitude impact. This would result in a moderate adverse, minor adverse or negligible residual effect. A soil survey would be required to accurately determine soil types, to inform a soil management plan (mitigation measure) and to be confident of the residual effect.	✓
Agricultural land	The site is likely to have medium (Subgrade 3a) and / or low (Subgrade 3b) sensitivity receptors. Assuming the whole site is to be developed, there are no mitigations to loss of agricultural land. The proposed development would be likely to have a medium (irreversible loss of >20 and <80 ha of best and most versatile land) to negligible (irreversible loss of <5 ha of best and most versatile land or loss of non-best and most versatile land) magnitude impact. This would result in a moderate adverse, minor adverse or negligible residual effect. A soil survey would be required to accurately determine agricultural land quality and to be confident of the residual effect.	✓

10 Flood Risk and Drainage

10.1 Introduction

10.1.1 An assessment will be undertaken of the likely significant effects of the Proposed Development on the environment with respect to flood risk and water resources.

10.2 Baseline Conditions

10.2.1 Available information has been obtained from OpenMaps, the Environment Agency (EA) and British Geological Society. National and local flood risk and surface water drainage policy has also been reviewed in the context of the Proposed Development to assess flood risk, drainage, and the impact to water resources at the Site.

10.2.2 Stakeholders have been and will be contacted as part of the baseline review to inform a future Flood Risk Assessment (FRA) and drainage strategy for the Site. Consultation will help establish existing flood records associated within and locally to the site, capacity issues within existing drainage infrastructure and potable water supplies.

Flood Risk Baseline Conditions

10.2.3 Flood risk is regulated through the National Planning Policy Framework (NPPF) which requires a site-specific FRA to be produced for all sites located within areas at risk from any sources of flooding and greater than 1 ha or with critical drainage problems.

10.2.4 Fluvial flooding occurs when rivers are unable to cope with the volume of water draining from the surrounding land as a result of sustained or intense rainfall. The increase in water causes the river to rise above its banks and/or retaining structures and flow across land. The first phase in identifying whether a site is potentially at risk of fluvial or tidal flooding is to consult the EA's Flood Zone maps, available on the EA's website.

10.2.5 The online 97EA Flood Zone Map for Planning indicates the Site lies within defended Flood Zone 1 'Low Probability' - Land at less than 1 in 1000 (0.1%) annual probability of river or sea flooding. The latest EA datasets will be downloaded from the data.gov.uk website and consultation with the EA will be used as part of a future FRA, produced in support of the site at planning.

10.2.6 The EA mapping shows that much of the Site is predicted to be at a 'Very Low' risk of surface water flooding. There are however two areas of localised surface water ponding to the east and 'High', 'Medium', 'Low' risks of surface water flooding extents located along the north of the site which traversing south to north through the western part of the Site. It is unclear what the justification is behind surface water flooding in this isolated area. However, by comparing the surface water flood mapping with the latest LiDAR elevation and road layout, it is noticeable that the current surface water mapping does not take into account the recently works completed as part of the A14 improvement scheme (land raising associated with the new road layout, as well as related drainage infrastructure); it is considered implausible for some of the modelled surface water flooding to pool as it is currently shown in the mapping within the existing landscape. As a result, the surface water mapping is deemed out-of-date and does not accurately indicate existing surface water flood risk on Site. Therefore, surface water hydraulic modelling works are to be undertaken and used to inform the production of the FRA and masterplan development for the Site.

[97] Gov.Uk Flood Map for Planning https://flood-map-for-planning.service.gov.uk/

10.2.7 The strategic-scale mapping included as part of the 98Cambridgeshire Level 1 Strategic Flood Risk Assessment (SFRA) dated 2021, illustrates areas susceptible to groundwater flooding. This shows areas where geological and hydrogeological conditions indicate that groundwater might emerge; for the area covering the Site, it shows the Site is not susceptible to groundwater flooding. However, the upper catchment located to the south and west of Site is indicated to be potentially susceptible to groundwater flooding. This will be considered further within the FRA produced in support of the Site.

10.2.8 All built development will be proposed to be located outside of areas at high risk of surface water flooding, where possible, and if required the Site will be supported by embedded mitigation to address flood risk considerations within the Proposed Development. This will be consulted on with the approving authorities and stakeholders including the EA, Lead Local Flood Authority (LLFA), Swavesey Internal Drainage Board (IDB) and South Cambridgeshire District Council (SCDC).

Drainage Baseline Conditions

10.2.9 The Site exists as greenfield with no known adopted drainage infrastructure present to accept both surface water and foul water drainage from the Site. Although it is noted that there will likely be an asset in proximity / vicinity of the Site and therefore will be considered as part of an overarching utilities assessment and drainage strategy works for the Site.

10.2.10 Existing watercourses and features are noted in the Receptors section below. It is assumed the Site's surface water runoff currently drains to these existing features following the natural topography of the Site, via gravity.

Water Resource Baseline Conditions

10.2.11 The Site is in an area of serious water stress, as shown in the supporting [99]EA Water Stress Classification 2021 report and water supplies from this area is provided from groundwater sources.

10.2.12 Existing water supply to the Site is limited to its current greenfield status and agricultural usage.

10.2.13 The [100]EA Groundwater Vulnerability Map shows variable risk categories based on the likelihood of a pollutant reaching the groundwater across the site area. The mapping shows the site as being 'Unproductive'.

10.2.14 The site does not lie within an [101]EA Groundwater Source Protection Zone. The nearest zone is approximately 3km to the northeast, near Fenstanton.

10.2.15 The baseline conditions will consider the potential impact to the following identified receptors.

[98] Greater Cambridge Integrated Water Management Strategy, Level 1 Strategic Flood Risk Assessment, July 2021. Available at: https://www.greatercambridgeplanning.org/media/2552/strategicfloodriskassessment_gclp_210831_accessible.pdf

[99] https://www.gov.uk/government/publications/water-stressed-areas-2021-classification

[100] https://www.data.gov.uk/dataset/groundwater-vulnerability-maps-2017-on-magic

[101] https://www.gov.uk/guidance/groundwater-source-protection-zones-spzs

Receptors

10.2.16 The following key sensitive receptors will be considered in the ES Chapter. This will look at or a combination of, either flood risk, available capacity and water quality during both the construction and operation phases.

10.2.17 Beyond the flood risk, drainage and water resources studies, geotechnical and ecological studies produced in support of the planning application will also be used to help inform the identification of sensitive receptors.

10.2.18 A review of receptors will be undertaken at the ES Chapter production stage and those listed at this scoping stage are based on a high-level assessment using limited data at this time, further receptors could therefore be identified upon completion of the technical studies for the Site.

- Utton's Drove Drain: There are no EA designated 'Main Rivers' located within proximity to the Site. The closest Main River is a stetch of Utton's Drove Drain approximately 2.3km northeast of the site. Utton's Drove Drain upstream of this section is classified as an 'Award Drain', awarded to SCDC for maintenance and management, and is situated to the east of the site. Its source is located south of Boxworth and conveys flows northwards, before discharging into the Swavesey Drain at Cow Fen (NGR: TL 3772 6852). Eventually flows reach Webb's Hole Sluice, which outfalls into the River Great Ouse.

- Existing Attenuation Feature: There is an existing attenuation feature located next to the current sewage pumping station in the eastern corner of the Site. There is also an existing attenuation pond, constructed during the A14 scheme, situated adjacent to the concrete platform. Multiple outfalls into this pond were observed on the Site visit, from nearby linear drainage features that drain the impermeable area. The pond discharges into the adjacent drain network.

- Ordinary Watercourses: There are several ordinary watercourses located within and around the Site. Many of these are relatively new, having been constructed as part of the A14 improvement scheme, and some are drains that existed prior to the works, which have also been modified. The majority of the drains, within the Site, fall to the northeast corner, just north of the concrete platform, where flows are conveyed through a series of culverts under the A14, downstream into a drain that runs through the Buckingway Business Park, which is an Award drain and adopted by SCDC.

- Existing Drains: Drains located in areas towards the north and northwest of the Site generally flow northward, flowing under the A14 via culverts just north of a highways pond located close to Friesland Farm. The downstream drain, which this culvert discharges into, is called Covells Drain and is also classified as an Award drain, adopted by SCDC.

- Webb's Hole Sluice: The Webb's Hole Sluice structure is operated so that during a high flow event within the River Great Ouse, the sluice gates are closed to prevent water backing up and flooding areas upstream. The gates can remain closed for a period of up to approximately four weeks. This causes a 'tide' locking effect to the system upstream, leading to special conditions being imposed on the discharge of developments into the Swavesey Drain (directly or indirectly) and necessitates additional considerations for when the doors are closed.

- Wastewater network: There is limited wastewater capacity within the catchment associated with the Site, therefore foul loads and treatment will be considered as part of the ES.

- Groundwater supplies: The Proposed Development is in an area of serious water stress and has the potential to increase demand for water and result in increased abstraction from groundwater sources, therefore will be a receptor considered in the ES.

10.3 National, Local, and Regional Planning Policy Context

10.3.1 The following national, local and regional planning policies will be considered within the ES chapter:

- The National Planning Policy Framework (2024)[102] (NPPF);
- The Water Framework Directive (2000)[103] (WFD);
- The Groundwater Directive (2006)[104];
- The Water Resources Act (1991)[105];
- The Land Drainage Act (1991)[106];
- The Water Act (2014)[107];
- The Flood and Water Management Act (2010)[108] (FWMA);
- The Pollution Prevention and Control Act (1999)[109];
- The Water Supply (Water Quality) Regulations (2000)[110];
- The Water Resources (EIA) England and Wales Amendments Regulations (2017)[111];
- The Water Environment (Water Framework Directive) England and Wales Regulations (2017) [112];
- Anglian River Basin District, River Basin Management Plan, Environment Agency (2022) [113];

[102] National Planning Policy Framework, December 2024. Available at: National Planning Policy Framework - GOV.UK

[103] Water Framework Directive, October 2000. Available at: Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy

[104] Groundwater Directive, December 2006. Available at: Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration

[105] Water Resources Act, 1991. Available at: Water Resources Act 1991

[106] Land Drainage Act, 1991. Available at: Land Drainage Act 1991

[107] Water Act, May 2014. Available at: Water Act 2014

[108] Flood and Water Management Act, 2010. Available at: Flood and Water Management Act 2010

[109] Pollution Prevention and Control Act, 1999. Available at: Pollution Prevention and Control Act 1999

[110] The Water Supply (Water Quality) Regulations 2000. Available at: The Water Supply (Water Quality) Regulations 2000

[111] The Water Resources (Environmental Impact Assessment) (England and Wales) (Amendment) Regulations, 2017. Available at: The Water Resources (Environmental Impact Assessment) (England and Wales) (Amendment) Regulations 2017

[112] The Water Environment (Water Framework Directive) England and Wales Regulations, 2017. Available at: The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017

[113] Anglian river basin district river basin management plan: updated 2022, December 2022. Available at: Anglian river basin district river basin management plan: updated 2022 - GOV.UK

- Great Ouse Catchment Flood Management Plan (2011) [114];
- Greater Cambridgeshire Level 1 Strategic Flood Risk Assessment (2021) [115] (SFRA);
- Cambridgeshire Preliminary Flood Risk Assessment (2011);
- Cambridgeshire Surface Water Planning Guidance (2025) [116];
- Cambridgeshire Flood and Water Supplementary Planning Document (2016) [117];
- Adopted South Cambridgeshire Local Plan (2018)[118] (in particular policies CC/1, CC/7, CC/8, CC/9 and Policy Review of the Adopted Local Plans for Greater Cambridge (2025) [119];
- South Cambridgeshire Local Plan 2018 – Five Yearly Policy Review (Policies 28, 31 and 32);
- Water Resources Management Plan 2024, Cambridge Water (2025) [120]

10.4 Assessment Methodology

10.4.1 The assessment will be undertaken in accordance with LA113 Road Drainage and the Water Environment and reflection advice provided by consultees. Although LA113 is intended to guide assessment of highway projects, it is robustly applied to assessment water environment effects of different development types and the broad principles are applicable to the Proposed Development.

10.4.2 The assessment will be informed by a FRA with supporting Drainage Strategies which will also be prepared and will set out proposals for the management of flood risk, surface water runoff management, water quality treatment and foul drainage proposals.

10.4.3 Methods of assessment are considered consistent with current guidance and recommendations, such as the National Planning Policy Framework (NPPF), accompanying PPG and recognised published design guidance from approving authorities to ensure the findings represent a robust approach to the assessment.

10.4.4 The assessment scope covers flood risk, drainage, water quality, and water quantity.

[114] Great Ouse Catchment Flood Management Plan, January 2011. Available at: Great_Ouse_Catchment_Flood_Management_Plan.pdf

[115] Greater Cambridge Integrated Water Management Strategy, Level 1 Strategic Flood Risk Assessment, July 2021. Available at: https://www.greatercambridgeplanning.org/media/2552/strategicfloodriskassessment_gclp_210831_accessible.pdf

[116] Cambridgeshire County Council, Surface Water Planning Guidance, May 2025. Available at: Surface Water Planning Guidance

[117] Cambridgeshire Flood and Water Supplementary Planning Document, July 2016. Available at: Cambridgeshire Flood and Water Supplementary Planning Document

[118] Adopted South Cambridgeshire Local Plan, September 2018. Available at: South Cambridgeshire Local Plan 2018 - South Cambs District Council

[119] Policy Review of the Adopted Local Plans for Greater Cambridgeshire, January 2025. Available at: Greater Cambridge Adopted Plans Policy Review_Jan 2025

[120] Cambridge Water WRMP24. Available at: cam-water-resources-management-plan-2024-final.pdf

10.4.5 When assessing significance, reference shall be made to LA 113 Road Drainage and the Water Environment which reports the importance of water environment attributes, which ranges from Low to Very high and includes surface water, groundwater and flood risk.

10.4.6 The magnitude of an impact on an attribute will be estimated ranging from Negligible to Major or No Change. Impacts can be either Adverse or Beneficial. Significant effects typically comprise effects that are within the moderate or major categories.

10.4.7 Table 10.1: Significance Criteria to be applied in the Water Resource chapter is as follows, but will be reviewed at the production stage.

Table 10.1: Significance Criteria

Significance	Criteria
Major Beneficial	Major Beneficial change to the regional hydrological regime. Major Beneficial change in volume and/or peak discharge of surface water runoff from the site. Major improvement in ground or surface water quality. Major improvement to flow conveyance and floodplain storage. Major reduction in reference modelled flood levels limited to the Application; and Major decrease in foul discharge flows from the Site.
Moderate Beneficial	Moderate Beneficial change to the regional hydrological regime. Moderate Beneficial change in volume and/or peak discharge of surface water runoff from the site. Moderate improvement in ground or surface water quality. Moderate improvement to flow conveyance and floodplain storage. Moderate reduction in reference modelled flood levels limited to the Application; and Moderate decrease in foul discharge flows from the Site.
Minor Beneficial	Minor Beneficial change to the regional hydrological regime. Minor Beneficial change in volume and/or peak discharge of surface water runoff from the site. Minor improvement in ground or surface water quality. Minor improvement to flow conveyance and floodplain storage. Minor reduction in reference modelled flood levels limited to the Application; and Minor decrease in foul discharge flows from the Site.
Negligible	No change to the regional hydrological regime. No change in volume and/or peak discharge of surface water runoff from the site. No change in ground or surface water quality. No change to flow conveyance and floodplain storage. No change in reference modelled flood levels limited to the Application; and No change in foul discharge flows from the Site.
Minor Adverse	Minor negative change to the regional hydrological regime. Minor increase in volume and/or peak discharge of surface water runoff from the site. Minor decline in ground or surface water quality. Minor negative change to flow conveyance and floodplain storage. Minor increase in reference modelled flood levels limited to the Application Site; and Minor increase in foul discharge flows from the Site.
Moderate Adverse	Moderate negative change to the regional hydrological regime; Moderate increase in volume and/or peak discharge of surface water runoff from the site; Moderate decline in ground or surface water quality;

Significance	Criteria
	Moderate negative change to flow conveyance and floodplain storage; Moderate increase in reference modelled flood levels limited to the Application Site; and Moderate increase in foul discharge flows from the Site.
Major Adverse	Major negative change to the regional hydrological regime; Major increase in volume and/or peak discharge of surface water runoff from the site; Major decline in ground or surface water quality; Major negative change to flow conveyance and floodplain storage; Major increase in reference modelled flood levels limited to the Application Site; and Major increase in foul discharge flows from the Site.

Geographical Scope

10.4.8 The study area for flood risk and water resources takes account of all current options within the Site boundary and will encompasses the reaches of the existing watercourses and surface water drainage infrastructure adjacent to the site boundary.

10.4.9 Other features and hydrological catchments will be considered and refined following stakeholder engagement and the production of the technical studies in support of the site such as the FRA and Drainage Strategy.

10.4.10 The features and catchment studies used will be based on the professional judgment of the assessor for the ES Chapter based on current knowledge of the study area (including surface water abstractions and downstream watercourses).

Temporal Scope

10.4.11 The temporal scope of the assessment is defined by the following Project phases:

- Construction Phase, and
- Operational Phase

10.4.12 The existing baseline date is 2024/2025 since this is the period in which the baseline studies to inform this chapter were undertaken.

10.4.13 The timing and phasing of the Project is not currently fixed but will be used to inform the production of this ES Chapter. Although it is not anticipated that the phasing of the Project will have any effects on the flood risk and water resources at the Site. However, runoff rates from the Site and associated SuDS attenuation areas will be designed to reflect the proposed phasing of the Project to ensure only the catchment areas which are being developed have runoff rates which are adjusted accordingly, so as to not increase runoff from the Site.

10.5 Likely Significant Effects

10.5.1 Potential likely significant effects of the Proposed Development are listed below, organised into the construction phase and operational phase

Construction phases:

- Increase in fluvial flood risk on-site and off-site resulting from the construction of the Proposed Development being located within the floodplain and potentially being constructed within a flow route.
- Earthworks may mobilise pollutants in soil and result in contamination of water resources through surface water run-off and percolation to groundwater;
- Earthworks/ creation of new ponds/ drainage systems/ culverts/ crossings/ temporary bunding or material stockpiles may alter runoff, hydrology or morphology of nearby water features resulting in changes to flood risk or habitats;
- Changes to flood risk emanating from the Proposed Development;
- Pollution to watercourses/ groundwater from accidental spillage of fuels, hydraulic fluids and lubricants;
- Pollution to watercourses / groundwater due to vandalism of stores or plant;
- Foul drainage from washroom facilities, wheel washing, etc. impacts on receiving treatment works and any associated waters;
- Water abstraction/ dewatering or change in groundwater level may alter hydrological regime;
- Increase in water supply used during construction could temporarily result in increase in water being abstracted from groundwater resources.

Operation Phase:

- Increase in fluvial flood risk on-site and elsewhere resulting from the operation of the Proposed Development being located within the floodplain and potentially being constructed within a flow route;
- Changes in volume, rate and quality of surface runoff from introduced impermeable surfaces such as roofs, access roads, and internal roads affecting flow characteristics or causing soil erosion;
- Pollution of groundwater (and eventually receiving watercourses) from accumulated contaminants in runoff from impermeable surfaces;
- Changes to the permeability of surface cover may impact on the underlying hydraulic regime and groundwater recharge;
- Surface drainage schemes may alter the flow characteristics of nearby watercourses and flooding characteristics, which without suitable mitigation could increase the flood risk to downstream areas;
- Physical disturbance to surface water features from increased use of the Site;
- Foul drainage from and the domestic operations (i.e. washrooms, kitchens etc) of the Proposed Development, increase in foul discharge to associated wastewater treatment works and associated waters; and
- Increase in water supply used during operations of the Proposed Development could result in increase in water being abstracted from groundwater sources.

10.6 Likely Mitigation

10.6.1 To comply with current legislation, policy and guidance requirements, the design of the Proposed Development must consider all forms of potential flood risk and therefore this will be addressed within a site-specific Flood Risk Assessment (FRA) in support of the Site. A Flood Risk Assessment will therefore be submitted in support of the planning application together with a Site-wide (Outline) Sustainable Drainage Strategy, both demonstrating full accordance with South Cambridgeshire Local Plan policies. These will be undertaken in consultation with the relevant and approving stakeholders, including the EA, Lead Local Flood Authority (LLFA), Swavesey Internal Drainage Board (IDB) and South Cambridgeshire District Council (SCDC).

Construction

10.6.2 During the construction phase, a Construction Environmental management Plan (CEMP) will be produced which will provide the framework for managing environmental impacts during the construction phase of the Scheme, including water resources and flood risk elements applicable during the construction phases.

10.6.3 Mitigation measures during construction will also include careful siting of compounds (i.e. located outside areas of flooding) / refuelling areas with bunding as appropriate, the early construction of Sustainable Drainage System (SuDS) features, adherence to EA pollution prevention advice and consultation with the IDB, proposals will include appropriate maintenance of water features. Any existing water and drainage infrastructure will be marked out and protected.

Operation

10.6.4 The FRA will highlight the application of the Sequential approach will be applied, with development located outside of any existing fluvial flood risk extents, in full accordance with the NPPF. Surface Water hydraulic modelling is also being undertaken and will be consulted on with the LLFA. The hydraulic modelling work will help inform the masterplan and mitigation solutions for the Site.

10.6.5 The management of surface water run-off and the increase demand on foul infrastructure and potable water supplies in the operational phases will also be addressed at planning. The Surface Water will be informed by consultation with key stakeholders including the EA, LLFA, SCDC and IDB. The proposed on-Site drainage measures (with the inclusion of SuDS) will be embedded in the design of the Proposed Development, either through application of ‘industry standard’ measures taken at the construction stage, or through legislative and policy requirements of the management of flood risk in the Proposed Development.

10.6.6 The majority of the Site drains to an existing Award drain (Uttons Drove) which is adopted by SCDC. This drain eventually flows into the Swavesey Drain, manged by the IDB, meaning a telemetry-based system is likely to needed to manage surface water flows from the Site, to store surface water flows on-Site when the gates at Webb’s Hole Sluice are closed. This shall be confirmed with Swavesey IDB whilst progressing drainage strategy for the Site.

10.6.7 Appropriate pollution control measures will be included in the surface water drainage system to minimise the risk of contamination or pollution entering the receiving systems from surface water runoff from the Proposed Development and the Simple Index Approach applied. The drainage system will therefore be designed to comply with the requirements of the SuDS treatment train as laid out in 121CIRIA C753 ‘The SuDS Manual’ with the final strategy for pollution control being confirmed as part of the detailed design.

[121] CIRIA SuDS Manual (C753) 2015 ISBN 978-0-86017-759-3

10.6.8 The application of the surface water drainage strategies will prevent any potential impact from the Proposed Development and so no detriment to existing drainage infrastructure or flood risk.

10.6.9 Anglian Water Services Ltd (AWS) are the incumbent wastewater authority for the area. Further consultation will be undertaken to help inform the technical studies for the Site.

10.6.10 The on-Site foul water strategy will likely consist of a gravity sewer network out-falling to an on-Site treatment works which will discharge to an existing watercourse onsite, this is currently being consulted on.

10.6.11 To inform the construction and operational phases of the Proposed Development an assessment will be undertaken on Water Resource. A Water Neutrality Assessment is not a requirement for support of planning, but it is acknowledged the area is significantly water stressed and there is a concern among approving authorities of the potential detriment development may have to water supplies (groundwater abstractions) and associated sensitive environmental receptors (such as chalk streams) within the area. However, there is no access to water offsetting initiatives or schemes, provided at a regional scale, to allow for developers to effectively offset any potential risks, or guidance on any mitigating requirements, and therefore impacts to potential receptors cannot be quantified, unless all development within the region is to cease whilst awaiting strategic solutions to come online in the next 15 years or more (i.e. Fen Reservoir).

10.6.12 There is, however, an opportunity for developments at a site-specific scale to be designed to ensure water usage is kept to a minimum and reduce the potential risk to water supplies in the catchment area. Therefore, in conjunction with the use of Water Credits (subject to their provision), a site-specific Water Resource Assessment will be undertaken as part of the technical documents for planning. This report will include supporting calculations meeting the BREEAM WAT 01 credits and consultation with water suppliers. This will allow for water saving initiatives and proposals to become embedded into the Proposed Development.

10.6.13 A Site Investigation will also be undertaken to inform the masterplan and planning application which will characterise the hydrogeological regime, geology and soils across the Site.

10.7 Cumulative Effects

10.7.1 The impacts of construction and operation of the Proposed Development in combination with other relevant committed developments will be accounted for Flood Risk and Water Resource chapter and will be identified against the effects identified above.

10.8 Summary

10.8.1 Table 10.2 summarises the potential likely construction, operational and cumulative effects of the Proposed Development.

Table 10.2: Topic Scope

Potential Receptor	Potential Effects	Scoped In (Y/N)
Uttons Drove Drain	Flood Risk/ Water Quality	Y
Existing Attenuation Feature	Flood Risk/ Water Quality	Y
Ordinary Watercourses	Flood Risk/ Water Quality	Y
Existing Land Drains	Flood Risk/ Water Quality	Y
Webb's Hole Sluice	Flood Risk/ Water Quality	Y
Wastewater network	Capacity / Water Quality	Y
Groundwater supplies	Capacity / Water Quality	Y

11 Historic Environment

11.1 Introduction

11.1.1 The chapter will consider the potential effects, both physical and setting, of the project on built historic assets as well as on buried archaeological remains. The proposed scope is informed by an initial study of readily available sources and experience from similar projects undertaken in the area. The following scope is intended to facilitate the production of an impact assessment that focuses on the potentially significant effects of the project, in accordance with current guidance.

11.2 Baseline Conditions

11.2.1 This Chapter of the Scoping Report identifies the Cultural Heritage assets of relevance to the Development and considers the potential effects arising from the construction and operation and maintenance phases. Heritage assets are defined here 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.'

11.2.2 It considers all undesignated heritage assets within a 1km study area and all designated assets within a 5km study area. These study areas are considered appropriate given the scale of the Proposed Development and the form and nature of the surrounding landscape and settlement pattern. This Scoping Report has been informed by the following:

- desk-top studies, site visits and surveys;
- review of relevant online data sources;
- local planning policy and guidance;
- the EIA Regulations and EIA good practice guidance; and
- experience of other similar developments.

Designated Heritage Assets

11.2.3 There are designated historic assets within the Site. However, the following designated assets have been identified within the 5km Study Area. A 5km Study area is considered appropriate for this scheme given the scale and massing of the proposed units within the Site and the relatively open and nature of the landscape particularly to the north and north east, and has been accepted on similar schemes elsewhere in Cambridgeshire. a 5km Study area for designated heritage assets was also agreed for an earlier Proposed Development of this nature on the Site.

Scheduled Monuments

- 1006869 Over Windmill;
- 1006890 Overhall Grove moated site;
- 1006913 'Castle Hill' earthworks;
- 1006914 Priory earthworks; and
- 1020392 Low Hill bowl barrow, 575m north of Fen Drayton Reservoir.

Registered Parks and Gardens

- 1000614 Childerley Hall, Grade II*.

Conservation Areas

- Elsworth;
- Fen Drayton;
- Fenstanton;
- Hilton;
- Holywell;
- Knapwell;
- Long Stanton; and
- Swavesley.

Listed Buildings

11.2.4 There are some 255 Listed Buildings within 5km of the Site – 6 Grade 1, 18 Grade II* and 221 Grade II – primarily concentrated in the villages which surround the Site. There are four Listed Buildings located within 1km of the Site:

- A Grade II Listed Mile Post to the west of Scotland Drove (NHLE 1127245) c.. 165m to the north of the Site;
- the Grade II Listed Church Farmhouse (NHLE 1127250) c. 750m south of the Site;
- the Grade II* Listed Parish Church of St Peter (NHLE 1331352) c. 800m south of the Site; and
- The Grade II Listed 6 School Lane (NHLE entry: 1226268) c.875m south of the Site.

11.2.5 None of these Listed Buildings have any inter-visibility with the Site as a result of intervening topography and woodland, which screens views between them and the Site. initial assessment suggests that beyond 1km, there are 5 Listed Buildings which have possible intervisibility:

- The Grade II* Listed Parish Church of St Mary. (NHLE 1127229) c.2.1km north-west of the Site in Fen Drayton;
- The Grade II* Listed Parish Church of All Saints (NHLE 1127241) c.2.3km south-east of the Site in Lolworth;
- the Grade II Listed Hale Windmill. NHLE 1226282 c. 2.7km north of the Site;
- the Grade I Listed Parish Church of St Michael (NHLE 1226375) c.3.5km north-east of the Site; and
- The Grade I Listed Parish Church of St Peter and St Paul (NHLE 1330754) c.3.8km north-west of the Site in Fenstanton.