Gladman Developments Ltd.

Land at the Hill, Littlebourne

SHADOW HABITATS REGULATIONS ASSESSMENT

March 2023

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1.0 INTRODUCTION

1.1 The following Shadow Habitats Regulations Assessment has been prepared by FPCR Environment and Design Ltd., on behalf of Gladman Developments Ltd., to assess the potential effects of the proposed Evenhill planning application (pending submission), henceforth referred to as "the Site", on nearby sites designated as part of the National Site Network (NSN) and Ramsar Wetlands, in accordance with the Conservation of Habitats and Species Regulations 2019 (EU Exit) (as amended).

1.2 The Habitat Regulations aim to protect a network of sites in the UK that have rare or important habitats or species. The competent authority has a duty to ensure that the activities they regulate, have no adverse effect on the integrity of a European designated site. It is the responsibility for the competent authority to undertake the assessment; however, ecological consultants routinely supply as much information as possible to aid the authority in their assessments as part of the planning process, taking the form of a shadow HRA, or similar document.

1.3 The purpose of this sHRA is to provide the "Competent Authority" (Kent County Council), under the Habitats Regulations, the required information to either a) conduct their own HRA, as is their legal obligation, or b) adopt this document as the official HRA.

Proposals and Site Context

1.4 The Site (*Figure 1*), is approximately 15.77 ha in area, comprises the northern and southern extents of one larger arable field, bisected by a stream passing east to west. The field is bordered by arable margins, scattered scrub, and tall ruderal vegetation. The eastern edge of the northern extent of the field was bound by the stream, which passes north along the eastern boundary. Hedgerows form the northern and western boundaries of the northern extent, and the northern and south-eastern boundaries of the southern extent.

1.5 The Site is situated on the south-western periphery of Littlebourne, east of Canterbury. The surrounding landscape to the north, south and west was predominantly comprised of a mosaic of arable farmland and woodland, including parts of the Trenley Park Woods Local Wildlife Site (LWS). Howlett's Wild Animal Park lies directly to the south. Canterbury Road (A257) runs along the northern boundary, with Bekesbourne Lane directly parallel with the south-easternmost boundary.

1.6 The Site is being submitted for outline planning (previous ref from applications submitted in 2021: CA/21/01657), formerly for up to 115 residential dwellings (covering 3.13ha), now being revised to comprise a residential development of up to 300 units (9.17ha), with associated infrastructure. Green infrastructure (GI) will be incorporated, which will include structural landscape planting (trees and scrub), a community orchard, species-rich grassland, wetland, and public open space (comprising play provision and footpath/cycle routes) (*Development Framework, 09538-FPCR-XX-XX-DR-L-0001 issue 7, FPCR, Nov 2022)*.

1.7 Sustainable drainage and wetland will be implemented adjacent to the stream on the eastern boundary of the northern extent of the field, and the northeast corner of the southern extent of the field. These will comprise buffer strips that include attenuation ponds, which will also incorporate features of ecological benefit.

1.8 Habitat loss will be predominantly restricted to cultivated arable land, with associated margins. The majority of the hedgerow extent, and the stream on the eastern boundary, will be retained, with the exception of a few small losses to the hedgerows along Canterbury Road and Bekesbourne Lane to facilitate vehicular and pedestrian access. New hedgerows and several lines of trees will be planted throughout.

The HRA Process and Legislation

1.9 The legislation and national policy, relevant to the Habitats Regulation Assessment process, are summarised in *Appendix A*.

1.10 The HRA process has developed into a four-stage process summarised as follows:

- Stage One: Screening - also known as the Test of Likely Significant Effect (TOLSE). If the Competent Authority cannot screen out a *likely significant effect (LSE),* an Appropriate Assessment is required.
- Stage Two: Appropriate Assessment - the Competent Authority will only agree to plans or projects that will not affect the *integrity* of a European site, assessed via a process also known as the "Integrity Test". "Integrity" is assessed against a given European site's published Conservation Objectives.
- Stage Three: Alternative Solutions - assesses any alternative solutions of a potentially damaging plan, or project, that failed the Integrity Test. If it is determined there are no alternative solutions to the proposals, the project cannot be agreed to, and it will either need to be changed or refused.
- Stage Four: The final stage may allow a plan or project to proceed if after failing stage three, if it is for Imperative Reasons of Overriding Public Interest, and only if suitable compensatory measures are secured.

1.11 This sHRA has been conducted in the knowledge of two recent influential cases: the People Over Wind Judgement (12th April 2018) and recent Holohan Judgement (7th November 2018); a summary of which is provided in *Appendix A*. *Appendix A* also provides some background and case law examples in relation to "*Likely Significant Effect*" and "*Functionally Linked Land*", both of which are concepts discussed within this sHRA.

1.12 This sHRA identifies and considers each of the likely ecological pathways, in turn, between the Site and all NSN and Ramsar sites within a justified Zone-of-Influence (ZoI). Each was screened through a Stage 1: TOLSE for alone or in-combination effects, and any ecological pathways that could not be screened-out, or where specific mitigation was required to address a likely significant effect, were taken to a Stage 2: Appropriate Assessment (AA).

Zone of Influence and the National Site Network Considered

1.13 The following NSN sites have been screened-in to this HRA as they fall within 10km of the Site (*Figure 1*).

1.14 The two nearest NSN sites, listed below, cannot be ruled out of further assessment on the basis of a policy defined ZoI, which in this case is considered to be 6km, as determined by Birdwise North Kent[1,2].

- Stodmarsh SPA, SAC, and Ramsar – 2.3km north
- Blean Complex SAC – 5.9km north

1.15 Parkgate Down SAC, Tankerton Slopes & Swalecliffe SAC, Lyddon & Temple Ewell Downs SAC, The Swale SPA / Ramsar, Thanet Coast & Sandwich Bay SPA / Ramsar, and Wye & Crundale SAC, can each be scoped out of further assessment on the basis of the intervening distance (>11km) between these statutory designated sites and the application site, well outside their respective Zones of Influence (e.g., 6km for The Swale and 7.2km for Thanet Coast), which would make any potential impact from the development negligible.

1.16 Additionally, statutory designated sites are typically designated for supporting priority habitats and/or populations of notable species; for example, Tankerton Slopes & Swalecliffe SAC supports a nationally important population of Fisher's Estuarine moth, the main threat to which is damage to its preferred habitat from trampling. However, the Tankerton Slopes site comprises steep, difficult terrain, so visitors do not leave footpaths, minimising risk of trampling. Given the distances of these designated sites to the application site, which exceed their impact risk zones, and the nature of the features for which they were designated, any significant effect from the development is likely to be negligible.

Consultation Responses

1.17 In their decision notice concerning the previous outline planning application (CA/21/01657), Canterbury City Council, provided several reasons for refusal, among which were concerns relating to the impact of the development on statutory sites, specifically noting that:

"The proposed development would cause a likely harmful significant impact on the Stodmarsh SAC, SPA and Ramsar and without appropriate mitigation it would fail the Appropriate Assessment required by the Habitat Regulations. The proposal is also in conflict with the National Planning Policy Framework and policies SP1 and LB5 of the Canterbury District Local Plan 2017."

1.18 Natural England (NE) were also consulted on the earlier iteration of the application (CA/21/01657), in August 2021. In relation to designated sites they similarly noted that:

"The proposed development falls within the Stodmarsh Nutrient Impact Area. All new development with overnight accommodation must take into account Natural England's Advice on Nutrient Neutrality for New Development in the Stour Catchment. Canterbury City Council will need to address the requirements of the Conservation of Habitats and Species Regulations 2017 (as amended), for which the applicant will need to provide information regarding nutrient budget calculations, as detailed in Natural England's advice note. We advise that due to the need for mitigation to avoid an impact on Stodmarsh there will be a need for an appropriate assessment to be carried out as part of this application."

[1] Bird Wise North Kent (2023) About Bird Wise: SPA and Ramsar 6km buffers, available at https://northkent.birdwise.org.uk/about/ [accessed 07.02.23]
[2] North Kent SAMMS Project Board (2018) Bird Wise North Kent – Mitigation Strategy, Bird Wise

1.19 The decision to submit this sHRA to Canterbury City Council, was based on the need to address the comments from the council, and Natural England, to provide a robust assessment of the impacts to statutory sites, likely to arise due to the revised proposals. This ssHRA and accompanying Ecological Impact Assessment have been completed to support a resubmission of these revised proposals.

2.0 STAGE 1 SCREENING: STODMARSH SPA, SAC, AND RAMSAR

Designations

Stodmarsh Special Area of Conservation[3]

Annex II Species – Primary Reason for Site Selection:

2.1 The SAC is designated for the substantial population of Desmoulin's whorl snail *Vertigo moulinsiana* that can be found beside ditches, which pass through wet pastureland on the River Stour floodplain. Reed sweet-grass *Glyceria maxima,* large sedges *Carex sp.,* and common reed *Phragmites australis* dominate the vegetation.

Stodmarsh Special Protection Area[4]

2.2 Stodmarsh is wetland of international importance, comprising open waterbodies, reedbeds, grazing marsh and alder carr. It qualifies under Article 4.1 of the EC Birds Directive by regularly supporting an internationally important wintering populations of two Annex I species; bittern *Botaurus stellaris* and hen harrier *Circus cynaneus* (each in numbers comprising at least 1% of the British wintering population).

2.3 The SPA also qualifies under Article 4.2 of the Directive by virtue of regularly supporting 1% of the British breeding population of gadwall *Anas strepera*, and an average of 42 pairs of bearded tit *Panurus biarmicus* (representing 7% of the British breeding population).

2.4 The area further qualifies under Article 4.2 by regularly supporting nationally important numbers of the following migratory, overwintering and breeding waterfowl, waders, and songbirds, associated with reedbeds, grazing marsh, and marsh (*Table 1: Stodmarsh SPA Qualifying Bird Species*).

Table 1: Stodmarsh SPA Qualifying Bird Species

Nationally Important Migratory	Nationally Important Breeding	Nationally Important Wintering
Gadwall *Anas strepera* (1.2% British)	Great crested grebe *Podiceps cristatus*	White-fronted goose *Anser albifrons*
Shoveler *Anas clypeata* (1.8% British)	Lapwing *Vanellus vanellus*	Wigeon *Anas penelope*
	Redshank *Tringa totanus*	Mallard *Anas platyrhynchos*
	Snipe *Gallinago gallinago*	Pochard *Aythya ferina*
	Grasshopper warbler *Locustella naevia*	Tufted duck *Aythya fuligula*
	Savi's warbler *Locustella luscinioides*	Water rail *Rallus aquaticus*
	Sedge warbler *Acrocephalus schoenobaenus*	Lapwing

[3] Natural England (2015), Standard Data Form for sites within the 'UK national site network of European Sites, Stodmarsh SAC, (UK0030283) <https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0030283.pdf> accessed 06.02.2023.
[4] JNCC (1993), EC Directive 79/409 on the Conservation of Wild Birds: Special Protection Area: Stodmarsh, Kent <file:///C:/Users/PJP1/Downloads/Stodmarsh%20(1).pdf> accessed 06.02.2023.

Nationally Important Migratory	Nationally Important Breeding	Nationally Important Wintering
	Reed warbler *Acrocephalus scirpaceus*	Snipe

Stodmarsh Ramsar Wetland of International Importance[5]

2.5 Stodmarsh qualifies as a Ramsar wetland under criterion 2 for supporting six British Red Data Book wetland invertebrates, two nationally rare plants, five nationally scarce plants, and a diverse assemblage of rare wetland birds.

2.6 The Ramsar supports nationally important overwintering, breeding, and migratory populations of the wetland bird species included in the SPA designation; gadwall, bittern, shoveler, and hen harrier, in addition to other noteworthy birds (water rail and ruff *Philomachus pugnax*) present in numbers of national significance in winter.

Conservation Objectives[6]

2.7 Regarding the SPA and SAC and the natural habitats, individual species and/or assemblage of species, for which the site has been classified (the 'Qualifying Features'), and subject to natural change:

"…e*nsure that, the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its qualifying features, by maintaining or restoring;*

- *The extent and distribution of the habitats of qualifying features,*
- *The structure and function of the habitats of qualifying features,*
- *The supporting processes on which the habitats of the qualifying features rely,*
- *The populations of each of the qualifying features; and*
- *The distribution of the qualifying features within the site."*

Threats and Pressures

2.8 The following section details the main threats and pressures that have been identified through existing documentation and evidence related to the Stodmarsh SPA and SAC. The Site Improvement Plan (SIP) for Stodmarsh[7], which encompasses both the SPA and SAC, identifies several key pressures relevant to this sHRA (*Table 2* below).

[5] Information Sheet on Ramsar Wetlands (RIS): Stodmarsh (1993) JNCC https://jncc.gov.uk/jncc-assets/RIS/UK11066.pdf [accessed 07.02.23].
[6] Natural England (2019), European Site Conservation Objectives for Stodmarsh Special Protection Area Site Code: UK9012121 Publication date: 21 February 2018 (Version 3) <http://publications.naturalengland.org.uk/publication/6543516511502336> [accessed 06.02.23].
[7] Site Improvement Plan: Stodmarsh (SIP231). Natural England (30/10/2014 version 1) http://publications.naturalengland.org.uk/publication/5749196032311296 [accessed 06.02.23].

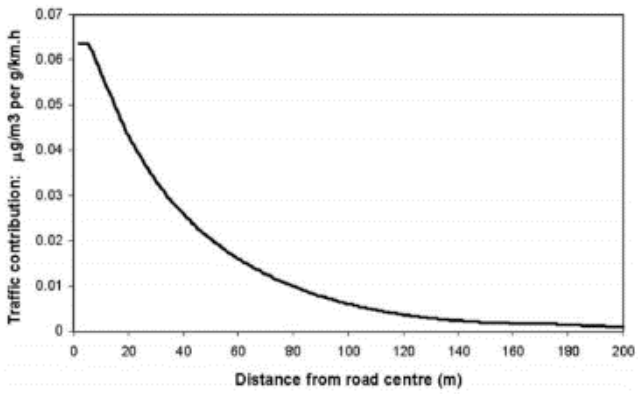
Table 2: Relevant Threats and Pressures – Stodmarsh SPA and SAC

Priority & Issue	Threat or Pressure	Measure
Air Pollution: risk of atmospheric nitrogen deposition	Pressure	Control, reduce, and ameliorate atmospheric nitrogen impacts
Water Pollution	Pressure	Provide planning guidance and advice to developers and landowners

2.9 Further pressures and/or threats to the integrity of the SAC/SPA were highlighted in the SIP; however, these were impacts related to invasive species and inappropriate scrub control, which relate to direct habitat management of the Stomarsh and will be unaffected by the development proposals. Given the intervening distance and nature of the residential development proposed at Evenhill (the Hill), neither impact pathway is relevant, and have been scoped out of further consideration in this assessment.

Air Quality

2.10 Since the SIP was produced, there is new published guidance from Natural England (2018)[8] on air quality with a four-step process for HRAs. Where a road, likely to be receive increased traffic flow from a development, falls within 200m of a European site, then an impact is possible. The 200m distance criteria is based on the often-quoted evidence[9] that shows pollutant concentrations fall away steeply with distance from the road.



2.11 Wardell Armstrong have conducted an Air Quality Assessment (January 2023) of the Site following guidance from the Institute of Air Quality Management (IAQM) into the potential impacts to air quality that may result from the proposed development. Assessment was based on predicted levels of nitrogen dioxide and particulate matter at various sensitive receptors during the construction and operational phases of the proposed development[10]. Traffic flow at each of these receptors was calculated by consultants i-Traffic.

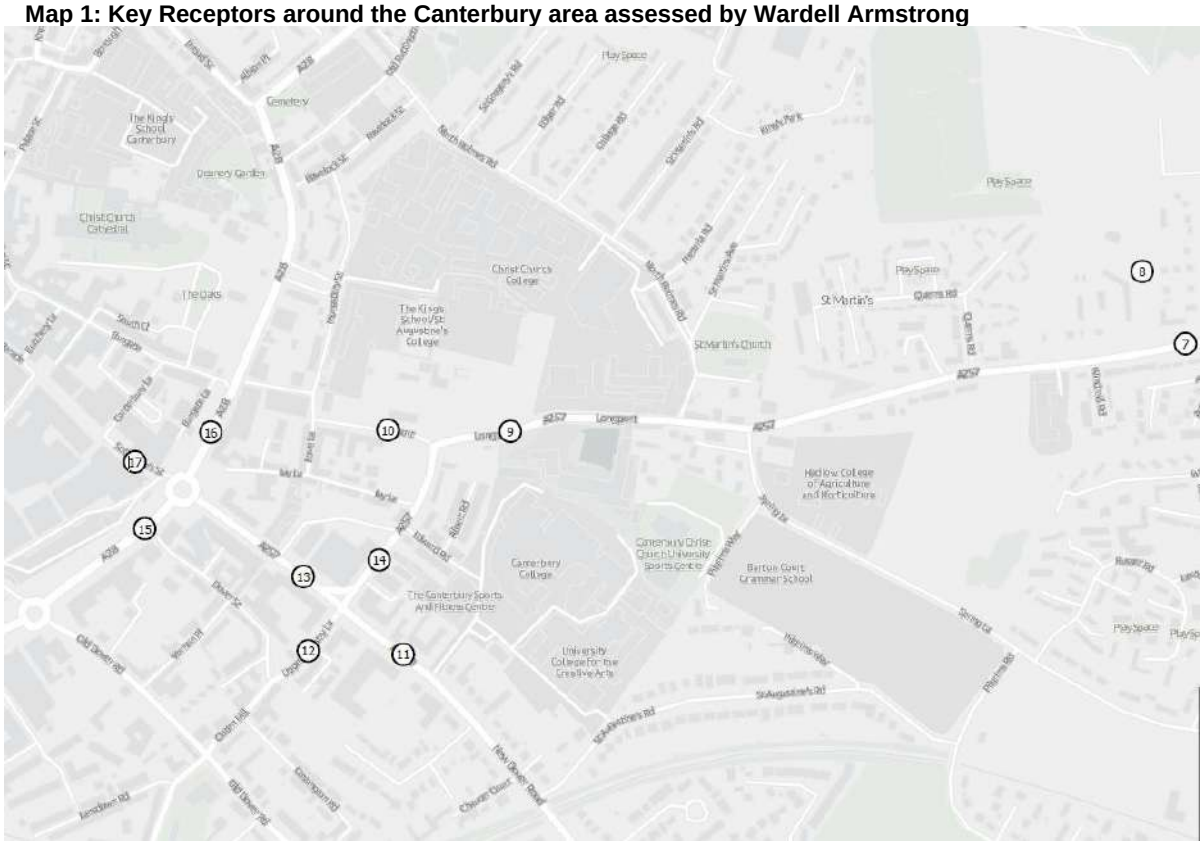
2.12 The locations of these key receptors along the A257 and around the Canterbury area are shown on *Map 1* below, based on email correspondence from John Wilkinson (of i-Traffic):

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

[9] Design Manual for Roads and Bridges Volume 11 Environmental Assessment Section 3 Environmental Assessment Techniques Part 1 Air Quality

[10] Sanderson, P.M (2023) Air Quality Assessment: The Hill, Littlebourne. Wardell Armstrong, Bolton

Map 1: Key Receptors around the Canterbury area assessed by Wardell Armstrong



2.13 The assessment of traffic flow conducted by the i-Transport team concluded that the traffic flows along the A257 and around Canterbury, at each of these receptors, would be less than 1000 AADT threshold, as summarised in *Table 3* below:

Table 3: Annual Average Daily Traffic (AADT) Levels at Specific Key Receptors around Canterbury and the A257

Link Number	Links	Development Traffic
7	A257 Littlebourne Road (East of Smith Way)	961
9	A257 St Martin's Hill (East of St. Augustine's Rdbt)	884
13	A257 St. Georges Place (West of Upper Chantry Lane)	842
14	A257 Lower Chantry Lane (North of A2050 New Dover Road)	884
15	A28 Upper Bridge Street (South of A257)	453
16	A28 Lower Bridge Street (North of A257)	301

2.14 i-Transport have not calculated any change in traffic flow on the A28, at Stodmarsh, but given the traffic levels above, which demonstrate traffic notably dispersing as it moves out from Littlebourne, with the nearest point to the development already less than 1000 (961 AADT), the development would be expected to generate significantly lower traffic flows on the A290 than the 1,000 AADT parameter.

2.15 Based on the above, the development proposals would not be expected to result in any Likely Significant Effects on Stodmarsh SPA and SAC, with regard to air quality and associated effects of nitrogen deposition.

Water Quality

2.16 Canterbury Local Plan states that development in the Stour catchment needs to ensure that excessive extraction of water does not lead to insufficient water supplies in the ditch system. Wastewater discharges must also avoid decreasing the quality of the water supply throughout the catchment, whereby assessments will need to be made to ensure that there is local capacity at wastewater treatment works (WWTW) for this development.

2.17 Natural England (NE) has identified increases in nitrogen and phosphorus at Stodmarsh, which is leading to eutrophication. In November 2020, NE published guidance on nutrient neutrality for new developments in relation to Stodmarsh designated sites[11]. This guidance is used to calculate the existing nitrogen and phosphorous load of the site compared to its future potential use; from which it can be determined whether there is surplus nitrogen and/or phosphorus that would require implementation of appropriate mitigation measures to achieve nutrient neutrality. If there is a deficit, then no additional mitigation is required.

2.18 Water Environment Ltd (January 2023)[12] have assessed the water quality impacts likely to arise from the proposed development at the Hill, Littlebourne In their report, they cite a recent study conducted by Dover District Council (DDC) on the connectivity of wastewater treatment works (WwTW) across the district, to watercourses that flow into the Stodmarsh statutory site. Dambridge WwTW, situated within the DDC administered area, in which Littlebourne is located, discharges treated effluent into the Wingham tributary of the Little Stour.

2.19 The Dover Connectivity Study (DCS) concluded that there is limited connectivity between the Dambridge WwTW and the Stodmarsh statutory sites, given that Stodmarsh lies upstream of the point at which the Little Stour (and Wingham tributary) enters the Great Stour. As such, there is considered to be negligible impact from Dambridge WwTW on the water quality of statutory sites, including Stodmarsh[14].

2.20 DDC have now concluded that nutrient neutrality does not apply to the Dover district, a conclusion agreed by Natural England[15]. Consequently, planning applications previously held up by the nutrient neutrality issue can be determined without the need for an Appropriate Assessment to evaluate the impacts of the proposals on Stodmarsh, via water quality pathways.

2.21 While impacts on water quality at the Stodmarsh statutory sites are unlikely, given the poor connectivity between the local WwTW and the statutory site, the additional wastewater from the operational development is likely to increase pressure on the existing infrastructure at Newnham Valley WwTW. To avoid this, Water Environment Ltd propose implementing an on-site wastewater treatment system to remove excess nutrients before discharge into the Nail Bourne, another tributary of the Little Stour. An aerated reed bed has been put forward as an appropriate mitigation measure to handle on-site treatment.

[11] Natural England (2020). Advice on Nutrient Neutrality for New Developments in the Stour Catchment in relation to Stodmarsh Designated Sites – For Local Planning Authorities

[12] Garrard, C. (2023) Littlebourne, Evenhill: Nutrient Neutrality Assessment and Mitigation Strategy. Reference 21045-NUT-RP-01/P01. Water Environment Ltd. London

[14] APEM (2022) Stodmarsh Water Quality Modelling. APEM Scientific Report P00006031. Dover District Council, September 2022, Final pp.32

[15] https://www.dover.gov.uk/Planning/Stodmarsh-Nutrient-Neutral-Methodology.aspx [accessed 14.02.23]

Recreational Impacts

2.22 Recreational activities at Stodmarsh are currently managed through the National Nature Reserve and a stewardship agreement, so most potential impacts from changing water levels and visitor pressure, have pre-existing management mechanisms in place. Currently, the numbers of people using the site are well controlled, and an education program is in place for visitors.

2.23 Access into Stodmarsh SPA/Ramsar for visitors appears to be limited at its nearest extent to the application site, with the best access being from the National Nature Reserve entrance, which does have a designated car park for a limited number of cars, and pre-existing footpath system. This is accessible off Stodmarsh Road, Stodmarsh, located approximately 5.6km (3.5miles) north of the application site (10-minute drive or an estimated 1-hour walk).

2.24 Additionally, the areas designated as a SAC, due to the presence of the Desmoulin`s whorl snail *Vertigo moulinsiana*, are inaccessible to the public, so direct negative effects from recreation to this species are unlikely.

Potential Ecological Pathways

2.25 This section (*Table 4*) identifies the possible ecological pathways between the site and the SAC/SPA that should be considered, applying assessment criteria based on best available scientific knowledge, and concludes whether there is a risk, or uncertainty, of a likely significant effect (LSE). Where risk or uncertainty is identified, those ecological pathways are then considered further in an Appropriate Assessment. The test does not require an assessment of every conceivable pathway, and the Precautionary Principle is applied only where there is *reasonable* scientific doubt that a pathway may have a possible LSE.

Table 4: Ecological Pathways and HRA Screening Conclusions – Stodmarsh SAC and SPA

Ecological Pathway	Assessment applied	Likely Significant Effect (LSE)
Habitat Loss - Direct Loss	**Will there be any direct loss, land take, damage, or fragmentation of habitat within the SPA and SAC itself?** - **No** (application Site is situated >2.0km from SAC/SPA)	No LSE Screened out
Habitat Loss - Functionally Linked Land/Habitat	**Will there be any loss of functionally linked habitat associated with the SAC/SPA?** - **No:** Ecological survey work detailed in the most recent Ecological Appraisal (FPCR, 2023) determined that the application site, which is dominated by arable monoculture, provides little supporting habitat of value to qualifying species associated with the Stodmarsh SAC or SPA designations. - The stream (drainage ditch, with flowing water) that bisects the field is isolated from neighbouring watercourses and unlikely to have been colonised by Desmoulin's whorl snail, which require calcareous wetlands, associated with rivers, lakes, and fens, with reed-grass and sedge[16] – habitat not identified within the application boundaries.	No LSE Screened out

[16] 1016 Desmoulin's whorl snail *Vertigo moulinsiana* (2023) JNCC https://sac.jncc.gov.uk/species/S1016/ [accessed 07.02.23].

Ecological Pathway	Assessment applied	Likely Significant Effect (LSE)
	- The Site does not constitute Functionally Linked Land in the context of the SPA/SAC. - **No likely significant effects** on the species associated with the statutory site, in relation to loss of FLL, are anticipated as a result of the development alone.	
Air Quality - Traffic (Alone and in-combination)	**Will there be a likely significant effect from nitrogen deposition on the SAC from increased traffic as a result of the proposals?** Assessment: Natural England 4 step Guidance[17] on traffic emissions. **Step 1:** Does the proposal give rise to emissions which are likely to reach a European site? No **Step 2:** Are the qualifying features of sites within 200m of a road sensitive to air pollution? No There are no notable strategic roads within 200m of Stodmarsh, with the only major road being the A28, that passes between 250 and 350m of the northern edge of the statutory site boundaries. Narrow country lanes; Grove Road, and Grove Ferry Road, pass directly adjacent to the south and east edges of the Stodmarsh SPA boundary; however, these are not on main routes into the surrounding area, and are unlikely to receive any meaningful increase in traffic flow from the development at the Hill, Littlebourne. Wardell Armstrong concluded in their air quality assessment that a proposed application for ~300 new properties (as per the revised scheme that encompasses a larger area) would not be expected to have a significant increase in local road traffic. Eleven representative, pre-existing receptors were selected for their assessment, these were considered based on their sensitivity to air pollutants and proximity to roads likely to be affected by development generated traffic. Traffic flow along these routes was calculated by consultants i-Transport (see sections 2.11 to 2.15). No roads near to Stodmarsh were selected for this assessment, so it can be reasonably concluded that the development is considered unlikely to increase traffic flow in proximity to Stodmarsh. Impacts on the concentrations of nitrogen dioxide and particulate matter-based pollutants were determined to be negligible at each of the sensitive human receptors considered (*Map 1*), and do not lead to an exceedance of annual mean objectives. The effect of the proposed development on human receptors is considered not significant. By extension therefore, any impact of the development on air quality at roads near Stodmarsh would also be expected to be **negligible**.	No LSE Screened out

[17] Natural England Internal Guidance – Approach to Advising Competent Authorities on Road Traffic Emissions and HRAsV1.4 Final - June 2018

Ecological Pathway	Assessment applied	Likely Significant Effect (LSE)
	No likely significant effects (from the application alone) on the SPA/SAC are anticipated. In combination effects on Stodmarsh can also be scoped out on the basis that the qualifying features of the SAC/SPA vulnerable to air pollution lie beyond 200m of strategic roads likely to receive significant increases in traffic flow from developments in Canterbury area.	
Air Quality and Pollution - Dust from construction	**Will there be a likely significant effect on the SAC from temporary dust generated during construction near the SAC?** Assessment: 1. The distance dust particles are likely to travel is between 350-400m[18,19] with the negative effects of dust on habitats and flora greater in magnitude the closer to the source of release (mostly within 100m from source). The SAC is located >2.0km from the Site, at its nearest point, and thus lies beyond this zone of dust dispersal.	No LSE Screened out
Water Quality - Phosphates and nitrates	**Is the Site hydrologically linked to the SAC/SPA?** - **No:** the stream that flows alongside the site, bisects the field, and drains into a culvert. The ultimate destination of the water flow once it enters the culvert is the Little Stour River, downstream of the Stodmarsh SAC/SPA. - Research conducted by APEM Ltd on behalf of Dover District Council has determined that nutrient neutrality is no longer an issue for developments in the Dover District, given the lack of connectivity between the district's WwTW and Stodmarsh. - Natural England have reviewed these findings and concur that Appropriate Assessment to determine the impacts of development proposals in the Dover District on water quality at Stodmarsh is no longer necessary. Their guidance note will be updated in due course to reflect this. - Appropriate mitigation measures (an on-site treatment system; aerated reed bed) to handle wastewater treatment will be implemented to reduce pressure on the local WwTW. With these mitigation measures, coupled with the confirmation of a negligible impact of Dover District WwTWs on Stodmarsh, **no likely significant effect** is anticipated.	No LSE Screened out

[18] Guidance on the assessment of dust from demolition and construction (2014) Institute of Air Quality Management
[19] Guidance on the Assessment of Mineral Dust Impacts for Planning (2016). Institute of Air Quality Management

Conclusion

2.26 The primary impact pathways likely to impact Stodmarsh are changes in water and air quality. Given the distance of the development from Stodmarsh, lack of strategic roads near Stodmarsh, and increases in traffic flow on local roads that still does not exceed 1000 AADT, a likely significant effect on air quality at Stodmarsh, due to the development proposals, is considered unlikely.

2.27 There are two likely sources of nutrients from the site: surface water and wastewater. As determined by DDC's Dover Connectivity Study, surface water from the site discharges to the Little Stour at a point upstream of the Stourmouth Pumping Station. Consequently, the study concluded that there is limited hydrological linkage between the district's wastewater treatment facilities and the Little Stour, and therefore a likely significant effect on water quality, from development in the Dover District, at Stodmarsh, is unlikely.

2.28 Given the results of the connectivity study, DDC have determined that an Appropriate Assessment of the impacts to water quality at Stodmarsh is no longer required for developments in the Dover District, given the lack of hydrological connectivity.

2.29 Wastewater from the site is acknowledged to normally discharge to Newnham Valley WwTW; however, instead wastewater will be treated on-site, before discharging into the Nail Bourne, a smaller tributary of the Little Stour. This avoids issues with failing infrastructure at Newnham Valley WwTW, where groundwater has, on occasion, flooded sewerage for Newnham Valley, requiring removal via tankers to a neighbouring WwTW.

2.30 The on-site wastewater treatment system proposed is an aerated reed bed system, situated downstream of twin septic tanks, that will be designed and implemented by ARM Ltd., specialists in reed bed construction, and operated by Severn Trent Connect (STC), and Ofwat-licenced water company.

2.31 An outline proposal for this proposed treatment system is appended to Water Environment's Water Quality Assessment Report (2023).

2.32 With the implementation of the proposed mitigation measures, as outlined above, there will be no adverse effect on the integrity of the Stodmarsh SAC/SPA as a result of proposed development alone, or in combination with other plans or projects.

2.33 Mitigation measures to control nutrient input into the wider Stour catchment (and therefore the Stodmarsh SAC/SPA) will also be of more immediate benefit to Littlebourne Stream LWS, providing on-site wastewater treatment and removal of excess nutrients, prior to discharging into the Nail Bourne river.

3.0 STAGE 1 SCREENING: BLEAN COMPLEX SAC

Designation

Blean Complex Special Area of Conservation[20]

Annex I Habitat – Primary Reason for Site Selection:

3.1 The SAC is classified under article 4(4) of the Habitats Directive as it supports an Annex I listed habitat type. The presence of Sub-Atlantic and medio-European oak, or oak-hornbeam, forest habitat forms the primary reason for the selection of the site as a SAC. At Blean, hornbeam *Carpinus betulus* coppice occurs, interspersed with stands of pedunculate oak *Quercus robur* and introduced sweet chestnut *Castanea sativa.* The sweet chestnut stands have also been managed historically as coppice.

3.2 Great wood-rush *Luzula sylvatica* is locally dominant throughout the woodland ground flora, with greater stitchwort *Stellaria holostea* found in more open glades.

Qualifying Species

3.3 The woodland that comprises Blean Complex forms important supporting habitat, and one of a few key British strongholds, for the heath fritillary butterfly *Mellicta athalea*; however, the species is not a primary reason for site selection.

Site of Special Scientific Interest

3.4 The boundaries of Church Woods (Blean) SSSI, East Blean Woods SSSI, and Ellenden Wood SSSI are each coincident with the boundaries of the SAC.

3.5 Church Woods SSSI comprises one of the most extensive areas of broadleaved woodland remaining in the Forest of Blean. The woodland supports a population of heath fritillary, a nationally rare species of butterfly. An outstanding assemblage of invertebrate species has also been recorded, along with a wide range of woodland birds, including three woodpecker species, eight warblers, and six tits. Several species which regularly breed here are elsewhere rather scarce in East Kent; these include woodcock *Scolopax rusticola*, nightjar *Caprimulgus europaeus*, redstart *Phoenicurus phoenicurus*, and wood warbler *Phylloscopus sibilatrix*. The area has especially good numbers of nightingales *Luscinia megarhynchos*.

3.6 Blean Woods is owned and managed by several partner organisations including the RSPB and is home to a variety of wildlife, including heath fritillary butterfly and various woodland birds, such nightjars, woodpeckers, tawny owl *Strix aluco* and 35 pairs of nightingales.

3.7 Ellenden Woods comprises an ancient woodland with several uncommon woodland types, including sessile oak-beech, hornbeam with pedunculate and sessile oak, and small plantations of sweet chestnut coppice. The wood supports a diverse flora with over 250 higher plants and 300 fungi present. Large numbers of insects, including three nationally rare species have been recorded.

[20] JNCC (2015), Natura 2000 Standard Data Form, Blean Complex, <www.publications.naturalengland.org.uk/publication/5635542465729600> [accessed 06.02.23].

3.8 The area also supports a diverse breeding bird community including wren *Troglodytes troglodytes*, blackcap *Sylvia atricapilla*, nightingale, and several common woodland species. Invertebrate species recorded here include brindled white spot moth *Ectropis extersaria*, two nationally rare flies (*Lophosia fasciata* and *Syntemna nitidula*), and a rare beetle *Cicindela hybrid*. Hazel dormouse *Muscardinus avellanarius* have also been recorded here.

3.9 While the SSSI designation of each separate woodland compartment are National designations, not European statutory designations, the elements of each SSSI do form component parts of the larger Blean Complex SAC and have therefore been referred to within this document, where relevant.

Conservation Objectives[21]

3.10 Regarding the SAC and the natural habitats and/or species for which the site has been designated (i.e., the qualifying features, Sub-Atlantic and medio-European oak, or oak-hornbeam forest, as detailed above), and subject to natural change:

"…e*nsure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring:*

- *The extent and distribution of qualifying natural habitats*
- *The structure and function (including typical species) of qualifying natural habitats, and*
- *The supporting processes on which qualifying natural habitats rely".*

Threats and Pressures

3.11 The following section details the main threats and pressures that have been identified through existing documentation and evidence related to the SAC itself.

3.12 The SIP for the Blean Complex[22], identified one key threat and/or pressure relevant for this HRA (*Table 5*).

Table 5: Relevant Threats and Pressures – Blean Complex SAC

Priority & Issue	Threat or Pressure	Measure
Air Pollution: risk of atmospheric nitrogen deposition	Threat	Investigate potential atmospheric nitrogen impacts

3.13 Blean Complex comprises several interconnected SSSI units, the nearest of which includes Church Woods, comprising 526ha of lowland broadleaved, mixed and yew woodland. All 16 SSSI units that form Church Woods were found to be in 'favourable' condition, except one (assessed as 'unfavourable – recovering') in the last assessment of each unit, conducted between 2009 and 2021[23].

[21] Natural England (2019), European Site Conservation Objectives for Blean Complex Special Area of Conservation Site Code: UK0013697 Publication date: 27 November 2018 (Version 3)
[22] Site Improvement Plan: Blean Complex (SIP018). Natural England (01/09/2015 version 1) http://publications.naturalengland.org.uk/publication/6295825890148358
[23] Natural England (2011) Church Woods Condition Assessment, <https://designatedsites.naturalengland.org.uk/ReportUnitCondition.aspx?SiteCode=S1004055&ReportTitle=Church%20Woods,%20Blean%20SSSI> [accessed: 06.02.23]

3.14 Blean Complex, notable for its oak hornbeam forest, is thought to be most vulnerable due to a lack of coppice management and deteriorating air quality; the former of which is unlikely to be impacted in any meaningful way from a residential development and is not considered further in this assessment.

Air Quality

3.15 A discussed earlier in paragraph 2.10, new guidance from Natural England (2018)[24] provides a methodology for assessment of air quality impacts and Wardell Armstrong have conducted an Air Quality Assessment (January 2023), following guidance from the IAQM.

3.16 The application site is situated 5.9km from the Blean Complex SAC, separated by the city of Canterbury, with the nearest strategic/main road to the SAC being the A290, which is located northeast of Canterbury. While it is likely that traffic generated by the development would travel towards Canterbury, the nearest large settlement, it is unlikely to follow this route, which would necessitate a large detour from the most direct available route. The number of additional vehicles using the A290, from the development, once operational, is thus likely to be low; with the AADT figures calculated for key areas around Canterbury (as discussed earlier in section 2.11 to 2.15) demonstrating that traffic levels reduce with distance from the development, as it disperses through the local road network, quickly dropping below 1000 AADT.

3.17 Given the distance, and relative location, of the section of the A290 that passes in close proximity to Blean Complex SAC from the application site, AADT levels are likely to be far lower than the 1000 threshold. Corresponding nitrogen deposition rates will also be lower than the

Recreational Impacts

3.18 Due to the location and intervening distance between Blean Complex and the application site, regular visitors to this SAC from the development are unlikely to take place. The SAC is managed by both the RSPB and Kent Wildlife Trust, who also undertake monitoring of the site. In the 2014 Canterbury HRA[27] Blean Complex was recorded to largely be in a favourable condition (100.5%), with only 0.2% noted as recovering.

3.19 It is unlikely that the relatively small increase in residential dwellings from the development, would lead to a significant increase in visitors to the Blean Complex. Additionally, the proposed GI, which includes a buffer of public greenspace, an attenuation feature, and a play area, will provide alternative outdoor recreational space in the immediate vicinity of the development to deflect residents from regularly travelling longer distances to local statutory sites.

Ecological Pathways

3.20 This section (*Table 6*) identifies the possible ecological pathways between the Site and the SAC that should be considered, applying assessment criteria based on best available scientific knowledge, and concludes whether there is a risk, or uncertainty, of a LSE.

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

[27] Habitat Regulations Assessment: Report to inform screening for appropriate assessment (2014) AMEC Environment & Infrastructure Ltd., Canterbury City Council

Table 6: Ecological Pathways and HRA Screening Conclusions – Blean Complex SAC

Ecological Pathway	Assessment Applied	Likely Significant Effect
Habitat Loss - Direct Loss	**Will there be any direct loss, land take, damage, or fragmentation of habitat within the SAC itself?** - **No** (application Site is situated >5.0km from SAC)	No LSE Screened out
Habitat Loss - Functionally Linked Land/Habitat	**Will there be any loss of functionally linked habitat associated with the SAC?** - **No:** As detailed in the most recent Ecological Appraisal (FPCR, 2023) the Site is dominated by arable monoculture and field margins of limited botanical diversity. - No such oak-hornbeam woodland habitat exists on-site, nor is there any supporting habitat of value to qualifying and/or notable species associated with the Blean Complex SAC designation. - The Site does not therefore constitute Functionally Linked Land in the context of the SAC, particularly given the intervening distance and limited connectivity. - **No likely significant effects** on the habitats or species associated with the statutory site, in relation to loss of FLL, are anticipated as a result of the development alone.	No LSE Screened out
Recreational Impact	**Will there be any impact on the SAC as a result of increased recreational pressure from the development?** - Research by Natural England for the Thames Basin Heaths SPA/SAC[28] found that the average length of a typical walking route, for a local visitor with a dog, was 2.63km (with 75% of dog walkers covering up to 3.23km). 'Local visitors', who were walking without a dog, on average, covered a similar distance of 2.51km, with 75% covering up to 3.80km. - On the basis of the above research, Blean Complex, nearly 6km northwest of the Ste, lies well outside the typical distance most people would access it on foot. New residents would thus be expected to travel via vehicle from the Site to access the SAC, requiring access to car parking, which is limited to the small RSPB car park at Blean Woods, a 20-minute drive from Littlebourne (the RSPB recommend parking larger vehicles in the neighbouring residential area of Ross Gardens). - Due to the intervening distance between Blean Complex and the Site, and limited parking availability, regular recreational visits to this SAC by residents from the new development are unlikely. - The SAC is managed by the RSPB and Kent Wildlife Trust, who also undertake regular monitoring. In the 2014 Canterbury HRA[29] monitoring work at Blean Complex considered the component SSSI units be in largely favourable condition (100.5%), with only 0.2% noted as 'recovering'.	No LSE Screened out

[28] Natural England (2014) Results of the 2012/13 visitor survey on the Thames Basin Heaths Special Protection Area (SPA). [Online].

[29] Habitat Regulations Assessment: Report to inform screening for appropriate assessment (2014) AMEC Environment & Infrastructure Ltd., Canterbury City Council

Ecological Pathway	Assessment Applied	Likely Significant Effect
	- It is unlikely that the modest increase in residential dwellings from a development of this size, given pre-existing controls and limitations set in place by the RSPB/KWT, would lead to a significant increase in visitors to the Blean Complex and detrimentally impact on its predominantly favourable status. - The assessment done on allocated sites in the Canterbury local plan established that there was unlikely to be significant effects on the SAC from increased recreational pressure from allocated sites in combination. - Additionally, the proposed GI, which includes a buffer of public greenspace, circular footpath/cycle routes, and two play areas, will provide alternative outdoor recreational space in the immediate vicinity of the development to deflect new residents from regularly travelling longer distances to local statutory sites.	
Air Quality and Pollution - Traffic (Alone and in-combination)	**Will there be a likely significant effect from nitrogen deposition on the SAC from increased traffic as a result of the proposals?** Assessment: Natural England 4 step Guidance[30] on traffic emissions. **Step 1:** Does the proposal give rise to emissions which are likely to reach a European site? Yes **Step 2:** Are the qualifying features of sites within 200m of a road sensitive to air pollution? Yes, the SAC boundaries pass within 200m of strategic roads, primarily the A290; however, these sections of road are all >5km from the application site and are unlikely to receive any significant increase in traffic flow. 1. 9.3km northwest Blean Common Road (A290) – 615m section.  2. 8.0km northwest Blean Common Road (A290) – 165m section	No LSE Screened out

[30] Natural England Internal Guidance – Approach to Advising Competent Authorities on Road Traffic Emissions and HRAsV1.4 Final - June 2018

Ecological Pathway	Assessment Applied	Likely Significant Effect
	 The SAC boundaries also pass within 200m of, or directly adjacent to, several smaller, access roads (including New Rd, Denstroude Ln., Fox's Cross Rd., and Pean Hill). Though these are unlikely to receive meaningful increases in traffic from the development, given their distance from the application site and separation from main travel routes. **Step 3:** Could the sensitive qualifying features of the site be exposed to emissions? Yes. **Step 4:** Application of screening thresholds. Use of the 1000 Annual Average Daily Traffic. An AADT figure of 1667 (taken at the Hill) was determined to result from the development proposals, by traffic consultants i-Transport. While this exceeds the 1000 AADT threshold, the Site is situated 5.9km from the Blean Complex SAC, separated by the city of Canterbury. The nearest main road to the SAC is the A290, which is located northeast of Canterbury. While it is likely that traffic generated by the development would travel towards Canterbury, the nearest large settlement, it is unlikely to follow this route. Given the intervening distance, traffic is likely to have dispersed sufficiently through the local road network, as demonstrated by assessment from i-Transport (discussed in section 2.11 to 2.15), to ensure that the number of additional vehicles using the A290, from the Site, is likely to be lower than the 1000 AADT threshold. Consequently, likely significant effects on Blean Complex SAC from air quality changes associated with increased traffic from the development at the Hill, are considered unlikely. **No likely significant effects** (from the application alone) on the SAC are anticipated. In combination effects on the SAC can also be scoped out on the basis that the HRA conducted by Amec Foster Wheeler, which assesses the most recent amendment to the Canterbury City Council Local Plan (2017)[31], established that there was unlikely to be significant effects on the SAC from increased nitrogen deposition resulting from allocated sites, taken cumulatively. The HRA does not anticipate any long-term, likely significant effects from traffic emissions on the statutory sites located within the Canterbury area (including Blean Complex).	

[31] Davis, P. (2017) Canterbury District Draft Local Plan – Habitats regulations assessment. Habitats regulations assessment of the main modifications to the submission draft local plan policies.

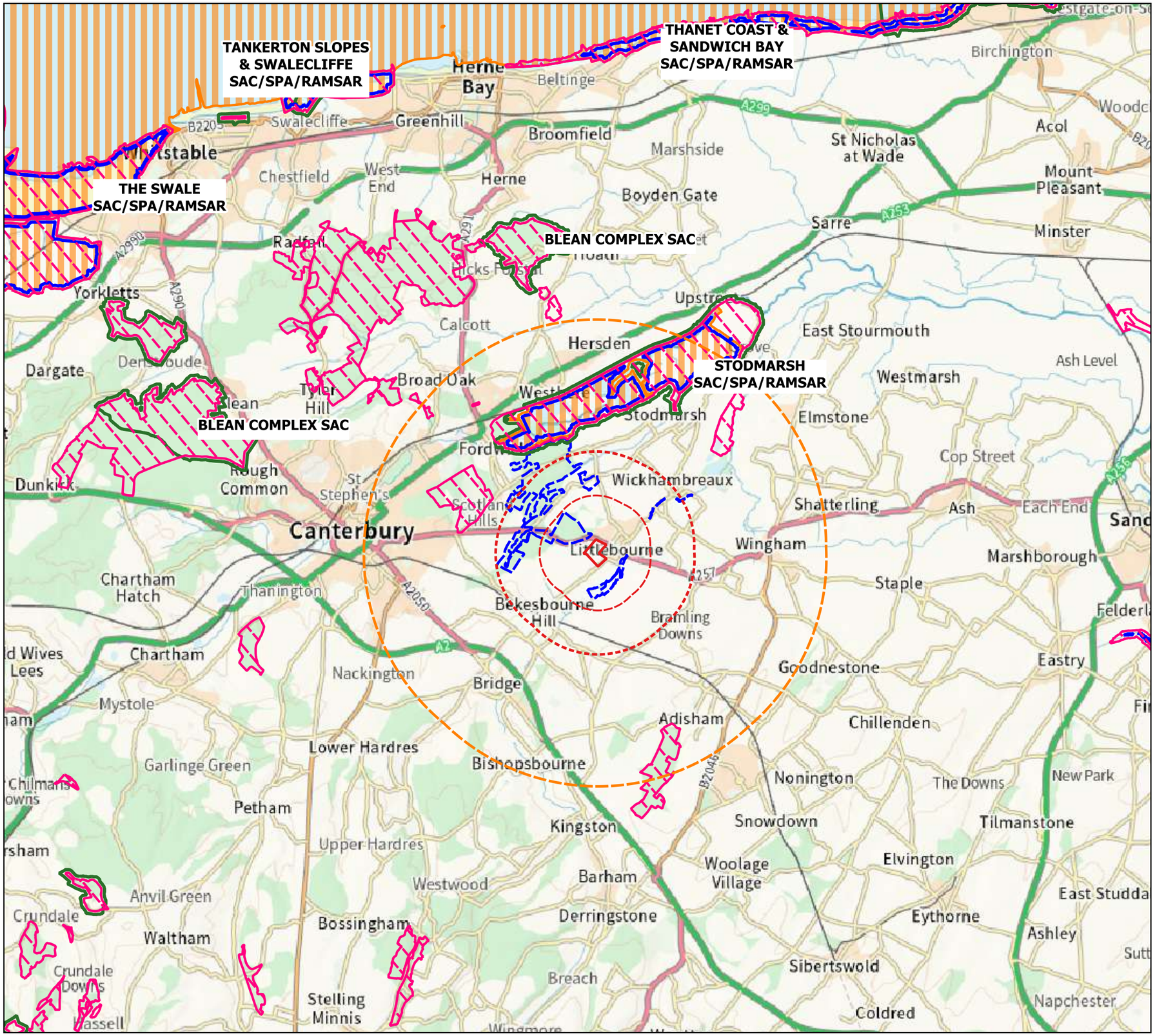
Ecological Pathway	Assessment Applied	Likely Significant Effect
Air Quality and Pollution - Dust from construction	**Will there be a likely significant effect on the SAC from temporary dust generated during construction near the SAC?** Assessment: The distance dust particles are likely to travel is between 350-400mwith the negative effects of dust on habitats and flora greater in magnitude the closer to the source of release (mostly within 100m from source). The SAC is located >5.0km from the Site, at its nearest point, and thus lies beyond this zone of dust dispersal.	No LSE Screened out

Conclusion

3.21 Given the scale of the development proposals and the intervening distance between the Site and the SAC (5.9km), impacts related to direct loss, damage, or fragmentation of habitat within the SAC; loss of functionally linked land for qualifying species; dust and particulate air pollution; and increases in recreational pressure from visitors to the SAC from the Site, have been scoped out of any further assessment.

3.22 Similarly, while the SAC does pass within 200m of major roads, including the A290 to the northeast of Canterbury, this does not form a direct route from the Site to Canterbury. Following assessment of traffic flow several key receptors around Canterbury, traffic demonstrably reduces with distance from the site, and as such the A290 near to Blean Complex is considered unlikely to receive any significant increase in traffic from the flow from the development.

3.23 Consequently, no likely significant effects on the Blean Complex SAC, from the proposed development at the Hill, Littlebourne are anticipated.



Key

- Site Boundary
- 5km buffer
- 2km buffer
- 1km buffer

Designated sites

- Site of Special Scientific Interest (SSSI)
- RAMSAR Sites
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Local Wildlife Site (LWS)

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client
Gladman Developments Ltd.

project
Land at the Hill,
Littlebourne

drawing title
SITE LOCATION & STATUTORY SITES PLAN

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drawn
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Figure 1

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