



Northfleet Harbourside EIA Scoping Opinion Request Report

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INTRODUCTION

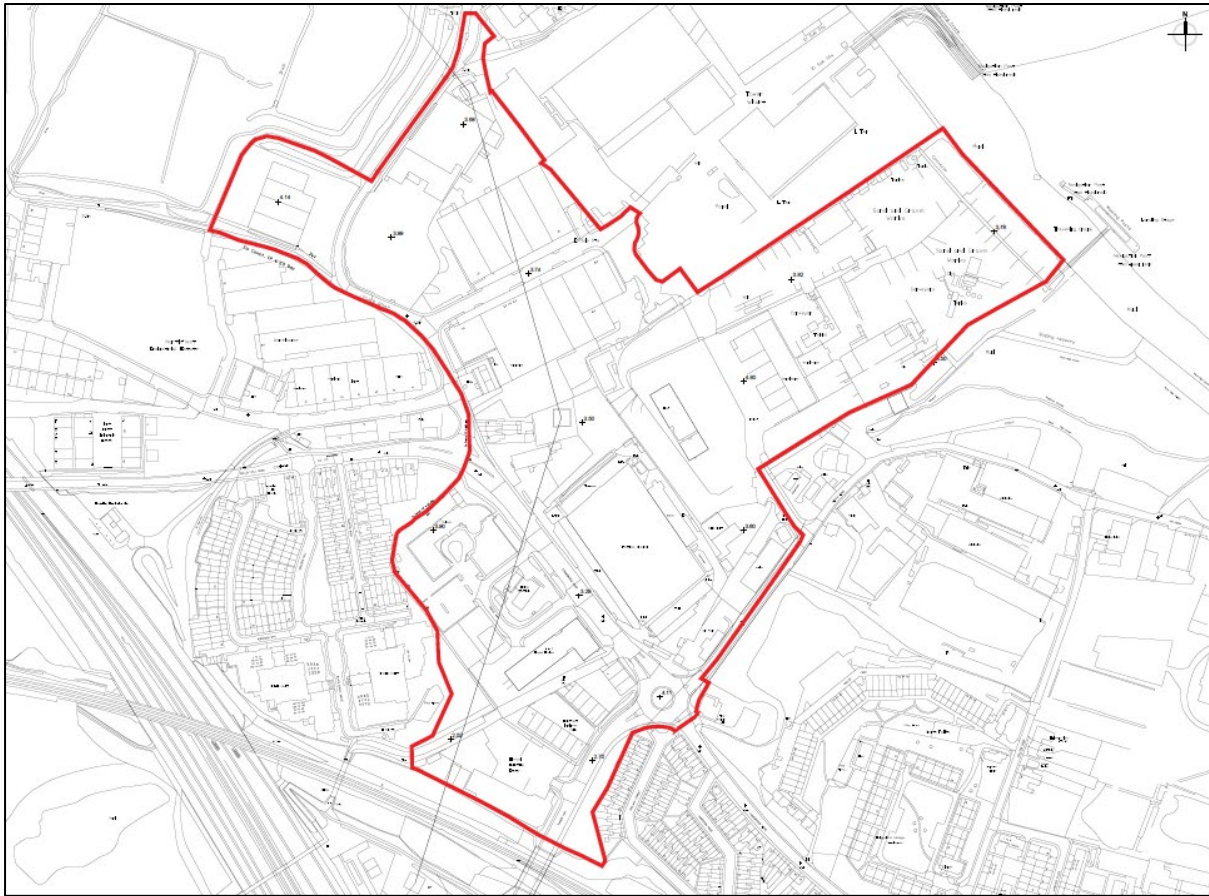
- 1 Northfleet Central 1 Limited (hereinafter referred to as the ‘Applicant’) is seeking outline planning permission for the redevelopment of an area of land (‘the site’), currently comprising predominantly industrial uses (including aggregate works) and Ebbsfleet United Football Club, bounded by the River Thames to the north-east; industrial land to the west, south and north (including the Seacon Terminals); Botany Marshes to the north-west; and residential land to the south-east and west. The site covers a total area of approximately 19 hectares (ha) and falls within the administrative boundary of Gravesham Borough Council (GBC).
- 2 The scheme proposals (hereafter referred to as ‘the Proposed Development’) comprise the demolition of all existing buildings and structures on-site and the phased construction of a mixed-use development comprising residential units, a hotel, a new football stadium with associated business and leisure facilities, a range of commercial, business and services uses including retail and food and beverage uses, community uses and a range of sui generis uses, with associated public realm and hard and soft landscaping, highways works, car parking, access and servicing arrangements, infrastructure and ancillary works. Further details of the Proposed Development are provided in the ‘*Planning Application and Proposed Development*’ section of this Scoping Report.
- 3 The Planning Application will be submitted in outline, reserving all matters for later approval, with the exception of means of access into and out of the site, which is to be fixed and fully detailed as part of the Proposed Development. All remaining matters relating to scale, layout, appearance and landscaping will be reserved and subject to reserved matters applications at a later date.
- 4 **Figure 1** provides an indicative site location plan and **Figure 2** presents an indicative planning application boundary.

Figure 1 Indicative Site Location Plan¹



¹ Note: Indicative site boundary shown

Figure 2 Indicative Red Line Planning Application Boundary



- 5 This Scoping Report has been prepared on the basis that an Environmental Impact Assessment (EIA) will be required for the Proposed Development. This is because the Proposed Development constitutes 'EIA development' given that it exceeds the thresholds set within Schedule 2, 10(b) (Infrastructure Projects – Urban Development Projects) of the Environmental Impact Assessment (EIA) Regulations², hereafter referred to at the 'EIA Regulations', and also taking into account the scale of the redevelopment and the nature of the site and surrounding area, there is the potential for significant environmental effects to arise, as discussed within **Annex A**.

Structure of this Scoping Report

- 6 This Scoping Report is structured as follows and provides:
- A description of the location of the site and the site itself;
 - A description of the site's and surrounding area's environmental context;
 - A description of the Proposed Development;
 - A summary of the cumulative effects and effect interactions;
 - A summary of the environmental topics that are considered to potentially result in significant effects on the environment and those that are considered unlikely to result in significant effects on the environment;
 - A summary of the proposed scope and assessment and methodology that will be adopted to predict the magnitude of potential impacts and the resultant scale, nature, geographic extent and duration

² The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended).

of potential effects, and the effect significance for the topics that are considered to potentially result in significant effects on the environment;

- Supporting evidence / justification for the topics that are considered unlikely to result in significant effects on the environment; and
- The proposed structure of the ES.

7 This Scoping Report is supported by the following Annexes:

- Annex A: Scoping and EIA Methodology;
- Annex B: Planning Policy Context;
- Annex C: Preliminary Ecological Appraisal; and
- Annex D: TVIA Supporting Maps.

SITE LOCATION AND DESCRIPTION

- 8 The site is irregular in shape and covers a total area of approximately 19ha, falling within the administrative boundary of GBC. While fully within the GBC boundary, the site immediately adjoins the Ebbsfleet Development Corporation administrative boundary to the east and west and the Dartford Borough Council administrative boundary to the west. The site is centred around National Grid Reference (NGR) TQ 61457 75002.
- 9 The site is currently occupied by Ebbsfleet Football Stadium, industrial land uses including active aggregates/concrete handling and processing sites operated by Aggregate Industries and Brett Aggregates, and smaller industrial units as well as a (Shell) petrol station. The A226 (Stonebridge Road) runs through the site. Open spaces on-site are largely covered by concrete surfacing and areas of hardstanding. There is little to no amenity landscaping on site.
- 10 Adjacent to the northern extent of the site is Seacon Terminals which provides handling and storage of construction project material and forest material (including timber, paper and woodpulp). Further to the north, but outside of the site, lies Swanscombe Peninsula, which is designated as a Site of Special Scientific Interest (SSSI). This site has been designated in recognition of its national importance for plants, geology, birds and invertebrates³.
- 11 The River Thames borders the site to the north-east. Along the eastern boundary of the site lies Robins Creek, which has the potential to support Schedule 1 bird species⁴, as noted in *Annex C: Preliminary Ecological Appraisal*. Approximately 80m to the east of the site is the Scheduled Monument 'Aspdin's Kiln' which is thought to be the oldest Portland Cement Kiln in the world and is a well-preserved example of a downdrought kiln used in the production of cement⁵.
- 12 Northfleet Train Station and Ebbsfleet International Train station, along with railway infrastructure, are located to the south-east of the site. As noted in **Table 2**, these stations provide Southeastern train services to London and the surrounding area, with Ebbsfleet International providing Eurostar services to Paris and Brussels in 2023.
- 13 Adjacent to the western of land boundary along Taunton Road, Robinson Way and Black Eagle Drive lies residential dwellings. Beyond these residential properties and the railway infrastructure, to the west of the site, lies green space and the village of Swanscombe. There are several local amenities within

³ <https://www.gov.uk/government/news/swanscombe-peninsula-confirmed-as-site-of-special-scientific-interest>

⁴ The Wildlife and Countryside Act 1981 has designated protected bird species under Schedule 1 of the Act. It is an offence to intentionally or recklessly disturb at, on or near an active nest for species listed under Schedule 1.

⁵ <https://historicengland.org.uk/listing/the-list/list-entry/1004227?section=official-list-entry>

Swanscombe including pharmacies, GP Surgeries, primary and secondary schools, cafes and restaurants, and grocery stores.

- 14 The site is located within the Northfleet Embankment and Swanscombe Peninsula East Opportunity Area⁶. There are clear opportunities in this location to make more efficient use of the land, facilitate river-related activity, accommodate new development and secure environmental improvements as part of the wider regeneration and growth strategy for the area. The site is located within sub areas 1.2 and 1.3. It is anticipated in the 2014 Local Plan Core Strategy that sub area 1.2 will remain in active employment uses and the retention and expansion of industrial and port related employment will be supported. Sub area 1.3 has the potential for residential-led regeneration.
- 15 The site is located within a Mineral Safeguarding Area, and is subject to the GBC urban boundary/village confines and the Sub - Alluvial River Terrace Deposits Mineral safeguard area designation, as identified on the Kent Minerals and Waste Local Plan⁷. Although the site is located within the Northfleet Embankment and Swanscombe Peninsula East Opportunity Area, it is not within a key site and does not meet the allocation test as per the Mineral Safeguarding policy. This matter will be appropriately addressed in consultation with Kent County Council (as the appropriate Mineral Planning Authority) in order to satisfy Policy DM7 of the Kent Minerals and Waste Local Plan.
- 16 **Figure 3** includes some images of the existing site.

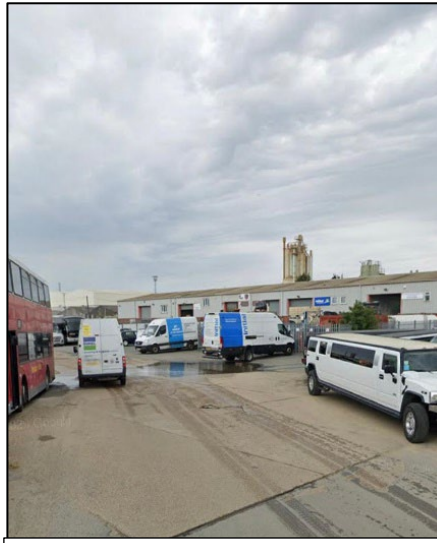
⁶ *Gravesham Local Plan Core Strategy (2014)*; page 56; <https://www.gravesham.gov.uk/planning/local-plan>

⁷ *Kent County Council, Adopted 2020, Kent Minerals and Waste Local Plan*

Figure 3 The Existing Site



Buildings located in the southern portion of the red line boundary



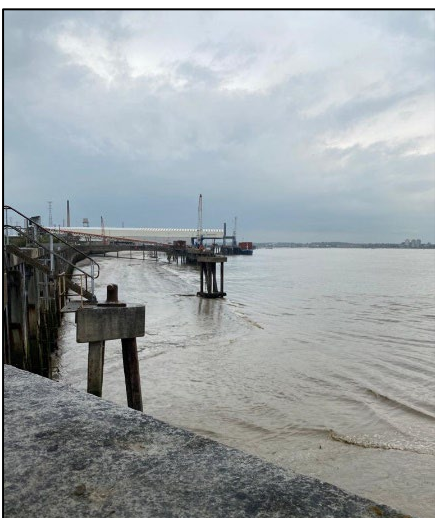
Buildings located in the north-eastern portion of the red line boundary



Buildings located in the north-western portion of the red line boundary



Buildings located in the north-western portion of the red line boundary



River Thames Flood Wall along the north-eastern land boundary



Shrubs present along the north-western land boundary by the private access road

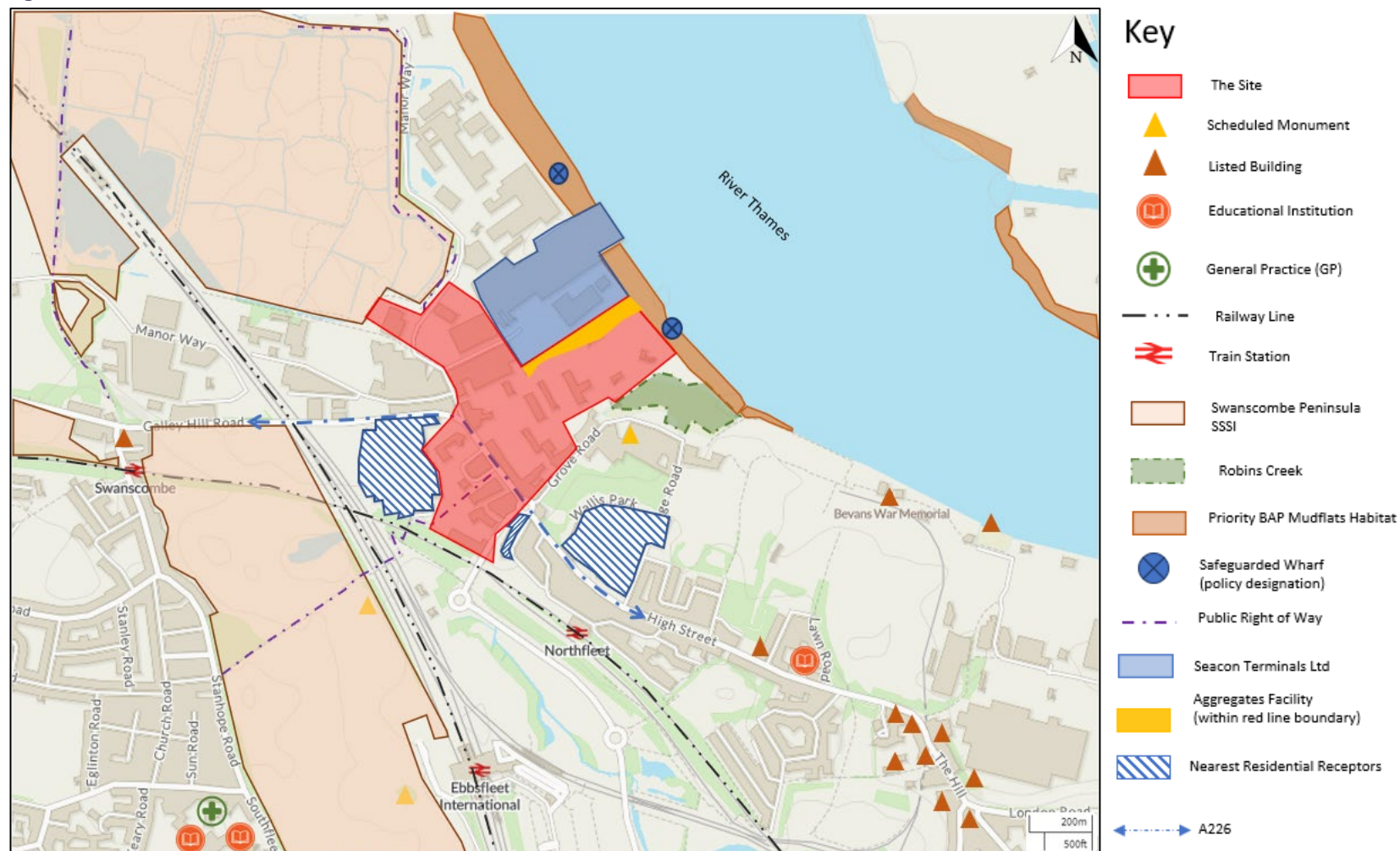
ENVIRONMENTAL CONTEXT

- 17 The site is bounded by the River Thames to the north-east; industrial land to the west, south and north (including the Seacon Terminals); Botany Marshes to the north-west; and residential land to the south-east and west. The site covers a total area of approximately 19ha and falls within the administrative boundary of GBC.
- 18 The site and surrounding environmental context is described in **Table 1** below and illustrated in **Figure 4**.

Table 1 Environmental Context

Environmental Topic	Key features, Designations and Considerations
Socio-Economics	- The site is currently occupied by Ebbsfleet Football Stadium, industrial land uses including aggregates handling sites, smaller industrial units as well as a (Shell) petrol station, providing employment. - The site is located within a Mineral Safeguarding Area, and is subject to the GBC urban boundary/village confines and the Sub - Alluvial River Terrace Deposits Mineral safeguard area designation, as identified on the Kent Minerals and Waste Local Plan. - There are several primary and secondary schools within the surrounding area. The closest primary schools are Lawn Community Primary School (approximately 800m southeast) and Manor Community Primary School (approximately 1km southwest). The nearest secondary school is Ebbsfleet Academy (approximately 800m southwest). - The closest medical infrastructure in the area include Swanscombe Health Centre (approximately 850m southwest). Grove House Orthodontics is located within the red line boundary. - Broomfield Park is located to the west of the site (approximately 830m).
Traffic and Transport	- The site is in close proximity to existing transport infrastructure. Northfleet Train Station is located approximately 300m to the south of the site, and provides Thameslink and Southeastern services to London Charing Cross, Luton, Rainham and Gravesend. Ebbsfleet International Train Station is located approximately 500m to the southwest of the site and provides Southeastern services to St Pancras International, Dover Priory, Margate and Faversham. From 2023, Ebbsfleet International will resume Eurostar services to Paris and Brussels. - The A226 (Stonebridge Road) runs through the site boundary and serves Seacon Terminals, located to the north of the land boundary. This road will be a key consideration within the traffic assessment. - There are two bus stops along the A226 (Stonebridge Road) providing services including routes 3 and 34 to Gravesend. - Footways are present along the A226 and B175, with further pedestrian routes available in the form of Public Right of Way's that provide access to the site from the southeast via a footway over the railway line. Further pedestrian routes also provide access to the Swanscombe Marshes to the north of the site. This route travels northwest from Gravesend passing through the site and into the marshes. - Vehicular access to the site can be achieved to the north of the site via Lower Road and to the south of the site via Grove Road. Pedestrian access can be gained from various points along the A226 (Stonebridge Road), Grove Road and Lower Road. - A local cycle route runs along the A226 to the south of the site, which continues southbound where it connects to National Cycle Network (NCN) Route 1, located 1.2km from the site.
Air Quality	- GBC has declared multiple Air Quality Management Areas (AQMAs), including the Northfleet Industrial Area AQMA for exceedances of the 24-hour particulate matter (PM₁₀) objective; which the site is located within. The neighbouring Dartford Borough Council (DBC) has also declared multiple AQMAs, including the Dartford AQMA No.2 along the A226 corridor for exceedances of the annual mean nitrogen dioxide (NO₂) objective; the site is also partially within this area. - The A226 (Stonebridge Road) runs through the site boundary and serves Seacon Terminals. This road will be a key consideration within the air quality assessment. - The nearest residential receptors are located to the east of the site boundary (approximately 30m) along the A226 and to the west of the site boundary (approximately 40m) along Taunton Road.
Noise and Vibration	The area surrounding the site is predominantly industrial and residential. The likely sources of noise and vibration for the site would be traffic from the A226 (Stonebridge Road) which runs

Environmental Topic	Key features, Designations and Considerations
	through the site boundary. Existing transport infrastructure is located to the south of the site and will be a source of noise and vibration. • The site is also located adjacent to Seacon Terminals which is responsible for the moving and handling of construction materials and woodpulp via ferry to the north of the site. • Potential sensitive receptors include residential properties which lie to the west (approximately 40m) along Taunton Road and east (approximately 30m) of the site boundary along the A226. • The railway infrastructure to the south-west of the site and the industrial uses to the north are considered to be a source of noise and vibration when operational.
Archaeology	• The site does not contain any designated heritage assets; however, there are several heritage assets surrounding the site, including Aspden's Kiln Scheduled Monument (approximately 140m east).
Built Heritage / Townscape	• The Hill Conservation Area is located approximately 1km south-east, Landsdowne Square Conservation Area 930m east Overcliffe Conservation Area 920m east. • There are six Listed Buildings (all Grade II) within 1km of the site. The closest Listed Building is Bevan's War Memorial in Northfleet Cement Works (Grade II listed) approximately 750m east of the site.
Water Resources	• The River Thames lies directly to the north-east of the site. • The site is predominantly located in Flood Zone 3 which means there is a high probability of flooding and the lands has been assessed as having a less than 1 in 100 (1%) annual probability of river or sea flooding. However, the site benefits from flood defences which protect the site against river flooding. • The majority of the site is located in a very low surface water flood zone risk, which means that each year this area has a chance of flooding of less than 0.1%. A small portion of the site (where the current Ebbsfleet Football Stadium is located) has a low risk of surface water flooding, meaning that each year this area has a chance of flooding of between 0.1% and 1%. Small pockets within the land boundary have a high risk of flooding from surface water. High Risk means that these particular areas have a greater than 3.3% chance of flooding each year.
Ground Conditions	• Available geological information indicates the bedrock of the site comprises Lewes Nodular Chalk Formation and Newhaven Chalk Formation (chalk). Superficial deposits of the site comprise of alluvium (clay, silt, sand and peat).
Ecology and Biodiversity	• The site does not contain any RAMSAR Sites, Special Protection Areas (SPA), Special Areas of Conservation (SAC), Site of Special Scientific Interest (SSSI), Important Bird Areas and Local Nature Reserves (LNR). However, the site is located in close proximity to Swanscombe Peninsula SSSI (located approximately 40m east of the northwestern portion of the site). • The SSSI has been designated in recognition of its national importance for plants, geology, birds and invertebrates. • Robins Creek borders the eastern boundary of the site and has the potential to support Schedule 1 birds.

Figure 4 Environmental Context⁸

⁸ Indicative site boundary shown. Also, note that Biodiversity Action Plan (BAP) Priority Habitats or Species may also be described as Species and Habitats of Principal Importance for Conservation in England, or simply 'priority habitats' and 'priority species' under the UK Post-2010 Biodiversity Framework

THE PLANNING APPLICATION AND PROPOSED DEVELOPMENT

- 19** The Applicant intends to submit an outline planning application in 2022 to deliver a comprehensive redevelopment of the site.
- 20** The anticipated description of development for the outline application is as follows:
- “Outline planning application with all matters reserved (apart from access into and out of the site) to allow the demolition of all existing buildings and structures and the phased construction of a mixed use development comprising residential units, a hotel, a new football stadium with associated business and leisure facilities, a range of commercial, business and services uses including retail and food and beverage uses, community uses and a range of sui generis uses, with associated public realm and hard and soft landscaping, highways works, car parking, access and servicing arrangements, infrastructure and ancillary works and associated works”.*
- 21** As above, the application will reserve all matters for later approval, with the exception of means access into and out of the site which is to be fixed and fully detailed as part of the submission. All remaining matters relating to ‘Scale’, ‘Layout’, ‘Appearance’, and ‘Landscaping’ will be reserved and as such will be subject to outline design parameters that will be sought for outline approval, with the detailed design of these ‘matters’ to come forward for approval by GBC later via the submission and determination of Reserved Matters Applications (RMAs). Sufficient information will be presented as part of the Planning Application and ES to enable a satisfactory assessment of potential impacts.
- 22** The Proposed Development will comprise the delivery of:
- Site clearance and remediation of circa 19ha acres of brownfield land;
 - Realignment of the A226 Galley Hill Road / Stonebridge Road;
 - The delivery of circa 3.8ha of open space;
 - The provision of a new multi-use stadium with up to 8,000-seater football stadium comprising up to 15,000m² Gross External Area (GEA);
 - Up to 3,500 new dwellings (Use Class C3);
 - Up to 55,00m² (GEA) Use Class E floorspace, including up to 32,000m² (GEA) retail and food and beverage floorspace and up to 18,000m² (GEA) office floorspace;
 - Up to 4,000m² (GEA) community uses;
 - A 200 pax room hotel, comprising up to 20,000m² (GEA) floorspace;
 - Buildings up to 20 storeys in height;
 - Car and cycle parking spaces; and
 - Incidental landscaping and associated works.
- 23** As a result of the Proposed Development, the existing industrial uses on-site, including the aggregate works, will be removed.
- 24** The outline planning application will be supported by a Parameters Report (included within the submitted Planning Statement) and Parameter Plans allowing for a degree of flexibility whilst ensuring that the EIA is appropriate and legally robust. Enough information will be presented to allow a sufficient assessment of potential impacts and likely significant effects of the completed and operational development. Any assumptions made will be clearly presented in the narrative.
- 25** It is anticipated that the submitted Parameter Plans will comprise:
- Parameter Plans 1 – Setting out details of land use, green infrastructure, pedestrian / cycle access points; and

- Parameter Plans 2 – Setting out building heights, layout and densities.

26 With regard to the reserved matters:

- For layout and scale, maximum parameters are to be set by the Parameter Plans, within which the reserved matters will be brought forwards; and
- For appearance and landscaping, the Design and Access Statement which will be submitted in support of the planning application will present the Proposed Development design to a level appropriate for the outline stage, although will include an illustrative design which will demonstrate one way in which the Proposed Development could be brought forward within the outline parameters sought for approval.

27 In addition to the Parameter Plans, the application will be supported by a number of Design Codes which are intended to provide controls within which future detailed designs might be brought forward, ensuring that high quality design and architecture is delivered at reserved matters stage whilst providing sufficient flexibility to allow architectural interpretation to take place.

EIA METHODOLOGY

Baseline Conditions

28 In accordance with the EIA Regulations and best practice guidance documents, the EIA will comprise an assessment for each of the relevant technical topics against an appropriate baseline condition of the site and surrounding area, using methods of prediction including established standards and industry guidelines and techniques confirmed as part of the EIA Scoping process. In all cases, the source data and guidance used to establish the baseline conditions and assessment methodology will be clearly set out within the ES.

The Existing Baseline Conditions

- 29** Baseline assessments will utilise any existing and available information, as well as new information either collected through baseline surveys undertaken during the course of the EIA process or additional information provided as part of the EIA Scoping Opinion and consultation process. This information will be used to present within the ES (within the individual technical chapters) an up-to-date description of the existing baseline conditions of the site and surrounding area.
- 30** For most technical disciplines, the baseline represents the existing environmental condition of the site and the surrounding area at the time of the assessment (i.e. in the assessment year of 2022). Certain topics, however, may require the use of annualised data (e.g. air quality or socio-economics (in relation to school enrolments), where a data set is from the preceding year) or model assumptions to define the baseline conditions. In all cases, the source of the baseline data and the justification for its use will be clearly described within the ES.

Evolution of the Baseline / Future Baseline

- 31** As per the requirements of the EIA Regulations, consideration as to how the existing baseline conditions surrounding the site may evolve in the future in the absence of the Proposed Development (i.e. the “Do Nothing Scenario” onsite) will be presented in the ES. The evolution of the baseline conditions surrounding the site will take account of the period of time up to the opening year of the Proposed Development, and where relevant take account of other surrounding development schemes which are consented / under construction. An outline of the approach adopted in the ES will be described within **ES Volume 1, Chapter 1: Introduction**. The likely evolution of the baseline conditions in the absence of the Proposed Development will be quantified where possible, and where it is not possible, a

qualitative review will be presented. As appropriate, the environmental effects of the Proposed Development will be assessed against the 'evolved' or 'future' baseline.

- 32 When assessing the effects of the operation of the Proposed Development, some technical disciplines will include a projected environmental condition in the future (i.e. the 'future baseline', at a projected year of opening of the Proposed Development). However, a different future year can sometimes be more appropriate for / specific to a technical assessment; for example, a first year of occupation on-site or the year of full occupancy and operation. Whether an assessment uses a future baseline or a different future year, will be detailed in the methodology of the relevant technical ES chapter.

Demolition and Construction

- 33 The ES (within a non-technical chapter titled 'Demolition and Construction') will provide an outline of the anticipated demolition and construction programme and related activities and aspects (i.e. indicative programme phasing, demolition and enabling works, substructure works, superstructure works etc., demolition waste volumes and construction material quantities, HGV movements and HGV routing). In addition, key environmental controls and management measures relevant to the Proposed Development (including relevant codes of construction practice) will be presented. It is currently envisaged that the Proposed Development will be delivered in phases which are yet to be fully defined, though any assumptions made regarding indicative phasing for the purposes of assessment will be clearly set out and assessed as appropriate within the ES.
- 34 This information will inform the demolition and construction impact assessments. Throughout the demolition and construction impact assessments, the assumption will be made that the standard environmental controls required under legislation and best practice guidance are met as a matter of course.
- 35 The assessment of the potential for likely significant effects arising during the demolition and construction works will be addressed within each of the individual technical assessment chapters of the ES and will be assessed against the existing Baseline Conditions (described earlier). The assessment will take into consideration any other surrounding development schemes which are likely to be under construction at the same time as the Proposed Development. The demolition and construction assessments presented within the technical chapters of the ES will identify the need for any additional or bespoke environmental management or mitigation measures in order to avoid, prevent, reduce or off-set any significant adverse effects identified. In addition, where appropriate the demolition and construction assessments will consider the phasing of works and the subsequent potential for impacts to occur upon introduced receptors to the site - e.g. demolition and construction effects associated with later phases of development upon early occupiers on-site.
- 36 The ES will present demolition and construction related effects both without mitigation measures included (unless embedded mitigation measures have been identified) and with mitigation measures applied. The latter effects constitute the 'residual effects' identified as part of the assessment.
- 37 Where required, a description of any proposed monitoring arrangements will also be presented and would define (where appropriate) the procedures regarding the monitoring of the relevant significant adverse effects, the types of parameters to be monitored and the monitoring duration.
- 38 All the measures proposed within the technical chapters will be compiled and presented in a mitigation and monitoring schedule (to be presented as a separate chapter within Volume 1 of the ES).
- 39 It is anticipated that any required demolition and construction related environmental management / mitigation and monitoring measures would be secured and controlled through an appropriate Construction Environmental Management Plan (CEMP) (or equivalent) and it is proposed that the requirement for these documents be secured by means of suitably worded planning conditions to be

attached to the permissions (if granted). Key mitigation and management controls that would later form part of a CEMP will be presented in the ES to help define the policies, procedures and management framework for the implementation of any identified specific environmental management and mitigation controls and monitoring.

Completed and Operational Development

- 40 The ES will present a description of the Proposed Development to provide suitable context to enable the assessment of potential and likely significant environmental effects. Enough information on the Proposed Development, in terms of the key aspects, will be presented to allow an understanding of the development being proposed, in order to enable the assessment of potential and likely significant environmental effects of the completed and operational development. Any assumptions made will be clearly presented in the narrative.
- 41 As appropriate to the topic in question, the technical chapters of the ES will address the phased delivery of the Proposed Development, whereby potential impacts upon operational elements of the early phase(s) of the Proposed Development may be established as part of the demolition and construction assessment, as noted above.
- 42 The ES will present complete and operational related effects both without mitigation measures included (unless embedded mitigation measures have been identified) and with mitigation measures applied. The latter effects constitute the 'residual effects' identified as part of the assessment.

Cumulative Effects and Effect Interactions

- 43 The EIA will identify the potential for (a) Cumulative Effects and (b) Effect Interactions which are described below.

Cumulative Effects

- 44 The EIA Regulations require that, in assessing the effects of a particular development proposal, consideration should also be given to the likely significant effects arising from the "*cumulation with other existing and/or approved projects*" (Schedule 4, 5(e)).
- 45 Cumulative effects can occur as interactions between the effects associated with several projects in an area (i.e., 'Cumulative Schemes') which may, on an individual basis be insignificant, but together (i.e. cumulatively), result in a significant effect. Cumulative effects arising from the Proposed Development in combination with identified Cumulative Schemes will be considered throughout the ES. The potential for cumulative effects arising during the demolition and construction works and once the Proposed Development is complete and operational will be considered. Each individual technical chapter of the ES will present an assessment of the cumulative effects of the Proposed Development coming forward alongside the Cumulative Schemes.

Cumulative Effects with Other Developments

- 46 As noted above, an assessment to identify cumulative effects arising from the Proposed Development in combination with identified Cumulative Schemes will be undertaken. Given the planning status of a local major infrastructure schemes (at the pre-planning stage, currently undergoing consultation as discussed further below), it is considered appropriate to undertake a two-stage cumulative assessment:
 - Tier One: assessing the cumulative effects of the Proposed Development plus 'Tier 1 Cumulative Schemes' (see below); and

- Tier Two: assessing the cumulative effects of the Proposed Development plus 'Tier 1 Cumulative Schemes' plus a 'Tier Two' scheme.

47 The cumulative assessment scenarios are discussed in additional detail below.

Tier One Cumulative Schemes

48 Generally, the 'Tier One' cumulative schemes that are included within the cumulative effects assessment fall under one (or more) of the following criteria:

- Schemes that will produce an uplift of more than 10,000m² (Gross External Area (GEA) of mixed-use floorspace), or over 150 residential units, whereby they:
 - have full planning permission, a resolution to grant permission; OR
 - have been submitted (but not yet permitted), where considered appropriate.

49 These parameters have been set to allow all the schemes coming forward within the area of the site to be subject to an initial screening exercise to determine the schemes that, based on the scale of redevelopment (amount and mix of uses), could potentially have a cumulative effect with the Proposed Development and should be considered further within the cumulative effects assessment of the EIA. By applying these parameters, the cumulative effects assessment of the EIA becomes more focused on relevant schemes (i.e. those with the potential to interact in a cumulative manner).

50 Generally, cumulative schemes considered within the cumulative effects assessment are located within 1km of the site. The list of cumulative schemes which have been considered for the Tier One Cumulative Assessment are presented in **Table 2** and **Figure 5**.

Tier Two Cumulative Schemes

51 Given the proximity of the proposed London Resort scheme⁹ located to the north-west of the site, a major infrastructure scheme which is currently withdrawn, and the potential for cumulative effects to occur, it is proposed that this scheme is considered as a Tier-Two cumulative scheme (as presented in **Table 2** and illustrated in **Figure 5**). It is understood that a revised planning application will be submitted for this scheme following the submission of the planning application for the Proposed Development.

52 Due to the changing nature of the proposals and lack of final scheme information for the proposed London Resort development, which is yet to be re-submitted for planning, a qualitative assessment will be undertaken with regards to this cumulative scheme, taking into consideration its status within the planning system, the information freely available on the scheme and any resulting potential material changes to the effects established as a result of the Proposed Development in combination with the Tier One cumulative schemes set out above.

53 The Lower Thames Crossing¹⁰ major infrastructure scheme is located approximately 8km to the south of the site and is currently at consultation stage. It is anticipated a planning application will be submitted towards the end of 2022. Given the distance from the Proposed Development, and the limited information available for this scheme, it is proposed that this major infrastructure scheme is scoped out of the Tier Two cumulative assessment.

54 Each technical chapter of the ES will consider the potential for cumulative effects associated with the schemes identified for inclusion within the cumulative effects assessment as relevant. Each technical ES chapter will be clear on the cumulative schemes that have been considered within the cumulative effects assessment.

⁹ <https://londonresort.info/>

¹⁰ National Highways: <https://nationalhighways.co.uk/our-roads/lower-thames-crossing/our-development-consent-order/>

- 55** Where a site is subject to more than one planning application, it is proposed that the most recent application will be assessed. As part of this EIA scoping process, GBC (and other consultees, as relevant) are invited to comment on the proposed cumulative schemes, so that the list of cumulative schemes can be agreed.

Table 2 Cumulative Schemes

Ref	Name / Address	Description	Planning Application Reference (Planning System Number)	Status
Tier-One Schemes				
1	Land Adj To Northfleet Harbour Grove Road Northfleet Gravesend Kent	Outline planning application (with all matters reserved) for residential-led mixed-use development comprising demolition of existing buildings and structures and provision of residential (Class C3), flexible commercial use (Class E), non-residential institutions (Class F.1), community use (Class F2, E), hard and soft landscaping, public open spaces, car parking, pedestrian and vehicular access and other associated infrastructure works.	EDC/21/0102	Pending Decision
2	Land North Of Hive Lane Northfleet Embankment West The Shore Northfleet Gravesend Kent DA11 9AN	Reserved matters application (access, layout, scale, appearance and landscaping) pursuant to condition 2 of outline planning permission reference no. EDC/16/0004 for land north of Hive Lane (Phase 1B) comprising the erection of 121no. dwellings together with associated infrastructure including details relating to finished floor and site levels, noise attenuation measures, ecological mitigation and enhancement strategy, and schedule of public open spaces (condition 9), renewable energy, water conservation and carbon reduction technologies (Condition 11), design and maintenance of the public realm and other areas with a public amenity function, provision of and timetable for installation of public art and heritage interpretation (condition 15).	EDC/21/0081	Approved 07/01/22
3	Albion Waterside Canal Basin, Gravesend, Kent, DA12 2RN	Hybrid planning application comprising: Part A - Full planning application for demolition of existing buildings and structures, construction of a mixed use development comprising C3 and C2 Residential Uses and commercial floorspace (Use Class E), a new river wall, works to Swing Bridge, highway junction improvements at Milton Road and Ordnance Road, associated new public open spaces and public realm improvements, car and cycle parking, landscaping, infrastructure and earthworks and ancillary works; and Part B - Outline planning application with all matters reserved (apart from access) for demolition of all existing buildings and structures and the construction of a mixed use development comprising C3 Uses and commercial floorspace (Use Class E) with associated vehicular access, car parking, landscaping, associated infrastructure and earthworks and ancillary works. (The proposed development would consist of up to 1,500 homes and up to 4,500m ² (GIA) of commercial floorspace). DEPARTURE: Application does not fully accord with the provisions of the Development Plan (Core Strategy Policy CS04)	20210270	Pending Decision (<i>Recommendation to Grant</i>)
4	Land At Former Northfleet Cement Works The Shore Northfleet Gravesend Kent DA11 9AN	Outline application for a mixed development and comprising: up to 532 Homes, related car parking and landscaping (C3); up to 46,000m ² Employment Floorspace, related car parking, servicing and landscaping (B1/B2/B8); Mixed Use Neighbourhood Centre comprising mix of: up to 850m ² retail/cafe/takeaway floor space (A1/A2/A3/A5); residential uses (C3); community centre (D1) and related car parking and landscaping; Riverside Food and Drink Uses comprising up to 500m ² of pub or food and drink uses (A3/A4); Public Open Space including riverside promenade, public park with equipped play areas and playing field with shared public/school use, multi-use games area and wildlife corridors; Fastrack Link to provide a segregated link across the site along with Fastrack stops; Street and Footpath Network to provide access to development and maintain and enhance existing public rights of way, including a bridge link between Hive Lane and Factory Road; Access Improvement to Grove Road/The Creek and The Shore/Crete Hall Road and associated highway improvements; Supporting Services and Infrastructure including new utilities, enhanced flood defences and providing for access to	EDC/16/0004	Approved June 2018

Ref	Name / Address	Description	Planning Application Reference (Planning System Number)	Status
		cliffs and tunnels; Ground re-grading to create efficient development and open space platforms and to raise land to address flood risk ; and Other Minor Works and development ancillary to the main proposals including the demolition of existing buildings and the retention of tunnels and facing walls adjacent to Lawn Road.		
5	Northfleet Embankment East Crete Hall Road Northfleet Gravesend Kent	Hybrid planning application (part full and part outline) comprising: (1) full planning application for the erection of 598 residential dwellings including affordable housing; retail floorspace (Use Classes A1, A2 and/or A3); amendments to existing highway accesses and realignment of Crete Hall Road; demolition of rear of WT Henley Building; provision of open spaces, equipped areas of play and landscaping; and associated internal accesses/roads, parking, infrastructure, attenuation features and earthworks; and (2) outline planning application (with all matters except access reserved) for a two form entry primary school and for the refurbishment, change of use (for Use Classes A1/A2/A3/B1(a)/C3/D1) and demolition of the boundary wall and rear portion of the WT Henley Building.	EDC/17/0038	Approved March 2019
6a	Land West Of Springhead Road (Phase 2B) Springhead Road Northfleet Gravesend Kent	Application for the approval of reserved matters pursuant to outline planning permission reference number 20150155 being the development of land at Ebbsfleet for mixed use up to 789,550m ² gross floorspace comprising employment, residential, hotel and leisure uses, supporting retail and community facilities and provision of car parking, open space, roads and infrastructure; relating to erection of 126 residential dwellings in Phase 2B of Springhead Quarter including access, appearance, landscaping, layout and scale, and amendment to Phase 1B in respect of rear gardens and rear boundary treatment.	EDC/17/0049	Approved August 2017
6b	Land West Of Springhead Road (Springhead Park Phase 3) Springhead Road Northfleet Gravesend Kent	Application for the approval of Reserved Matters pursuant to outline planning permission reference number 20150155 relating to the erection of 172 residential dwellings in Phase 3 of Springhead Quarter including access, appearance, landscaping, layout and scale, along with associated changes to existing ground levels, the provision of car parking, servicing, utilities, and open space (including allotments, play space and extension of Linear Park).	EDC/18/0009	Approved June 2018
7	Former Northfleet West Sub Station Southfleet Road Swanscombe Kent	Submission of Reserved Matters of siting, design, external appearance and landscaping pursuant to Conditions 2, 19, 20, 26, 36 and 43 of the outline planning permission EDC/16/0045 for Phase 2C development of 126 residential units (C3) and including details of streets,buildings, structures, materials, open space, landscaping, car parking, noise and drainage.	EDC/18/0170	Approved August 2021
		Submission of Reserved Matters of siting, design, external appearance and landscaping, pursuant to Conditions 2, 19, 26, 36 and 43 of outline planning permission EDC/16/0045 for Phase 4 development of 133 residential units including details of streets, buildings and structures, materials, open space, car parking, noise and drainage.	EDC/19/0125	Approved March 2020
Tier-Two Scheme				
A	Swanscombe Peninsula and land adjacent to Ebbsfleet Station (the 'London Resort' scheme)	Global entertainment resort with a Leisure Core (comprising a range of events spaces, themed rides and attractions, entertainment venues split over two gates), public areas outside the two gates (offering a range of retail, commercial, dining and entertainment facilities), hotels, 'Conference' Centre, Coliseum, back of house areas, related housing, access road from the A2(T) (including junction works), people mover, river transport infrastructure at both Swanscombe Peninsula and Port of Tilbury, car parking, energy centre, waste water treatment works, land remediation and terrain modelling, flood defence and drainage works, habitat creation and all associated works. Referred to as: The London Resort scheme.	BC080001	Withdrawn 28/03/2022



- 56** It is acknowledged that there may be development schemes that are at the pre-application stage or have been recently submitted for planning but not yet determined by GBC, that may be significant enough to warrant a cumulative effects assessment. The requirement to include any specific schemes should be identified by GBC through the EIA Scoping Opinion. Should such development schemes be identified by GBC, requiring a cumulative effects assessment, it should be acknowledged by GBC that the ES will address these as far as is reasonably practicable, and that the assessments will be based on the information available on these schemes that is within the public domain.

Effect Interactions

- 57** Effect interactions occur as interactions between effects associated with just one project, i.e. the combination of individual effects arising as a result of the Proposed Development, for example effects in relation to noise, airborne dust or traffic on a single receptor.
- 58** Effect Interactions from the Proposed Development itself on particular receptors at the site and within the surrounds will be considered during the demolition and construction works and also once the Proposed Development is completed and operational. Dependent on the relevant sensitive receptors, the assessment will focus either on key individual receptors or on groups considered to be most sensitive to potential effect interactions. The potential interaction of residual effects that are of minor, moderate or major scale, will be considered within this assessment. Residual effects which are negligible, will be excluded from this assessment as by virtue of their definition, they are considered to be imperceptible.
- 59** There is no established methodology for assessing the impact of cumulative effects on a particular receptor. The interaction of a combination of individual effects would be determined to be either 'not significant' or 'significant', a scale of the combined effects (minor, moderate or major) would not be applied. If one of the individual effects is significant the combination of effects would be regarded as 'significant'. If none of the individual effects are significant the interaction of effects would be regarded as 'not significant'.
- 60** Consideration of effect interactions will be presented within the ES in a separate chapter (i.e. Effect Interactions (ES Volume 1)).

ENVIRONMENTAL TOPICS

- 61 The following table sets out the proposed scope of the EIA. Further detail on each topic is provided below.

Table 3 Environmental Topics: EIA Scope

Topic	'Scoped Into' the EIA ✓ 'Scoped Out' of the EIA ✗		Additional Assessments to Accompany the Planning Application
	Demolition and Construction	Completed Operational Development	
Socio Economics	✓	✓	Retail Impact Assessment
Health ¹²	✗	✗	Health Impact Assessment
Traffic and Transport	✓	✓	Transport Assessment
Air Quality	✓	✓	
Climate Change and Greenhouse Gas Assessment	✓	✓	
Noise and Vibration	✓	✓	
Geo-environmental (Ground Conditions, Land Contamination, Soils)	✓	✓	Phase 1 Desk Study
Daylight, Sunlight and Overshadowing	✓	✓	
Solar Glare	✗	✓	
Light Pollution	✗	✓	
Wind Microclimate	✓	✓	
Townscape, Visual and Built Heritage	✓	✓	
Archaeology (Buried Heritage)	✓	✗	Archaeological Desk Based Assessment
Ecology and Biodiversity	✓	✓	Bird Survey Report
Project Vulnerability to Major Accidents and Disasters	✗	✗	
Waste and Materials	✗	✗	Outline Waste Management Strategy
Water Resources, Flood Risk and Drainage	✗	✗	Flood Risk Assessment and Drainage Strategy

¹² Whilst this topic is scoped into the EIA, it will not form a technical ES Chapter, as discussed within the Socio-Economics section below.

SCOPED IN TOPICS

Socio-Economics

- 62 It is considered that there is the potential for likely significant effects relating to Socio-Economics and so this topic shall be scoped into the EIA. The Socio-Economics assessment will be undertaken by Montagu Evans.
- 63 The ES will:
1. Define the socio-economic baseline conditions;
 2. Identify relevant socio-economic receptors;
 3. Assess:
 - a. the potential for socio-economic effects throughout the demolition and construction works and as a result of the completed development;
 - b. the likely significant socio-economic effects;
 - c. any required mitigation to address any likely significant adverse socio-economic effects; and
 - d. the potential for cumulative socio-economic effects.

Baseline Conditions

- 64 A detailed assessment of the baseline conditions will be considered as part of the socio-economic assessment. This will include a review of the existing uses on-site, and local demographic, social and economic characteristics of the area surrounding the site, focusing on data surrounding local resident population, social infrastructure, employment and economic statistics.
- 65 Baseline conditions will be assessed at several geographic levels dependent upon the potential effect being considered (based upon relevant guidance and best practise), including the site level (where data is available at this spatial level), the local area (Northfleet North Ward), the district (Gravesham), the County (Kent) and regional area (South East).
- 66 The baseline review will consider available information relating to the site from the current owners and from publicly available data base records for the study area. This includes the following sources:
- Office for National Statistics (ONS) and NOMIS;
 - Indices of Multiple Deprivation (2019);
 - Gravesham District Council (GDC), Kent County Council (KCC) and UK Government data.
- 67 The most recent published sources will be used in doing so – data sources published in 2022 will be used where possible, but where this is not available the next best alternative (i.e. the most up to date) will be used.
- 68 A qualitative review of the evolved baseline (i.e. how the baseline may evolve in the absence of the Proposed Development) will be also undertaken based on a review of current site conditions and cumulative schemes in the area.

Receptors

- 69 Receptors are likely to include, but may not be limited to:
- Existing businesses on-site;
 - The local economy and labour market i.e. local businesses and economically active residents;
 - Existing social infrastructure (such as schools, open spaces and primary healthcare);
 - The stock of housing available locally and housing need; and

- Ebbsfleet United Football Club (EUFC) and its supporters.

70 It is not possible to ascribe specific 'values' or a quantifiable scale of 'sensitivity' to all socio-economic receptors due to their diversity in nature and scale. The assessment will therefore focus on the qualitative "sensitivity" of each receptor, and on their ability to respond to change created by the Proposed Development.

Assessment of Effects

71 Based on the sensitive receptors and impacts outlined above, the Proposed Development is expected to generate a range of socio-economic effects once operational. The assessment will consider the potential for the following likely significant effects:

- Loss of existing uses on-site (including loss of on-site employment);
- Construction employment (direct, indirect and informal);
- Creation of permanent employment opportunities once operational (direct, indirect and informal)
- Provision of new homes, plus the impact of this on local housing need;
- Provision of new retail and leisure floorspace;
- Increase in demand for local social infrastructure such as schools, open spaces and primary healthcare facilities; and
- Impacts on crime and anti-social behaviour on the site and in the local area.

72 The following effects presented in **Table 4** are considered unlikely to be significant.

Table 4 **Socio-Economic Topics to be Scoped Out of EIA**

Effect	Receptor	Justification for Insignificant Effects and for Scoping Out of the EIA
Construction		
Construction Worker Expenditure	Local businesses	It is acknowledged that there is the potential for the construction workers to spend money in the local area for the duration of the demolition and construction works, resulting in a beneficial effect upon local businesses. However, in the context of the area and the local provision of retail and leisure facilities, it is unlikely that this spending would have a significant effect upon local businesses. An element of construction worker expenditure will be captured through analysis of induced employment effects.
Construction Worker Health	GP and A&E provision	The construction workers will be temporary and are not expected to have a significant effect on health provision of either GPs or the local A&E service. Prior to the start of work on site, the Applicant will be required to discharge planning conditions relating to construction and logistics management. The information set out for approval in respect of these aspects will demonstrate how the contractors will follow best practice, thus minimising the risk of accidents, and in turn any such minor impacts upon local healthcare facilities.
Stadium Availability for EUFC	EUFC and Supporters	It is expected that EUFC will temporarily ground-share with another nearby club whilst demolition and construction works are underway, meaning that the club will continue to function during construction. Proximity to Northfleet will be a key consideration in the selection of a suitable alternative ground, and the club will aim to minimise the distance fans need to travel to attend 'home' fixtures during this time (indeed, the Club will be financially incentivised to do so in order to maintain gate receipts as far as possible). As such, no significant effects are anticipated. In the unlikely event that the Club fails to secure an alternative ground within Kent, South Essex or South East London, this could represent a significant effect, and would need to be assessed.
Completed Development		
Operational Worker Expenditure	Local businesses	It is expected that the majority of worker expenditure would be undertaken nearer to the place of home rather than work. Given the location of the site, it is not considered likely that workers would travel off-site to get lunch, for example, with the Proposed Development likely to include facilities on-site for this purpose. As such, any expenditure within these uses would be captured by the Proposed Development, with the employment opportunities likely to come from these uses captured.
Operational Worker Health	GP and A&E Provision	Similar to the above, it is expected that workers will make use of health service provision in the areas closest to their place of residence, rather than their place of work. Operational jobs are expected to be in lower risk sectors from a health and safety perspective than current jobs on site (i.e. loss of industrial / manufacturing floorspace and gain of retail / commercial / leisure floorspace), with a consequently lower risk of serious injury at work requiring emergency treatment.

Methodology

- 73** The socio-economic assessment will, wherever possible, be appraised against relevant national standards such as those provided by Homes England (which replaced the Homes and Community Agency (HCA) in January 2018). Where no standards exist, professional experience and judgement will be applied and justified.
- The assessment of socio-economic impacts will utilise a number of methodologies, data sources and assumptions. These are set out below:
 - The number of job years generated during the construction phase would be derived from the estimated construction costs (supplied confidentially to Montagu Evans by the Applicant) and ONS data on the relationship between construction costs and employment;
 - The number of jobs that could be generated by the commercial/business floorspace will be calculated by applying the standard job density ratios based on the HCA Employment Density Guide 3rd Edition (2015)¹³. The HCA Additionality Guide (2014) will also be used to establish net employment from the Proposed Development accounting for wider additionality factors such as leakage, displacement and economic multipliers. This also allows for the estimation of indirect and informal employment facilitated through the Proposed Development;
 - The size and composition of the future resident population will be calculated using data on local household composition from the 2011 Census¹⁴. Pupil Yields from proposed new housing will follow KCC guidance;
 - The impact on housing delivery will be measured against the adopted housing target for the Borough, taking into account the results of the 2021 Housing Delivery Test and the evidence base for the emerging new local plan;
 - The sufficiency of proposed Play Space and access to green space, sport and recreation will be measured against Policy CS13 of the adopted Gravesham Core Strategy and the council's supporting evidence base (including the Gravesham BC Open Space Standards paper). Benchmarks applicable to this site will be confirmed with GBC prior to commencement of the assessment;
 - Retail expenditure per household will be estimated using proprietary data made available to Montagu Evans by retail data firm Aspinall & Aspinall, and applied to the (size-adjusted) future household count to provide an estimate of future retail spending by new residents;
 - Capacity of existing local schools will be based on official data published by DfE, with future place planning data from KCC taken into account. Existing GP Capacity will be derived from NHS Digital data, with the Royal College of GPs benchmark of 1,800 registered patients per FTE GP used to determine whether individual practices are over or under subscribed.
- 74** Following this assessment, any required mitigation or monitoring shall be identified.
- 75** The assessment shall conclude with a summary of the likely significant socio-economic effects.
- 76** A separate Retail Impact Assessment is being prepared outside the scope of the ES. However, the key findings of this assessment, such as anticipated trade draw and potential impact on other local retail centres, will be factored into this assessment. A summary will be appended to the ES.

¹³ HCA, 2015, *Employment Densities Guide 3rd Edition 2015*.

¹⁴ initial data from the 2021 Census is due for publication in Summer 2022, and will be used instead of 2011 if data is made available in time

Health

- 77 While health is scoped into the EIA, a technical ES chapter will not be prepared. A separate Health Impact Assessment will be prepared, following the NHS London Healthy Urban Development Unit (HUDU) rapid assessment toolkit. The HIA will be appended to the ES.

Cumulative Effects

- 78 A list of cumulative schemes has been provided within the *Cumulative Effects with Other Developments* section of this report. It is expected that all of these schemes will be of relevance to the assessment of Socio-Economic effects as all include either residential development, employment/leisure development, or both, and are therefore likely to produce Socio-Economic effects of a similar nature to those listed above (refer to *Assessment of Effects* section). There is therefore potential for the cumulative impact of these effects to affect the assessment of significance. Likely cumulative effects include:

- Cumulative population growth and the impact on access to community / social infrastructure;
- Cumulative loss of existing employment uses;
- Cumulative gain of new housing;
- Cumulative gain of new employment floorspace and jobs; and
- Cumulative gain of new retail and leisure facilities and impact on attractiveness to visitors.

Traffic and Transport

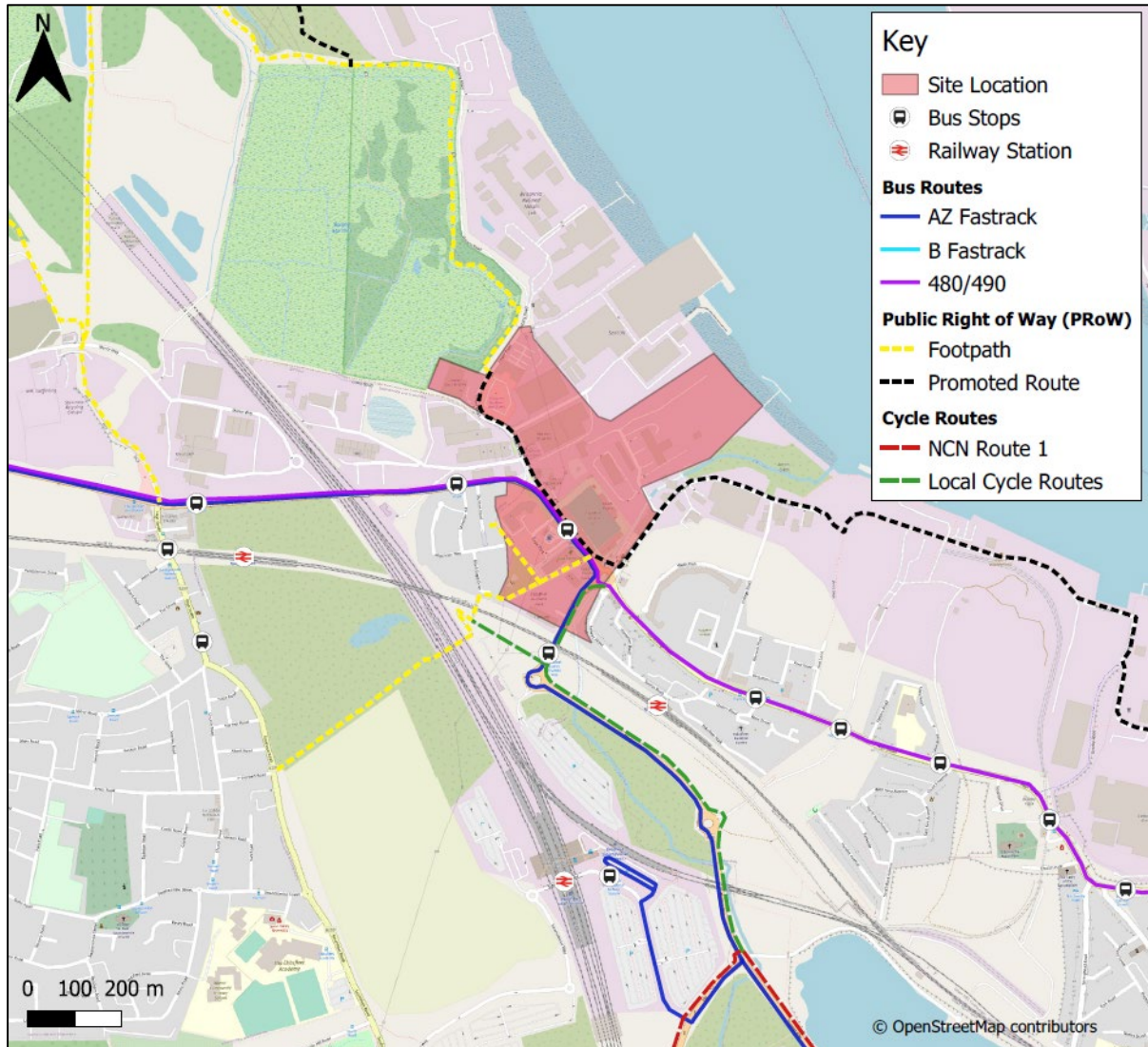
- 79 It is anticipated that there is potential for significant effects arising from the Proposed Development with respect to Transport and Access, and therefore this topic shall be scoped into the EIA. The ES chapter will be supported by a Transport Assessment, prepared by Vectos. Given the scale of the Proposed Development it will be key to first establish a baseline for assessment against which any environmental impacts can be assessed. In the first instance a review of contemporary traffic data will be completed to identify any areas where additional data is required. Should this be the case then traffic surveys will be undertaken at suitable locations on the surrounding highway network as agreed with both Kent County Council (KCC) and National Highways (NH) as required.
- 80 Consideration will also be given to the respective Local Plan documents and emerging developments within the vicinity of the site to allow an accurate assessment of all environmental impacts, both discrete and cumulative to be assessed.
- 81 The ES will:
1. Define the traffic and transport baseline conditions;
 2. Identify relevant traffic and transport receptors;
 3. Assess:
 - a. the potential for traffic and transport effects throughout the demolition and construction works and as a result of the completed development;
 - b. the likely significant traffic and transport effects;
 - c. any required mitigation to address any likely significant adverse traffic and transport effects; and
 - d. the potential for cumulative traffic and transport effects.

Baseline Conditions

- 82 The site is located within Northfleet, 7.7km to the east of Dartford and 6.4km from Junction 1A of the M25. The site covers an area comprising Ebbsfleet United football ground, along with areas of industrial and warehousing use. The A226 (Stonebridge Road) passes through the centre of the site.

- 83 The site is well connected to the local transport network and is in close proximity to sustainable transport infrastructure including bus stops and railway stations. It is also connected to the surrounding areas of Northfleet and Ebbsfleet through active travel modes via both local and national cycle routes along with a variety of footways and public rights of way.
- 84 The location of the site in relation to key local transport infrastructure has been illustrated within **Figure 6**.

Figure 6 Site Location¹⁵



Local Road Network

- 85 The A226 runs through the site comprising a two-way single carriageway road that is subject to a 30mph speed limit. There is a ghost island right turn bay adjacent to the football ground, along with bus stops, pedestrian footways and street lighting.
- 86 To the west of the site the A226 runs east to west for approximately 3km where it forms the A206 / A226 / B255 roundabout junction. The A226 continues westbound from the roundabout towards Dartford.
- 87 The A206 is a dual carriageway that is subject to a 40mph speed limit. The A206 travels north from the A226 roundabout junction for approximately 350m before it reaches the A206 / Station Road / Station

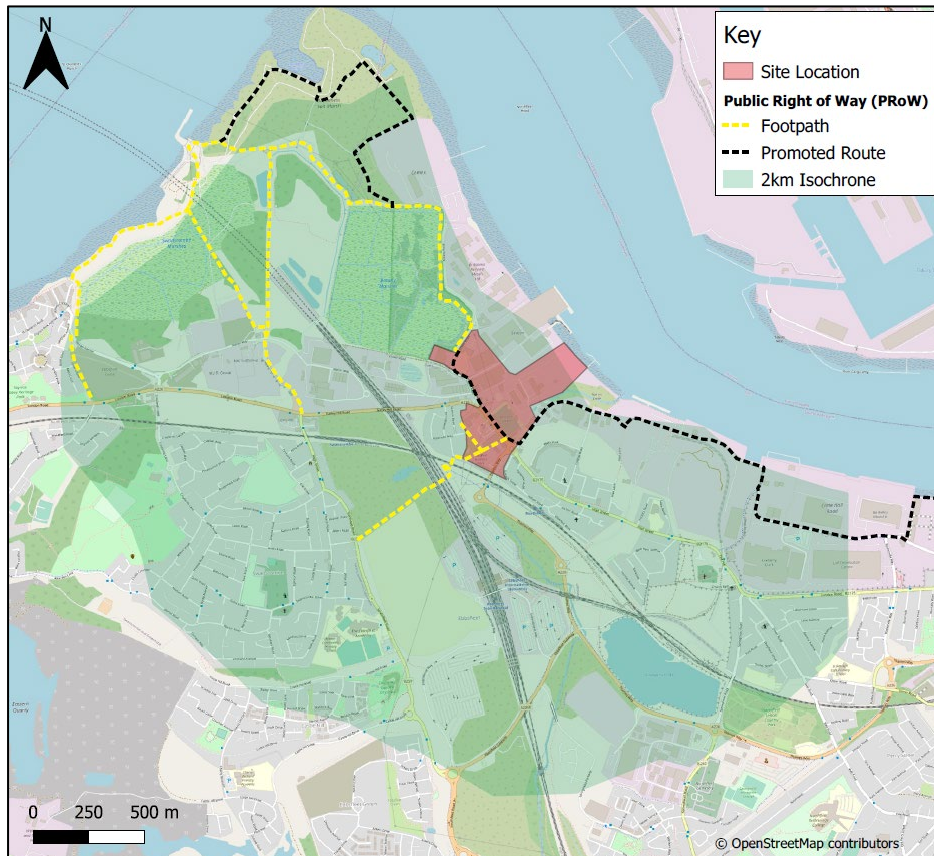
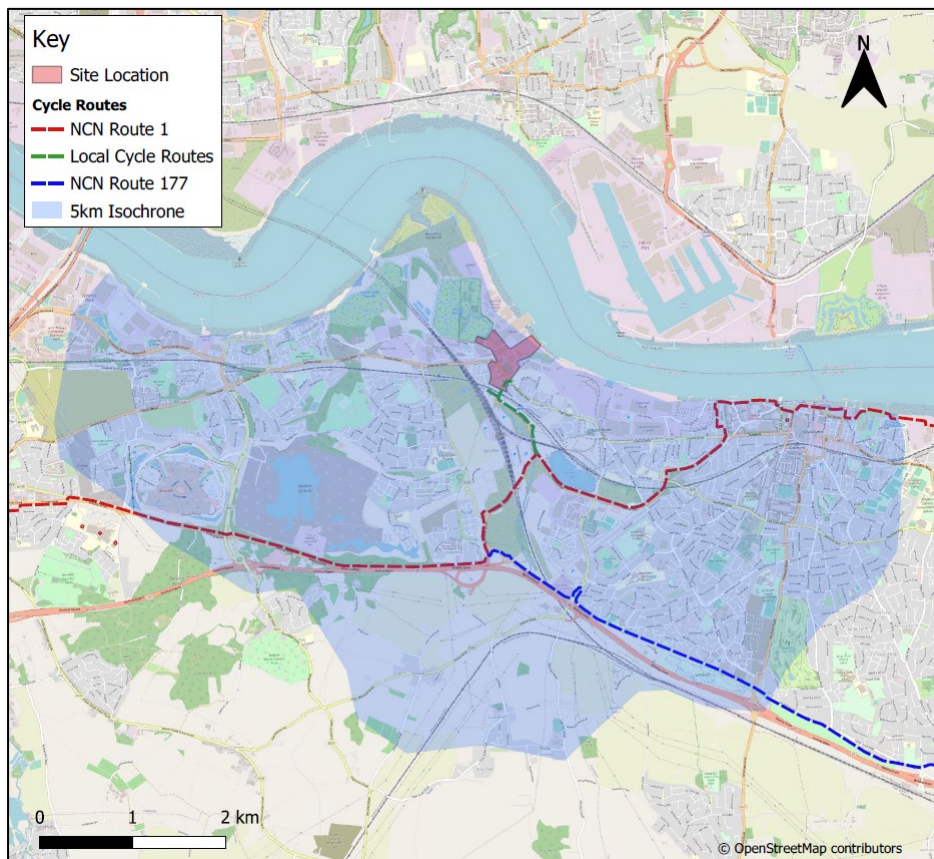
¹⁵ Indicative site boundary shown in figures.

Approach roundabout. The A206 continues westbound for approximately 3km where it forms a section of Junction 1A of the M25.

- 88 The M25 is part of the strategic road network and provides an orbital route around London. The M25 also provides access to a number of key national routes including the M1 and M40.
- 89 To the south of the site, the A226 provides a connection to the A2206 via Thames Way. The A2206 comprises a single carriageway road and provides a strategic link to the A2 corridor further south. The A2 provides a strategic link through Kent to both the east and west extending east to Dover and west beyond Kent into London.

Walking and Cycling Access and Connections

- 90 The site is well connected in terms of pedestrian and cycling accessibility with a number of footway and cycleway connections in the local area.
- 91 Footways are present along both sides of the A226 with street lighting provided along its length. The footways are well surfaced, with dropped kerbs and tactile paving. These footways continue along the B175 (Stonebridge Road) and the A226 to the north with footway connections also provided from the site to Ebbsfleet International station.
- 92 Further pedestrian routes are also available in the form of Public Right of Way's (PRoW). There is a PRoW that provides access to the site from the southeast via a footway over the railway line towards Swanscombe.
- 93 Further pedestrian routes also provide access to the Swanscombe Marshes to the north of the site. This route travels northwest from Gravesend passing through the site and into the marshes. These routes are illustrated in **Figure 7**.
- 94 With regard to cycling, there is a local cycle route along the A226 to the south of the site. This route continues southbound where it forms the A226 / A2260 junction and connects to National Cycle Network (NCN) Route 1, approximately 1.2km from the site.
- 95 NCN Route 1 provides a long-distance cycle route that runs from Kent, connecting central London and Essex. In proximity to the site, the route provides access to Gravesend to the east and Dartford to the west. **Figure 8** highlights these key cycle routes.

Figure 7 Walking Routes Within 2km**Figure 8** Cycle Routes Within 5km

Public Transport

- 96** The site is well located on the route of a number of public transport corridors and has access to regular bus and rail services within a few minutes' walk of any area within the proposed red line boundary.
- 97** There are many bus stops that are accessible within the site, including stops along the A226.
- 98** The closest railway station to the site is Northfleet Rail Station which is located approximately 450m to the southeast of the site. This station is also served by the 480 and 490 bus services which are accessible from the Hive bus stops situated approximately 240m from Northfleet Station on the B2175 High Street.
- 99** Ebbsfleet International Station is also located in close proximity to the site, approximately 800m to the south of Ebbsfleet United Football Club. Ebbsfleet International Station has provision for approximately 3,000 car parking spaces and approximately 100 cycle parking spaces.

Traffic Surveys

- 100** Through initial consultation with KCC, it is understood that there is little existing traffic data for the area surrounding the site. It is therefore proposed that traffic surveys are commissioned to provide a baseline against which the forecast impacts of the Proposed Development can be assessed, the junctions proposed to be considered within the assessment have been set out below.
- 101** Given the recent impacts of the Covid-19 pandemic, consideration will need to be given to how traffic patterns have changes over the past two years and to what extent this baseline is considered representative. This process will involve a review of traffic trends over the past two years based upon empirical data gathered by the Department for Transport (DfT).
- 102** This collection of baseline traffic data will be subject to further discussion with the highway authorities responsible for managing the local and strategic networks in the vicinity of the site (KCC and NH).

Approach

- 103** The scope of the Transport and Access assessment will cover all phases of development including the demolition (short-term), enabling works and construction activity (medium-term) and completed development (long-term) effects and cumulative effects.
- 104** For each element the assessment will cover the peak of each phase of works, for example, peak demolition or construction phases with regard to vehicle and people movements, a hybrid where construction and occupation occurs in tandem, and a fully occupied and operational development for the completed effects and cumulative effects.
- 105** The identification of sensitive receptors has been based on the Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Road Traffic¹⁶. The following topics will be assessed for the demolition, construction and completed phases of development:
 - Severance;
 - Driver Delay;
 - Pedestrian Delay;
 - Pedestrian Amenity;
 - Hazardous Loads;
 - Dust and Dirt;

¹⁶ *Guidelines for the Environmental Assessment of Road Traffic (Institute of Environmental Assessment, 1993)*

- Fear and Intimidation; and,
- Accidents and safety.

106 Table 5 summarises the anticipated transport and access effects associated with each phase of the Proposed Development identified for inclusion in the assessment. Currently, the phases of the Proposed Development are unknown and so a detailed assessment cannot be provided. The full details of phasing will be assessed within the Traffic and Transport ES chapter. Due to the potential effects resulting from each phase of development it is not proposed that any Traffic and Transport effects are scoped out of the assessment.

Table 5 Transport and Access Effects

Receptors	Potential Effects	Scoped In
Existing residents	Vibration impacts on existing properties due to demolition and construction HGVs; severance effects on existing communities; risks from hazardous loads; dust and dirt impacts.	✓
Existing residents	Effects on existing communities from increases in traffic volumes.	✓
Existing business employees	Vibration impacts on existing properties due to demolition and construction HGVs; severance effects on existing communities; risks from hazardous loads; dust and dirt impacts.	✓
Highway Network	Net change in traffic patterns during all phases of development; daily link flows; traffic speed; effect on personal injury accidents, driver delay.	✓
Pedestrians and Cyclists	Net change in traffic during all phases of development and resulting effects on severance, delay, fear and intimidation and amenity for pedestrians and cyclists. Effect on personal injury accidents.	✓

107 The scope of the highway capacity assessments for the Proposed Development will be agreed with KCC and a more defined study area and scope will be presented within the Transport Assessment. However, it is likely that the study area for the proposals will include an assessment of the following junctions and links (**Figure 9**):

- A226 Stonebridge Road;
- A226 London Road;
- A226 Galley Hill Road / Lower Road;
- A226 Stonebridge Road / Grove Road / B175 Roundabout;
- A226 / Thames Way Roundabout;
- A226 Thames Way;
- A226/A2260 Junction;
- A2260 Ebbsfleet Gateway;
- M25 Junction 1a;
- A2260/B259/International Way;
- A226 Galley Hill Road / High Street;
- A226 London Road / Craylands Lane;
- A266 / A206 / B255 Roundabout;
- Station Road/Station Approach/A206;
- A255;
- A2/A2260 Junction;
- A2 / Bean Lane Interchange;
- M25 Junction 2;

an existing 'A' road is likely to have a lower sensitivity than a minor residential road as it is already used by a larger volume of traffic; therefore a small increase in vehicle flow would have a smaller change in the nature of the road.

Table 6 Sensitivity of Receptors

Receptor Type	Receptor Sensitivity
Receptors of greatest sensitivity to traffic flow: schools, colleges, playgrounds, accident clusters, retirement homes, roads without footways that are used by pedestrians	High
Traffic flow sensitive receptors: congested junctions, doctors' surgeries, hospital, shopping areas with roadside frontage, roads with narrow footways, recreation facilities	Medium
Receptors with some sensitivity to traffic flow: place of worship, public open space, tourist attractions and residential areas with adequate footway provision	Low
Receptors with low sensitivity to traffic flows and those sufficiently distance from affected roads and junctions: links where no pedestrian activity occurs and where there is no provision for pedestrians. For example, strategic roads such and motorways and trunk roads or rural roads where there are no pedestrian-generating land uses within the vicinity	Very Low
Receptors of greatest sensitivity to traffic flow: schools, colleges, playgrounds, accident clusters, retirement homes, roads without footways that are used by pedestrians	High

113 A review of each highway link within the proximity of each receptor in relation to the key factors which affect the sensitivity of that link will be undertaken.

114 It is anticipated that sensitive receptors will be located on the following links:

- A226 Stonebridge Road;
 - Shopping areas (convenience store);
 - Residential areas with narrow footways;
 - Recreational facilities (gymnasium);
- A226 London Road;
 - Accident Clusters;
 - Doctor's Surgery (Greenhithe Surgery);
 - Residential areas with narrow footways;
 - Recreational facilities (Greenhithe Library).

Assessment Scenarios

115 The ES chapter will assess various scenarios which will include the phased demolition and construction of the Proposed Development, the opening year and future baseline (cumulative scenarios). The scenarios are subject to technical discussions with GBC, KCC and NH.

Baseline and Future Baseline Scenarios

116 The baseline scenarios provide an understanding of how the highway network operates at present. Considerations including committed developments (which may include Cumulative Schemes) in the area are included into this scenario. Information regarding committed developments will be acquired from GBC and KCC.

117 The future baseline scenarios will be calculated by applying the relevant Trip End Model Presentation Programme (TEMPro) growth factor. TEMPRO is the industry standard tool for estimating traffic growth in forecast assessment years, which is required when assessing the traffic impact of a development on the local highway network.

118 The growth factor will be applied to the baseline scenario and / or through the application of specific development information gathered from approved planning applications. The baseline scenario will

include committed developments and developments with submitted planning applications. The exact approach to this scenario, and the developments included will be determined through discussion with GBC, KCC and NH as required.

Core Assessment Scenarios

- 119** The core assessment scenarios provide an understanding of the performance of the highway network with the known committed developments and infrastructure improvements (i.e. those with planning permission) included. The committed developments will be informed by the relevant local authorities and may either be applied by individual methods or through the application of growth factors pending further discussion with KCC and NH. This is the assessment that any planning application should be assessed against to determine the required infrastructure.

Cumulative Assessment Scenarios

- 120** The cumulative assessment scenarios are designed to assess the local highway network in a future year including committed developments (i.e. those with planning permission) and cumulative developments (i.e. where a planning application has been submitted but is yet to be consented). The London Resort Scheme (currently withdrawn) will also be considered qualitatively, given the close proximity to the Proposed Development. The approach to these will be subject to discussions with KCC but may be either through individual calculations or through the application of growth factors or a combination of both. The purpose of this is to allow the Highway Authority to plan future improvements to transport networks including the walking, cycling, public transport and highway networks.

Assessment Time Periods

- 121** The Transport ES chapter will assess the following time periods for each of the above scenarios:
- AM Peak Hour;
 - PM Peak Hour; and
 - 24 Hour AADT.

Temporal Scope and Magnitude of Change

- 122** The assessment will identify whether the resultant effects of the Proposed Development will be permanent or temporary in nature and categorised as follows:
- **Permanent** – these are effects that will remain even when the Proposed Development is complete, although these effects may be caused by environmental changes that are permanent or temporary.
 - **Temporary** – these are effects that are related to environmental changes associated with an activity and that will cease when that activity finishes (construction activity). Temporary effects can be further categorised by the time period of which they will last; short-term (0-2 year impact), medium-term (3-5 year impact) and long-term (5-10 year impact).
- 123** The Institute of Environmental Management and Assessment (“the IEMA”), has published Guidance Notes No:1 Guidelines for the Environmental Assessment of Road Traffic (1993) commonly referred to as the IEMA guidelines. The guidelines provide a thorough approach to the assessment of environmental effects of traffic associated with proposed major developments.
- 124** Under the IEMA guidelines, it is recommended that the impacts of major developments are considered under each category:
- Severance;

- Driver Delay;
- Pedestrian Delay;
- Pedestrian Amenity;
- Fear and Intimidation; and
- Accidents and Safety.

Air Quality

125 It is considered that there is the potential for likely significant effects relating to air quality and so this topic will be 'scoped into' the ES. The air quality assessment will be undertaken by Air Quality Consultants Ltd (AQC).

126 The air quality ES chapter will:

1. Define the air quality baseline conditions;
2. Identify relevant air quality receptors;
3. Assess:
 - e. the potential for air quality impacts throughout the demolition and construction works, and as a result of the completed Proposed Development;
 - f. the likely significant air quality effects;
 - g. any required mitigation required to:
 - address any likely significant adverse air quality effects; and
 - minimise and reduce any other adverse air quality effects.
 - h. the potential for cumulative air quality effects with other agreed upon schemes in the surrounding area.

Baseline Conditions

127 GBC has declared multiple Air Quality Management Areas (AQMAs), including the Northfleet Industrial Area AQMA for exceedances of the 24-hour particulate matter (PM₁₀) objective; the Proposed Development is located within this area. The neighbouring Dartford Borough Council (DBC) has also declared multiple AQMAs, including the Dartford AQMA No.2 along the A226 corridor for exceedances of the annual mean nitrogen dioxide (NO₂) objective; the Proposed Development is also partially within this area.

128 GBC operates two automatic (NO₂ and PM₁₀) monitoring stations within the Borough, of which one (ZG3) is located approximately 750m south-east of the Proposed Development. GBC also operates a number of NO₂ monitoring sites closer to the Proposed Development using diffusion tubes, including seven monitoring sites within 2km. Additionally, DBC operates a number of NO₂ diffusion tube monitoring sites, including four close to the Proposed Development.

129 The latest monitoring data are shown in **Table 7** and the monitoring locations are displayed in **Figure 10**, along with the nearby AQMAs.

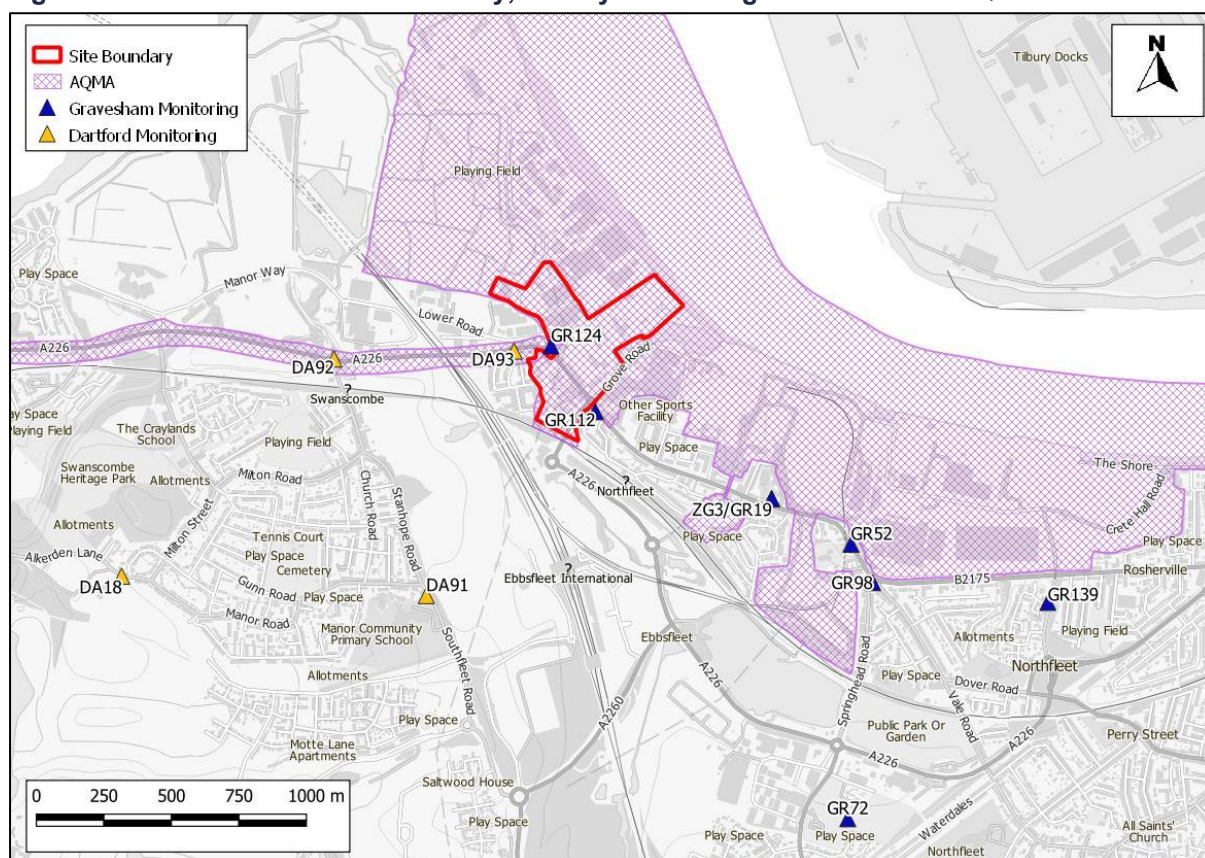
Table 7 Summary of Measured Annual Mean NO₂ Concentrations (µg/m³) (2016-2020)^a

Site ID	Site Type	Location	2016	2017	2018	2019	2020 ^b
GBC Monitoring Results ¹⁸							
ZG3	Industrial Background	Lawn Primary School	23.4	24.1	23.9	23.5	24.5
GR19	Industrial Background	Lawn Primary School (co-located with ZG3)	23.2	23.2	23.3	23.2	20.6

¹⁸ Gravesham Borough Council (2021) Air Quality Annual Status Report 2020

Site ID	Site Type	Location	2016	2017	2018	2019	2020 ^b
GR52	Roadside	32 The Hill	29.3	32.9	34.7	36.4	32.6
GR72	Background	Northfleet Cemetery	22.3	24.1	25.2	23.9	24.4
GR98	Roadside	The Leather Bottle PH	31.3	32.7	32.0	33.5	33.2
GR112	Roadside	50 Stonebridge	31.5	33.2	34.3	34.8	35.7
GR124	Roadside	Stonebridge Road	30.2	31.1	32.7	30.4	31.0
GR139	Roadside	Rosherville Way	-	-	37.6	30.5	34.0
DBC Monitoring Results ¹⁹							
DA18	Urban Background	Alkerdane Lane	26.1	25.3	25.8	26.3	-
DA91	Roadside	13 Southfleet Road	33.6	33.6	33.4	32.6	-
DA92	Roadside	Pilgrims Road/London Road	44.3	41.6	42.5	35.2	-
DA93	Roadside	Snowden Hill/London Road	42.9	40.3	41.0	38.2	-
Objective			40				

Figure 10 Indicative Site Boundary, Nearby Monitoring Locations and AQMAs²⁰



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¹⁹ Dartford Borough Council (2020) Air Quality Annual Status Report 2020

^a Exceedances of the objective are shown in **bold**.

^b Data not available for 2020.

²⁰ Indicative site boundary shown.

- 130** As shown in **Table 8**, two nearby monitoring sites have recorded exceedances of the annual mean NO₂ objective since 2016 and continued to do so in 2019. Concentrations have, however, remained well below 60 µg/m³ at all sites, indicating exceedances of the 1-hour mean objective are unlikely. There was no clear overall trend in concentrations between 2016 and 2019.
- 131** While 2020 results have been presented for completeness, they will not be relied upon in any way as they are not representative of 'typical' air quality conditions due to the impact of the COVID-19 pandemic on traffic volumes and thus pollutant concentrations. Data for 2021 has not yet been published, therefore concentrations measured in 2019 will be used within the air quality ES chapter.
- 132** GBC also measures PM₁₀ concentrations at all automatic monitoring stations within its administrative boundary, including the ZG3 automatic monitor. The latest PM₁₀ monitoring data are shown in **Table 8**.

Table 8 Summary of Measured Annual Mean NO₂ Concentrations (µg/m³) (2016-2020)

Site ID	Site Type	Location	2016	2017	2018	2019	2020
Annual Mean PM ₁₀ Concentrations (µg/m ³)							
ZG3	Industrial Background	Lawn Primary School	19.7	18.0	19.4	21.9	22.3
Objective			40				
No. of Daily Exceedances of 50 µg/m ³							
ZG3	Industrial Background	Lawn Primary School	7	2	4	3	10
Objective			35				

- 133** As shown in **Table 8**, no exceedances of the annual mean or daily mean PM₁₀ objectives were recorded between 2016 and 2019.
- 134** Future baseline concentrations of NO₂, PM₁₀ and PM_{2.5} (in the anticipated opening year of the Proposed Development) in the study area will be predicted using the dispersion model ADMS-Roads, at selected receptor locations. Air quality is generally expected to improve with time, due (for example) to more stringent emissions standards for motor vehicles; thus, the likely evolution of the baseline conditions will be considered. The air quality assessment will use the predicted future air quality conditions as a baseline from which to determine the significance of the effects of the completed and operational Proposed Development. The methodology is described below.

Sensitive Receptors

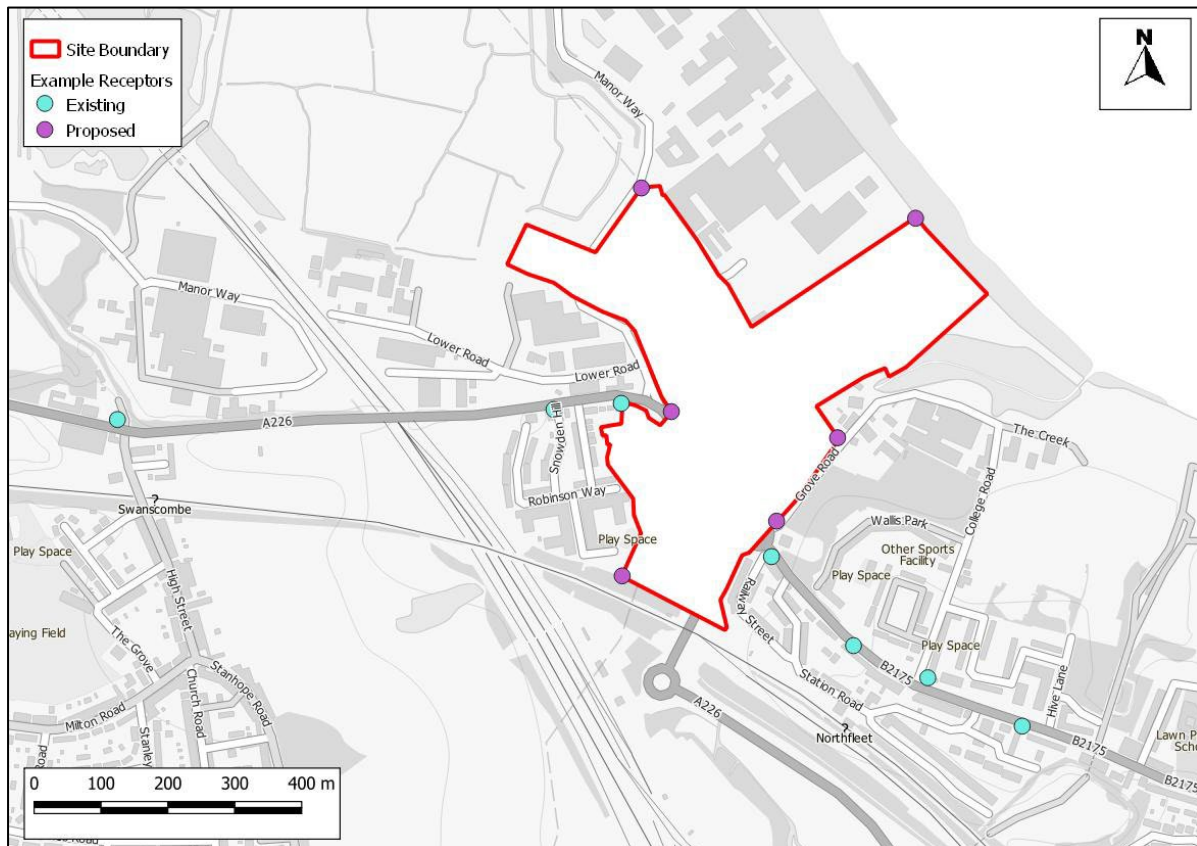
- 135** For the on-site demolition and construction activities, the assessment will consider the potential for impacts within 350m of the site boundary, and within 50m of the routes to be used by construction vehicles up to 500m from the site exit(s). For the demolition/construction dust assessment, relevant receptors (including introduced sensitive receptors, taking account of the phasing of the Proposed Development) in the area will be considered. Relevant receptors in the area include residential dwellings and educational facilities (high sensitivity receptors) as well as offices and shops (medium sensitivity receptors). Receptors will be identified based upon the distance bandings set out in guidance from the Institute of Air Quality Management (IAQM)²¹.
- 136** For the assessment of operational effects, suitable existing and introduced receptor locations will be identified based on detailed maps, satellite imagery, and plans of the Proposed Development. Receptors will be identified to represent a range of exposure, focusing on worst-case locations where the air quality objectives apply. Future receptor locations within the Proposed Development will also be

²¹ IAQM (2016) *Guidance on the Assessment of Dust from Demolition and Construction v1.1*

considered. The objectives apply at locations where members of the public are likely to be regularly present and are likely to be exposed over the averaging period of the objective (i.e., locations with relevant exposure). Consideration will be given to those locations with relevant exposure to the annual mean objectives (i.e., residential areas) and the 1-hour mean nitrogen dioxide objective (i.e., retail areas and public realm spaces). The air quality objectives do not apply at places of work (e.g. offices).

- 137 All receptors where the air quality objectives apply will be considered to be 'high' sensitivity receptors. **Figure 11** identifies the likely proposed receptors within the Proposed Development, as well as potential existing sensitive receptors. These are indicative locations only, selected for the purposes of understanding the potential worst-case effects, and final receptor locations will be determined when undertaking the assessment, based on available traffic data and plans of the Proposed Development.

Figure 11 Potential Receptor Locations²²



Assessment of Effects

- 138 Potential air quality effects that will be considered in relation to construction and operation of the Proposed Development include:

- Impacts of dust soiling and PM10 emissions during the demolition and construction of the Proposed Development on existing and introduced sensitive receptors in the local area (taking account of the phasing of the Proposed Development);
- Impacts of NO₂, PM10 and PM2.5 emissions from vehicles associated with the demolition and construction of the Proposed Development on existing sensitive receptors in the local area;
- Impacts of NO₂, PM10 and PM2.5 emissions from road traffic and energy plant (if proposed) generated by the Proposed Development once operational on existing sensitive receptors in the local area; and

²² Indicative site boundary

- The potential for the Proposed Development and cumulative schemes to cumulatively impact air quality at sensitive receptors during the demolition, construction and operation of the Proposed Development.

Demolition and Construction

- 139** The potential impacts from dust generated during the demolition and construction of the Proposed Development will be considered using the approach presented in the IAQM guidance for assessing impacts from construction activities²¹. Appropriate mitigation measures will be recommended based on the outcome of the dust risk assessment. The IAQM guidance is clear that, with appropriate mitigation in place, the residual effects will normally be ‘not significant’.
- 140** Emissions from construction plant (Non-Road Mobile Machinery (NRMM)) will not be explicitly modelled, as relevant guidance from the IAQM states that “*experience from assessing the exhaust emissions from on-site plant (also known as non-road mobile machinery or NRMM) [...] suggests that they are unlikely to make a significant impact on local air quality and in the vast majority of cases they will not need to be quantitatively assessed*”. Significant effects as a result of NRMM emissions can thus be discounted. However, suitable mitigation measures for site plant will be presented as part of the mitigation measures based on advice presented in the IAQM guidance document.
- 141** The number of demolition and construction vehicles (including Heavy Duty Vehicles (HDVs)) that will travel on the local road network during the demolition and construction of the Proposed Development will be considered in the context of the screening criteria provided in guidance from Environmental Protection UK (EPUK) and the IAQM²³. If the increase in HDV movements exceeds the screening criteria, then emissions from traffic generated during the demolition and construction works will be assessed quantitatively using the ADMS Road dispersion model. The IAQM screening criteria of an increase of 100 Light Duty Vehicles (LDVs) / 25 HDVs Annual Average Daily Traffic (AADT) on roads within the AQMA will be used to define the study area.
- 142** If dispersion modelling of construction traffic is required, the scenarios that will be considered as part of the assessment will include:
- Current baseline scenario (2019 – as most recent data);
 - Peak Construction Year without the Proposed Development, but including traffic generated by relevant cumulative schemes; and
 - Peak Construction Year with the Proposed Development, including traffic generated by relevant cumulative schemes and the construction of the Proposed Development itself.

Completed Development

- 143** The number of vehicle movements generated as a result of the operation of the Proposed Development will be considered in the context of the screening criteria (25 HDVs or 100 LDVs) provided in guidance from EPUK and the IAQM²³. If the Proposed Development is predicted to lead to an increase in vehicle movements (which will be understood once the traffic data has been generated by the project transport consultants) that exceeds the screening criteria, then emissions from traffic generated during the operational stage will be assessed quantitatively using the ADMS-Roads dispersion model. The model requires a variety of inputs, including road traffic data (flows, speeds and vehicle fleet composition) and meteorological data.
- 144** The energy strategy is not currently defined; however, should the Proposed Development include any centralised energy plant (e.g., CHP / large gas-fired boilers), and/or any emergency generators, the impacts of these plant will be assessed. Initially, the impacts will be assessed qualitatively based on the

²³ Moorcroft and Barrowcliffe et al (2017) *Land-Use Planning & Development Control: Planning For Air Quality v1.2*

proposed size, location and emissions performance and the proposed testing schedule. Where it is not possible to discount potentially significant contributions to short-term NO₂ concentrations based on the schedule, the contribution of the plant will be determined using the ADMS-5 dispersion model and added to baseline concentrations (including road traffic contributions) to determine total concentrations.

- 145** The ADMS-roads model will be used to predict concentrations of NO₂, PM₁₀ and PM_{2.5} for the following three scenarios:
- Baseline year (2019);
 - Opening year (earliest year of possible occupation/operation) without the Proposed Development, but including traffic generated by relevant cumulative schemes; and
 - Opening year (earliest year of possible occupation/operation) with the Proposed Development, including traffic generated by relevant cumulative schemes and the completed Proposed Development itself.
- 146** An important element of the modelling study will be to verify the ADMS-Roads model output against measured results. This will be undertaken by identifying suitable roadside air quality monitoring locations against which the model performance can be compared, in line with the methodology set out in Defra's TG (16)²⁴ guidance document.
- 147** Meteorological data will be taken from London City Airport, which is the nearest and most representative meteorological site to the Proposed Development which was operational in 2019. The year of meteorological data will be selected to match the baseline assessment year and the latest available monitoring data (2019).
- 148** Traffic data for the assessment will be provided by the appointed Transport Consultant and may, where necessary, be supplemented with data from the Department for Transport (DfT).
- 149** Background pollutant concentrations will be determined using data derived from the background maps published by Defra²⁴.
- 150** The overall effect will be evaluated using criteria recommended by EPUK/IAQM²³ and will be determined based on predicted impacts at receptors and professional judgement. Where required, mitigation measures will be proposed to ensure that residual effects are not significant.

Site Suitability

- 151** The acceptability of air quality conditions experienced by future occupants of the Proposed Development will be assessed in accordance with the methodology and criteria set out above for the assessment of the impacts of the Completed Development on existing air quality (constituting an assessment of site suitability). If conditions are found to exceed the statutory air quality objectives, mitigation measures will be recommended, as relevant, to ensure future occupants are exposed to acceptable air quality.

Cumulative Assessment

- 152** The cumulative demolition/construction dust effects of the Proposed Development and cumulative schemes 3, 5, and 6 as noted in the **Table 2** (within *Cumulative Effects with Other Developments* section of this Scoping Report) (due to their proximity to the Proposed Development) will be considered based on the IAQM Guidance for assessing impacts from construction activities²¹.
- 153** Cumulative operational effects include those associated with road traffic emissions and combustion plant. If the Proposed Development leads to a net decrease in traffic, or an increase in traffic below the

²⁴ Defra (2021) *Local Air Quality Management (LAQM) Support Website*

screening criteria, then cumulative road traffic impacts will be considered qualitatively. Otherwise, the inclusion of traffic generated by the cumulative schemes in the 'Opening year with the Proposed Development' scenario will ensure that cumulative effects are quantified. With regards to combustion plant sources, a review of nearby cumulative schemes will be undertaken to determine the cumulative impacts of any combustion plant sources.

Noise and Vibration

154 The noise and vibration assessment will consider the potential noise and vibration impacts and associated likely effects of the Proposed Development on nearby existing sensitive receptors during demolition and construction works and once the Proposed Development is completed and operational. Key acoustic issues for the design of the Proposed Development will also be considered for the application. An assessment of the suitability of the site for its proposed use from a noise and vibration perspective will also be undertaken.

155 This noise and vibration assessment will be undertaken by Sandy Brown.

Baseline Conditions

156 Baseline conditions are to be established for the site and surrounds for periods when Ebbsfleet United Football Club are hosting home matches and when the ground is not in use.

157 Accordingly, baseline noise measurements during a home football match were completed along pedestrian routes (before and after the match) and at the nearest residential receptors (during the match) on Sunday 15 May 2022. The measurements were taken during Ebbsfleet United's last home match of the season and were likely to have a higher attendance than typical conditions. An additional survey is to be completed during July 2022 (at the same positions), to evaluate the noise emissions associated with a lower attended fixture, to establish the range in existing operational noise levels.

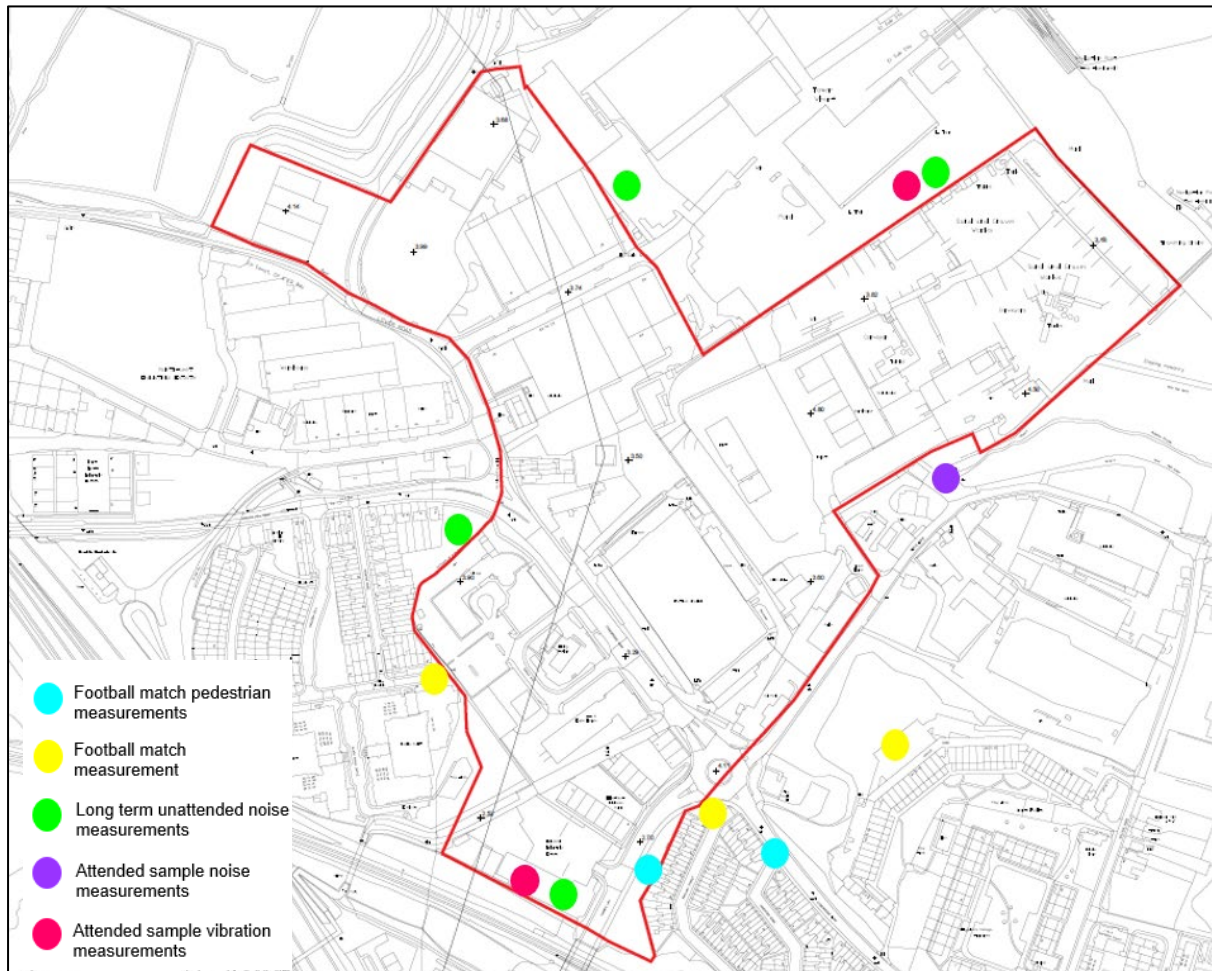
158 A series of long-term baseline noise surveys are to be completed on the site to establish the conditions during periods when no football is taking place. The site is predominately located adjacent to existing industrial and residential use. The survey positions will be chosen to evaluate the noise emissions from the nearby roads, and industrial sources (Tower Wharf and Tilbury Docks).

159 The long-term noise survey will consist of up to four positions, with each position to remain in place for 7 days. The length and number of positions is usually reasonable for establishing the existing baseline noise conditions from consistent sources. Nevertheless, planning permissions and other publicly available information on the operation of nearby industrial uses will be reviewed, so that peak operational noise emissions from these uses can be established.

160 Vibration measurements will be completed adjacent to Tower Wharf and to the south-east of the site, the closest position to the trainlines (HS1 and South Eastern Mainline).

161 The baseline noise data shall be analysed to determine the representative background noise levels in each of the day and night periods at each position where the monitoring was undertaken, in accordance with guidance in BS 4142:2014.

162 The noise and vibration positions are illustrated in **Figure 12**.

Figure 12 Noise and Vibration Monitoring Positions²⁵

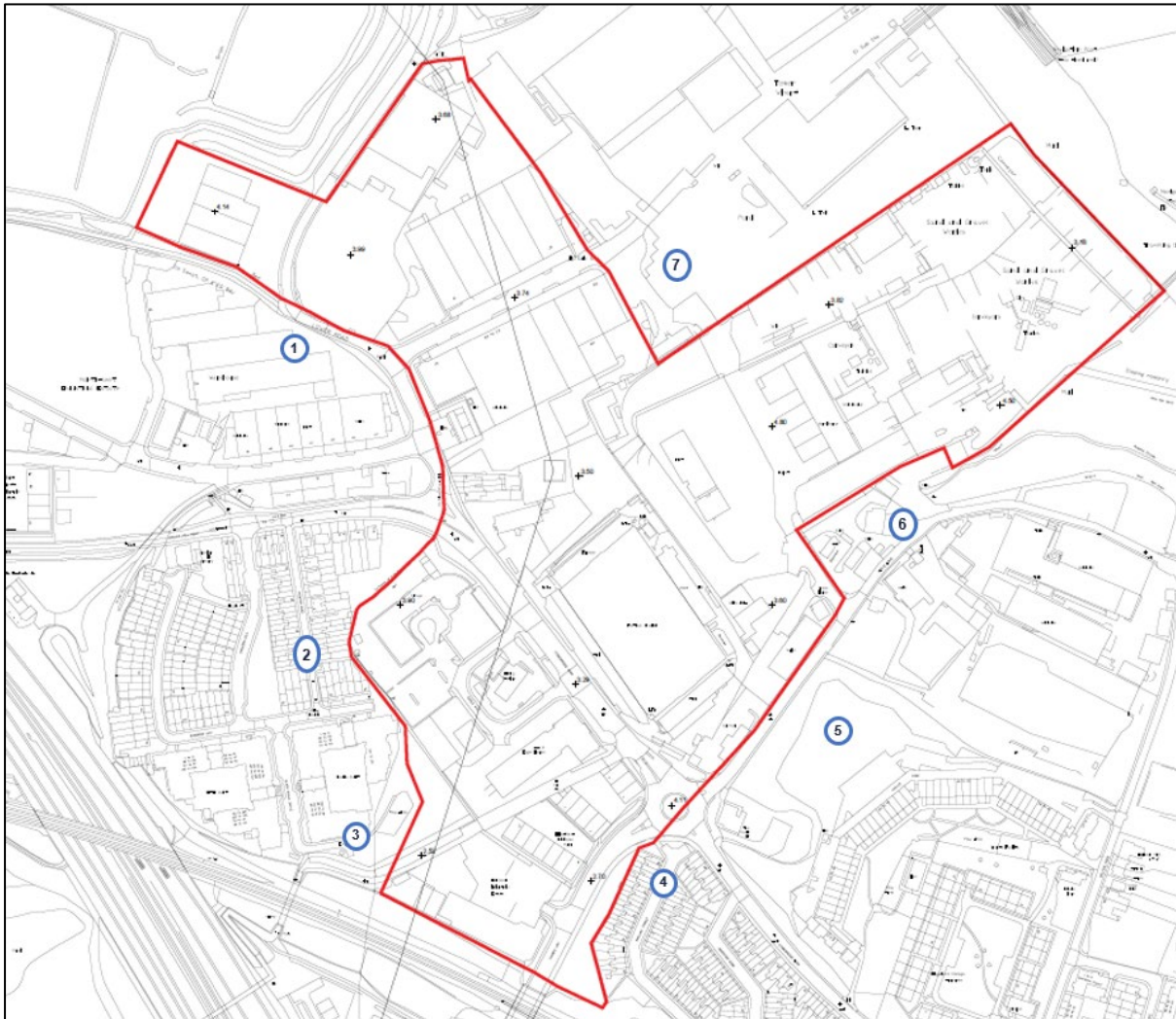
Sensitive Receptors

163 The assessment (demolition, construction and completed development) will consider the following surrounding receptors:

- 1 Industrial facilities on Lower Road (industrial);
- 2 Residences on Taunton Road and Robinson Way (residential);
- 3 Residences on Black Eagle Drive (residential);
- 4 Residences on Railway Street (residential);
- 5 Residence at Wallis Park (residential);
- 6 Industrial facilities on Grove Road (industrial) and;
- 7 Tower Wharf (industrial).

164 The location of the receptors are illustrated in **Figure 13**, as per the reference number listed above.

²⁵ Indicative site boundary shown in figures.

Figure 13 Nearest Receptors

165 The introduced residential receptors will be considered as part of the site suitability assessment.

166 The potentially sensitive noise and vibration receptors on and surrounding the site are to have their sensitivity categorised in accordance with EIA terminology (**Table 9**).

Table 9 Sensitivity of Receptor

Sensitivity of Receptor	Description
High	Residential, hotels and hostels
Medium	Health care (e.g. doctor's surgery, dentist etc) and educational buildings (including day care centre)
Low	Commercial offices, industrial and retail buildings

Assessment of Effects

167 The scope of the noise and vibration assessment will identify:

- The potentially sensitive noise and vibration receptors on and surrounding the site; and
- Whether the overall effect of the noise and vibration exposure generated by the Proposed Development is, or would be, above or below the significant observed adverse effect level (SOAEL) and the lowest observed adverse effect level (LOAEL). The scale of effects will refer to guidance within the Noise Policy Statement for England (NPSE) and GBC's Local Plan.

Demolition and Construction

168 The demolition and construction noise and vibration assessment will identify:

- Temporary noise and vibration nuisance due to the enabling, demolition and construction works period including earthworks, substructure works and superstructure works – associated with daytime and (if required) night time works;
- Temporary noise nuisance to existing surrounding sensitive receptors from road vehicle movements generated during the enabling, demolition and construction works, associated with daytime and (if required) night time works; and
- Once further details into the construction works and programme are known the assessment will consider either peak construction (in terms of activities and vehicle movements) or adopt a timeslice approach to the assessment of effects across the phases.

Completed Development

169 The completed development noise and vibration assessment will identify:

- Noise emissions from Ebbsfleet United's proposed new stadium and its increased capacity;
- Noise emissions along pedestrian routes associated with Ebbsfleet United, based on an increased capacity and potential additional uses;
- Traffic related noise effects once the Proposed Development is operational – associated with road traffic movements on existing roads. The assessments will be completed in line with CRTN and DMRB, with significance assessed using and IOA/IEMA guidance;
- Noise generated from building services plant associated with retail and commercial buildings. The assessments will follow the approach in BS 4142:2014+A1:2019; and
- Depending on the location of any 'cumulative schemes' relative to the Proposed Development site, consideration will be given to the potential for any cumulative noise impacts / effects.

Site Suitability

170 Site Suitability assessments considering noise and vibration will be completed to evaluate whether acoustic specific design measures are required to achieve appropriate conditions for the proposed residential uses. When considering site suitability, the surrounding industrial uses (including Seacon terminals) will be taken into consideration.

Cumulative Effects

171 Cumulative effects will be evaluated during the demolition, enabling and construction works and the operational phases of the Proposed Development;

172 A two-tiered cumulative assessment will be completed, and will comprise of the following:

- Tier One: Consideration of the Proposed Development coming forward alongside other developments which have full planning permission / resolution to grant permission, or schemes which have been submitted (but not yet permitted);
- Tier Two: Consideration of the Proposed Development with the 'Tier One' cumulative schemes and the 'Tier Two' scheme.

173 In general, cumulative demolition, enabling and construction effects will not be considered for schemes/plots that are more than 200m from the receptors affected by the Proposed Development.

- 174** Operational cumulative effects will be limited to considering traffic and building services plant noise emissions only. The assessment of cumulative plant noise emissions will be limited shared receptors that are no more than 200m from each scheme.

Daylight, Sunlight, Overshadowing, Solar Glare and Light Pollution

- 175** It is considered that there is the potential for likely significant effects relating to daylight, sunlight, overshadowing, solar glare and light pollution and so these topics shall be 'scoped into' the EIA.
- 176** Given the outline nature of the Proposed Development it is not possible to quantitatively assess solar glare and light spill, as the façade details and location of commercial lighting are required to undertake these assessments, which are not known at this stage. However, a high-level qualitative review of potential solar glare and light spill implications of future design will be undertaken. These assessments will be considered further at Reserved Matters as necessary.
- 177** Internal daylight and sunlight amenity within the site is a design issue and is therefore also scoped out of the EIA. This matter will be considered in a standalone document accompanying the application. Detailed internal daylight and sunlight assessment of residential blocks will be undertaken at Reserved Matters stage (RMA).
- 178** The assessments will be undertaken by GIA.

Baseline Conditions

- 179** The site lies within Northfleet, Gravesham, UK and currently comprises a football stadium, industrial land uses including an aggregates site and smaller industrial units and hardstanding.
- 180** BRE Guidelines²⁶ state that residential buildings are recognised as having a reasonable expectation to daylight and sunlight, given their permanent occupancy. As such, the baseline considers the existing daylight and sunlight conditions at neighbouring residential properties situated adjacent to the site, with the potential to be affected by the Proposed Development.
- 181** The baseline scenario of the surrounding area has been established following a review of the land uses in proximity of the site, with reference to information available via the Valuation Office Agency ('VOA') website (i.e. council tax records) and Google Maps to identify potentially sensitive properties.
- 182** As per BRE Guidelines, if the angle to the horizontal subtended by a new development, at the level of the centre of the lowest window of a neighbouring property is less than 25°, then it is unlikely to be affected by the Proposed Development. Therefore, this rule in combination with professional judgement has been used to identify which properties require assessment.
- 183** Public and private outdoor amenity with the potential to be overshadowed by the Proposed Development are considered sensitive to overshadowing and are also therefore considered in the baseline condition.

Sensitive Receptors

Daylight and Sunlight Receptors

- 184** Properties along the following streets are considered sensitive to daylight and sunlight impacts from the Proposed Development and will therefore be assessed. At this stage, the addresses are indicative

²⁶ Building Research Establishment (BRE) Guidelines: Site Layout Planning for Daylight and Sunlight 2022, A Guide to Good Practice, Third Edition 2022.

however the full addresses will be detailed in the ES chapter once the baseline research has been completed:

- Railway Street;
- Robinson Way;
- Taunton Road;
- Snowdon Hill; and
- Galley Hill Road.

Figure 14 Daylight and Sunlight Receptors²⁷



²⁷ Indicative site boundary shown in figures.

Overshadowing Receptors

185 Public and private amenity areas located west and south of the Proposed Development are sensitive to overshadowing impacts from the Proposed Development, as shown in **Figure 15**. As such, the following amenity areas will be assessed:

- Communal amenity area and playground on Ebbsfleet Business Park
- Rear gardens associated with properties along Taunton Road, Robinson Way, and Galey Hill Road;
- Botany Marshes;
- The River Thames; and
- Robins Creek.

Figure 15 **Overshadowing Receptors**



Solar Glare Receptors

- 186** Solar glare is generally only a potential significant problem to motorists or train drivers approaching traffic lights or signals surrounding the site where there are large areas of reflective glass, particularly sloping glass, which could reflect sunlight and cause solar dazzle.
- 187** A review of potentially sensitive road and railway viewpoints will be undertaken, where instances of glare could occur. These will be identified on a plan in the ES chapter to help inform future design of glazing or reflective façade materials. As noted earlier, technical solar glare assessments will be undertaken upon any sensitive viewpoints surrounding the site at RMA stage should any significant effects be considered likely.

Light Pollution Receptors

- 188** Considering of light pollution is required when a new development comprises highly glazed areas of commercial use where extensive artificial lighting may be used or directional outdoor lighting such as from a stadium.
- 189** A review of potential sources of light spill in relation to sensitive residential receptors will be undertaken and presented in the ES chapter. This will help inform future detailed design at RMA stage, where the future lighting scheme of the retail and stadium uses proposed will be designed in accordance with ILP Guidance (2021). Typically, effects occur when receptors are located within approximately 20m from the source of artificial lighting.
- 190** It is intended that any external lighting with regards to the detailed elements of the Proposed Development will be suitably designed and specified, taking on board the ILP recommendations and the Building Research Establishment's (BRE) Obtrusive Light from Proposed Developments DG:529, so that any potential light spillage will be minimised as to avoid significant environmental effects.

Potential Effects

- 191** The potential daylight, sunlight, overshadowing effects associated with the Proposed Development are considered to be as follows (and as relevant to the scope of the assessment in terms of receptors identified above):
- Changes to the daylight and sunlight amenity within the residential accommodation which has a reasonable expectation to natural light because of the demolition and construction works;
 - Changes to overshadowing of amenity areas because of the demolition and construction works;
 - Changes to the daylight and sunlight amenity to surrounding residential accommodation which has a reasonable expectation to natural light as a result of the Proposed Development once complete and operational; and
 - Changes to overshadowing of amenity areas as a result of the Proposed Development once complete and operational.

Scope of Assessment

- 192** The assessments will be carried out in accordance with BRE Guidelines²⁸. The analysis will be undertaken from a 3D computer model constructed using specialist software.

²⁸ Building Research Establishment (BRE) Guidelines: Site Layout Planning for Daylight and Sunlight 2022, A Guide to Good Practice, Third Edition 2022.

Demolition and Construction

- 193** Owing to the evolving and changing nature of demolition and construction activities, the assessment of potential effects during demolition and construction of the Proposed Development on daylight, sunlight and overshadowing to surrounding properties will not be modelled. Instead, a qualitative assessment will be undertaken using professional judgement, with the worst-case scenario in terms of the effects quantitatively modelled and analysed through the assessment of the completed Proposed Development (see below for further details).

Completed Development

- 194** In line with BRE Guidelines, both the Vertical Sky Component (VSC) and No Sky Line (NSL) assessments will be undertaken for the Proposed Development, for all residential receptors identified above.
- 195** The sunlight amenity to the surrounding receptors will be considered by reference to the Annual Probable Sunlight Hours (APSH) method for all receptors sensitive to sunlight impacts identified above. With shadows being cast in a northerly direction in the northern hemisphere, this assessment will consider those windows serving living areas which face the site and are located within 90 degrees of due south.
- 196** The nature (beneficial or adverse), scale (negligible, minor, moderate or major) and ultimately the significance of daylight and sunlight amenity effects will be determined using professional judgement and by reference to Appendix H of the BRE Guidelines.

Overshadowing

- 197** With regards to the relevant existing surrounding outdoor amenity areas and the baseline level of overshadowing, the transient overshadowing (TOS) will be used.
- 198** The overshadowing analysis on the surrounding areas of amenity space will be undertaken by reference to the TOS method of assessment.
- 199** For the TOS assessment, the path of shadow will be mapped for the Proposed Development on the following dates as suggested by the BRE Guidelines:
- 21st March (Spring Equinox);
 - 21st June (Summer Solstice); and
 - 21st December (Winter Solstice).
- 200** The nature (beneficial or adverse), scale (negligible, minor, moderate or major) and ultimately the significance of overshadowing effects will be determined using professional judgement.
- 201** Depending on the outcome of this analysis the Sun Hours on Ground (SHOG) assessment may be required for any amenity areas that appear to be significantly impacted by the Proposed Development. The SHOG assessment considers the proportion of a designated amenity space which receives 2 hours of direct sunlight on 21st March.

Cumulative Effects

- 202** Should there be any surrounding cumulative schemes (Tier One) with the potential to generate cumulative effects at the receptors identified above, these would be assessed in conjunction with the Proposed Development in a cumulative scenario. A qualitative high-level assessment of the Proposed Development coming forward alongside the Tier One schemes, and London Resort Scheme will be undertaken in the ES Chapter (Tier Two).

203 From review of the surrounding Tier Two cumulative schemes, there is potential for cumulative effects arising from one cumulative development: *Land At Former Northfleet Cement Works Outline Scheme (EDC/16/0004) (Pending Decision)*, located south-east of the site (reference 5 in **Table 2**). This is dependent on placement of massing of the final Proposed Development and further review of this cumulative scheme, which will therefore be considered in the ES chapter.

Wind Microclimate

204 It is considered that there is the potential for likely significant effects relating to the wind microclimate, and so this topic will be 'scoped into' the EIA. The assessment will be undertaken by GIA.

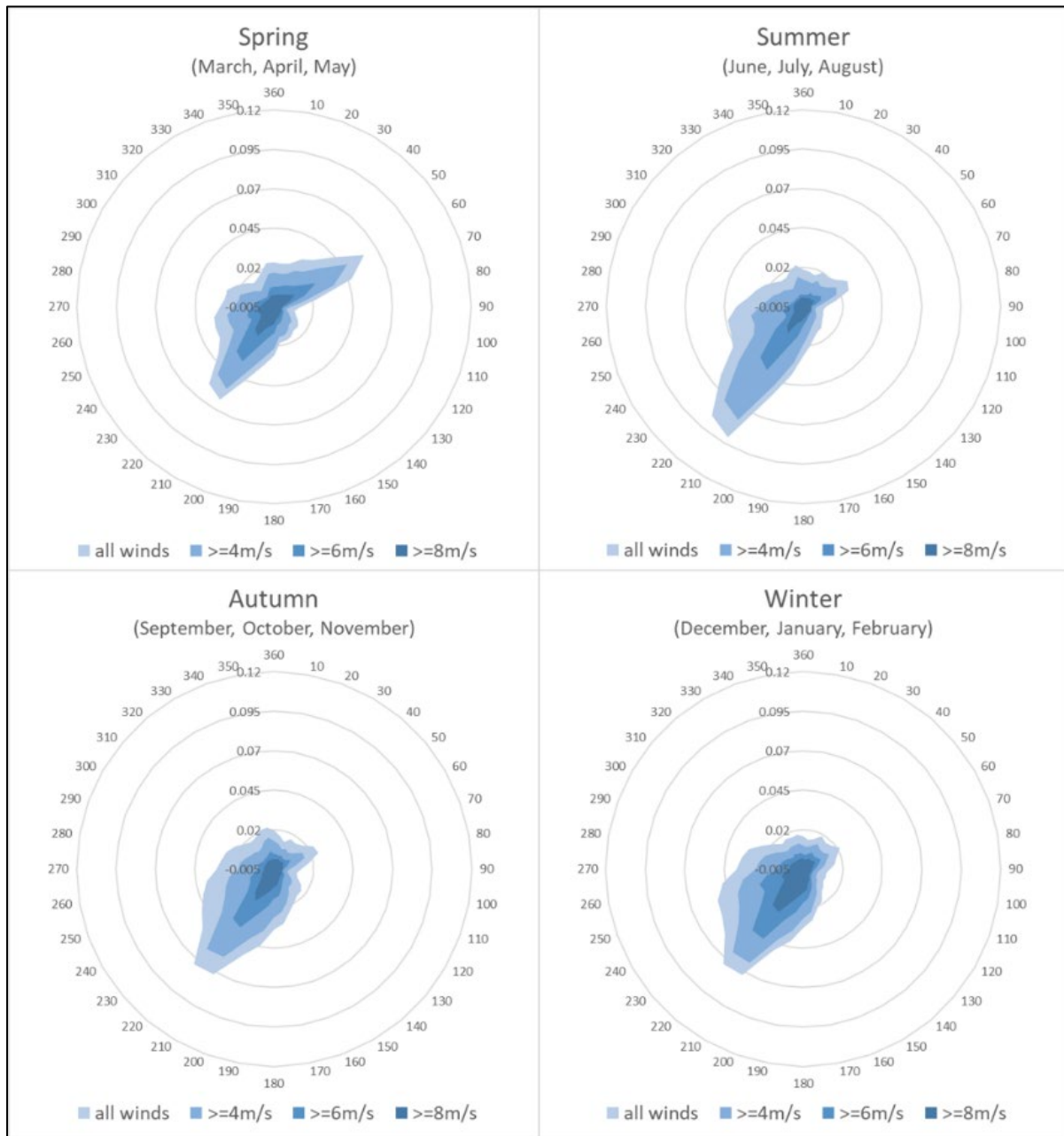
205 The ES will:

1. Define the baseline wind conditions;
2. Identify relevant receptors;
3. Assess:
 - a. the potential for wind microclimate effects as a result of the completed and operational Proposed Development.
 - b. the likely significance of any wind microclimate effects.
 - c. any required mitigation to:
 - avoid significant adverse wind microclimate effects; and
 - minimise and reduce any other adverse wind microclimate effects.
 - d. the potential for cumulative wind microclimate effects.

Baseline Conditions

206 Winds for the Kent area are predominantly from the south-west, with a secondary peak from the north-east during spring. Winds are typically stronger in the winter season, and lighter throughout the summer. Wind roses per season are shown in **Figure 16**, from data attained from Biggin Hill airport (25km from the site) over a period of 30 years. These wind roses provide the frequency of occurrence and magnitude of winds from all directions within the 30-year period.

Figure 16 Wind Roses for Biggin Hill Airport (Radial Axis Indicates the Percentage of Time per Season the Stated Wind Speed Threshold is Exceeded)



- 207** To understand and quantify the baseline conditions at the site, a full-scale digital model will be constructed reflecting the existing built form of the site and the surrounding area (minimum 400m radius from the centre of the site). This full-scale digital model will be tested in high resolution Computational Fluid Dynamics (CFD) to allow the baseline wind microclimate conditions to be quantified.
- 208** The baseline results from CFD will be combined with long-term meteorological climate data, corrected to understand the baseline conditions specific to the site, having regard to its location within Kent. Testing in CFD will be conducted in the absence of any existing hard or soft landscaping, in order to provide a conservative result.

Sensitive Receptors

- 209** The main interactions of wind with a building occurs relatively close to the building, particularly when there are neighbouring buildings and streets along which the wind can be channelled. This means that

the focus of the assessment is within the site boundary and the immediate surrounding streets and public realm. The key receptors within and around the site are noted below.

210 The study area comprises the site and its immediate surroundings within a minimum 400m radius from the centre of the site.

211 Key receptors within and around the site are anticipated to include:

- Pedestrian footpaths or 'thoroughfares';
- Entrance locations for buildings (on and off-site);
- Amenity areas (i.e. open space), both on and off-site;
- The external pedestrian areas of the football stadium;
- The football pitch;
- On site accessible podium/terrace levels and balconies;
- Bus stops;
- Junctions (pedestrians); and
- Pedestrian Crossings.

Potential Effects

212 Undesirable wind speeds can make spaces uncomfortable or unsafe for pedestrian use. The introduction of the Proposed Development's massing on-site will, therefore, have the potential to influence the baseline wind conditions on and surrounding the Proposed Development.

213 The potential wind microclimate effects associated with the Proposed Development are considered to be:

- Undesirable wind speeds in accessible ground and elevated levels of the Proposed Development, surrounding buildings, pedestrian thoroughfares, pedestrian junctions, bus stops and nearby areas of public realm during the demolition and construction phase; and
- Undesirable wind speeds at accessible ground and elevated levels of the Proposed Development, including entrances, balconies and accessible podium/terrace levels, thoroughfares and amenity spaces, surrounding buildings (including entrances), pedestrian junctions, bus stops and nearby areas of the public realm during the operational phase.

Scope of Assessment

214 The assessment of the wind microclimate will be based on the results from a series of tests on full-scale digital models using CFD to provide a detailed assessment. The wind microclimate will be benchmarked against the Lawson Comfort Criteria, in order to assess the pedestrian comfort for users of the Proposed Development.

215 During design development, CFD testing of the developing massing will be carried out for selected wind angles of concern to examine the anticipated flows and to assist in refining the design.

216 Given the size and geometry of the Proposed Development, in addition to the site's location in relation to surrounding buildings and nearby areas of public realm, it is important to avoid undesirable wind speeds being generated at ground and accessible elevated levels.

217 The wind microclimate assessment will therefore quantify the potential changes to the local wind environment (both on-site and within the surrounding area) in terms of pedestrian amenity and public open space and quantify these in relation to their 'usability' for a range of pedestrian and amenity

activities (i.e. thoroughfares, entrances, sitting, etc), as defined by the well-known and established Lawson Comfort Criteria.

- 218** Comfort thresholds are shown in **Table 10** below. If the measured wind conditions exceed the threshold wind speed for more than 5% of the time (whether that is seasonally or annually), then they are unacceptable for the stated pedestrian activity and the expectation is that there may be complaints of nuisance or people will not use the area for its intended purpose.

Table 10 Lawson (CoL Variant) Comfort Criteria Thresholds

Key	Comfort Category	Threshold	Description
	Frequent Sitting	2.5 m/s	Acceptable for frequent outdoor sitting use, e.g. restaurants, cafe
	Occasional Sitting	4 m/s	Acceptable for occasional outdoor seating, e.g. general public outdoor spaces, balconies and terraces intended for occasional use etc.
	Standing	6 m/s	Acceptable for entrances, bus stops, covered walkways or passageways beneath buildings.
	Walking	8 m/s	Acceptable for external pavements, walkways.
	Uncomfortable	>8 m/s	Not comfortable for regular pedestrian access.

- 219** As a mixed-use scheme, the target wind environment on-site would usually include the following activities:

- Occasional sitting (or calmer) for amenity spaces (in the summer months) - A mixture of occasional sitting and standing may be tolerable where no seating provisions are specifically provided, and in private spaces;
- Standing conditions outside building entrances, and pick-up/drop-off points etc (throughout the year); and
- Walking on thoroughfares and access routes (throughout the year).

- 220** If strong winds are measured then these will also be reported. The activities described above are those used by the Lawson Comfort Criteria. The “uncomfortable” category is often associated with occasional strong winds (in excess of 15m/s) and should be mitigated unless they occur on less frequently used routes (e.g. back-of-house service areas) or in areas inaccessible to the general public.

- 221** Strong winds are reported for exceedances of 15m/s (to account for less able-bodied people or vulnerable users such as cyclists) for more an 0.022% of the year (or above approximately 1.9 hours/year).

Demolition and Construction

- 222** As demolition and construction works progress, the conditions on and around the Proposed Development site would be expected to gradually transition between those of the baseline and the final completed Proposed Development. A qualitative approach will be taken to the assessment of the demolition and construction works, with limited or no access of the majority of the Proposed Development site and in the immediate vicinity available to pedestrians.

Operational

- 223** To understand the future wind conditions at the site, CFD testing will be carried out to establish wind conditions once the Proposed Development is completed and operational.
- 224** Five configurations will be tested as set out below:
- **Configuration 1:** Existing Site (baseline scenario) with the existing surrounding buildings.
 - **Configuration 2:** Intermediate phases with existing surrounding buildings (this will depend on the phasing strategy which is yet to be determined);
 - **Configuration 3:** Proposed Development with the existing surrounding buildings;
 - **Configuration 4:** Proposed Development with the Tier One cumulative surrounding buildings; and
 - **Configuration 5:** Proposed Development with the Tier One and Tier Two cumulative surrounding buildings (qualitative).
- 225** 3D models of the Proposed Development, existing surroundings and nearby cumulative schemes, as appropriate, will be created and tested in high resolution CFD, to allow the future wind microclimate conditions to be quantified. The model will cover a minimum radius of 400m. Mean wind speeds and turbulence levels (to allow the calculation of gust speeds) will be measured at 1.5m above ground level and any raised areas which are accessible to pedestrians, for all wind directions.
- 226** Based on the results of the CFD testing assessed against the Comfort Thresholds discussed above, the suitability of the conditions and the likely effect at particular locations, both on-site and off-site, will be determined.
- 227** The adopted scale for the significance criteria is a logical comparison of the measured wind environment with the desired wind environment. An adverse effect implies that a location has a wind environment that is unsuitable for its intended use and mitigation should therefore be considered. A beneficial effect indicates that a location has a wind environment that is considered suitable (or better) for its intended use and, therefore, mitigation is not required.
- 228** The minor, moderate and major categories indicate the scale of severity with regards to the difference between the desired microclimate and the actual microclimate. As an example, if the desired wind conditions at a particular location are required to be suitable for standing, but the predicted wind conditions are suitable for walking, the difference between the desired and predicted wind condition is one category windier than desired. In this case, the scale and nature of the effect would be identified as minor adverse.
- 229** Adverse effects that are minor, moderate and major in scale are considered a 'significant' effect in EIA terms, which is material to the planning decision process as it implies that a location, or area, has a wind microclimate that is unsuitable for the desired use of that area. Beneficial effects (at all scales) are considered 'not significant'.
- 230** Wind effects due to development are usually 'felt' within the Proposed Development site boundary or the immediate surrounding streets and are due to the building massing and orientation. Consequently, all reported effects are considered to be direct, local and long-term unless there is a change in the massing or climate.
- 231** The potential for strong winds to occur will also be addressed for all the scenarios examined. Strong winds are considered to be significant as soon as the threshold is exceeded, regardless of the magnitude of exceedance.
- 232** The suitability of the conditions both within the Proposed Development site and surrounding the Proposed Development site, both in terms of comfort and strong winds, will be presented and discussed within the ES, and a supporting technical appendix.

Cumulative Effects

- 233** As noted in the *Cumulative Effects with Other Developments* section of this Scoping Report, a two-tier cumulative assessment will be undertaken for this site. Tier One is a quantitative assessment which will consider the Proposed Development coming forward alongside other developments in the area that have either submitted a planning application or that have a resolution to grant / full planning consent. Tier two will provide an assessment of the Proposed Development with the Tier One schemes and an additional qualitative assessment of the London Resort.
- 234** The cumulative assessment will include cumulative schemes within a 400m radius of the centre of the site (Tier 1 schemes 1 and 2 within **Table 2** and the London Resort (Tier 2) scheme). A list of cumulative schemes to be considered is included within this Scoping Report (refer to *Cumulative Effects with other Developments* section above).

Climate Change and Greenhouse Gas Assessment

- 235** The 2017 EIA Regulations introduced the requirement for the consideration of climate as part of the EIA process. The EIA Regulations seek to account for climate by requiring a description of 'the impact of the project on climate' and 'the vulnerability of the project to climate change' (Schedule 4, paragraph 5(f)).
- 236** Based on the requirement of the EIA Regulations to address climate change and relevant guidance suggesting that any greenhouse gas (GHG) emissions or reductions from a project may be considered as significant, this topic is 'scoped into' the EIA.
- 237** The Climate Change and Greenhouse Gas Emissions ES chapter will comprise two parts:
- Part one of the ES chapter will comprise the GHG Assessment; and
 - Part two will comprise Climate Change Resilience.

The Proposed Development's Potential Impact on Climate

- 238** The approach to assessing the potential impact of the Proposed Development on the climate will be undertaken in accordance with the Institute of Environmental Management and Assessment (IEMA) guidance '*Assessing Greenhouse Gas Emissions and Evaluating Their Significance*'²⁹. This guidance sets out a 'good practice' approach to achieving a proportionate assessment of a development's potential impact on climate and communicating the results in terms of a notional percentage contribution relative to a carbon budget, together with appropriate mitigation.
- 239** The guidance presents a series of principles developed by IEMA, which highlight that all GHG emissions contribute to climate change, and that the combined effect of all emissions draws us closer to the scientifically defined environmental limit for climate change. The IEMA guidance assigns significance criteria to the impact of a development's lifecycle GHG emissions, relative to its alignment with the UK Government decarbonisation targets to achieve Net Zero Carbon by 2050, and limit global temperature increase to 1.5°C above pre-industrial levels. For a development to comply with the 1.5°C trajectory of decarbonisation, mitigation is encouraged early and throughout the design process, in line with IEMA's acknowledgement that the ability to effect change to achieve GHG emissions reduction for a project reduces over time.

²⁹ IEMA (2022) *Assessing Greenhouse Gas Emissions and Evaluating Their Significance*, 2nd Edition, Available: <https://www.iema.net>.

- 240** Consistent with the guidance, the approach taken in the EIA will be to quantify the net lifecycle GHG emissions³⁰ from the Proposed Development and compare against an existing carbon budget that complies with the UK's Net Zero compatible trajectory. This allows the significance of the Proposed Development's impact on climate change to be quantitatively assessed.
- 241** The ES will present the carbon mitigation being proposed, which will follow the principles of the carbon management hierarchy (i.e., avoid, reduce, off-set), in order to reduce, as far as reasonably practicable, the anticipated GHG emissions over the Proposed Development's lifecycle.
- 242** The assessment of GHG emissions (essentially a carbon footprint or 'inventory' of the Proposed Development's lifecycle) and an outline of the carbon mitigation measures proposed will be presented within Part one of the Climate Change and Greenhouse Gas Emissions ES chapter (Volume 1).

The Potential Impact of Climate Change on the Proposed Development

- 243** The approach to assessing the potential impact of climate change on the Proposed Development will be undertaken in accordance with IEMA's guidance '*Climate Change Resilience and Adaption*'³¹ which presents a framework for the consideration of climate change resilience and adaption in the EIA process. It recognises a need for a proportionate approach to the assessment, due to the uncertainties associated with predicting how the environment will respond to climate change.
- 244** The guidance advises on, amongst other things, defining the future climate scenario, the integration of climate change adaption into the design, and the process for EIA. The guidance also provides advice on the execution of the impact assessment across the technical topics, including the identification of the climate related parameters which are likely to influence the project in question, and the anticipated changes to those parameters under a future climate scenario.
- 245** Consistent with the guidance, the ES will describe a future climate scenario which will be developed using future climate projections published by the Met Office (through the UK Climate Projections (UKCP18) website³²). The results include projections for variables including annual mean temperatures, and annual changes in summer and winter precipitation.
- 246** To describe the predicted future climate, it is proposed that a medium emissions scenario (Relative Concentration Pathway (RCP) 8.5) for 2080 will be utilised as the future baseline. RCP8.5 has been used as it represents a conservative high emissions scenario. The year 2080 is the timeframe considered most relevant to the Proposed Development. The projected change to the range of climatic conditions will adopt the 50% probability level, which is a central estimate adopted given the level of uncertainty associated with the modelled scenarios. A Climate Change Technical Note setting out the emissions scenario used and probability levels shall be provided as an annex to the ES chapter.
- 247** The future climate change scenario will be considered within the ES for each of the technical topics being presented, and the level of assessment and methodology will be proportional to the available evidence base. The aim of the assessment will be to consider whether the effect on receptors (under the baseline condition, without climate change) are likely to be different under an alternative future climate regime; in particular, to identify whether the potential impacts of the Proposed Development will be worse or better under the future baseline, and therefore if these changes alter the significance of effects identified for the Proposed Development under the baseline condition (without climate change). A key aspect of the assessment (within each of the technical topics presented) will be to identify the likely effect of those receptors considered more vulnerable to changes in climate, having taken into

³⁰ The net GHG emissions contribution is the difference between the existing GHG emissions within the Proposed Development boundary (prior to the Proposed Development commencing) and the predicted Proposed Development emissions.

³¹ IEMA (2020) *Climate Change Resilience and Adaption*, Available: <https://www.iema.net>.

³² <https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/download-data>

account the resilience and adaptive measures (being either design or management) which are proposed for the scheme in order to mitigate the risk presented by climate change.

- 248** Due to the level of uncertainty in both the future climate projections and how the future climate conditions may affect sensitive receptors, the assessment will be qualitative, based on professional judgement, unless where there is published, accepted quantifiable methods available (i.e. in relation to the assessment of flood risk).
- 249** The ES chapter will present the review of the future climate change scenario in terms of how the effects on receptors (under the current condition, without climate change) are likely to be different under an alternative future climate regime. In addition, the adaption and resilience measures proposed as part of the description of the Proposed Development shall be identified.

Archaeology

- 250** This section of the Scoping Report identifies potential impacts within regard to below ground archaeology that may occur during the demolition/construction and operation of the Proposed Development. Above ground heritage assets will be assessed separately in **ES Volume 2: Townscape and Visual Impact Assessment** of the ES. The effects to be considered within the Archaeology ES chapter are concerned with the effects of the Proposed Development upon heritage significance and the ability to appreciate and experience the significance of a below ground heritage asset. The ES chapter will be supported by a technical appendix; an Archaeological Desk-Based Assessment (DBA).
- 251** The assessment will be undertaken in accordance with the requirements of the National Planning Policy Framework (NPPF, 2021) – specifically Section 16 ‘Conserving and Enhancing the Historic Environment’ and to standards specified by the Chartered Institute for Archaeologists and Historic England.

Baseline Conditions

- 252** The following section provides a summary of the methodology to be used for the baseline assessment which will inform the ES chapter, including methods and data sources that will be consulted. The DBA will make a consideration of below ground archaeological remains only and will not assess above ground-built heritage or indirect effects to built heritage assets (effects to significance through change within setting). Following the preparation of the DBA, the ES chapter will be produced outlining the baseline position and predicting the likely effects on heritage assets, based upon the final design proposals. Potential significant effects would be described in terms of their deviation from the archaeological baseline presented in the DBA.
- 253** The following sections present the sources and guidance to be used for the DBA, which will be carried through to the ES chapter.

Study Area

- 254** A 1km study area buffered from the site boundary of the Proposed Development will be adopted for buried archaeological assets. Baseline conditions will be established through desk-based review of publicly accessible sources of primary and synthesised information pertaining to the archaeological resource. The study area has been determined through professional judgement and is considered sufficient to provide a context for the discussion and interpretation of the known and potential archaeological resource.

Sources

- 255** In order to determine the full archaeological potential of the site, a broad range of standard documentary and cartographic sources, including results from any archaeological investigations in the site and the study area around it will be examined in order to determine the likely nature, extent, preservation and significance of any known or possible buried heritage assets that may be present within or adjacent to the site.
- 256** The following publicly accessible sources of primary and synthesised information will be used to inform the desk-based assessment and will be revisited to ensure that up to date information is used to inform the ES:
- The National Heritage List for England (NHLE), which is the only official and up to date database of all nationally designated heritage assets;
 - The Kent Historic Environment Record (KHER), comprising a database of recorded archaeological sites, find spots, and archaeological events within the county;
 - Local, regional and national research frameworks;
 - National heritage datasets including Archaeological Data Service (ADS), Heritage Gateway, OASIS, PastScape and the National Record of the Historic Environment Excavation Index;
 - Historic manuscripts, surveyed maps, and Ordnance Survey maps available at the Kent History and Library Centre;
 - LiDAR Imagery and Aerial Photographs; and
 - Relevant primary and secondary sources including published and unpublished archaeological reports relating to excavations and observations in the vicinity of the site.
- 257** In addition, a site visit will be undertaken which aims to assess the general character, condition and setting of the site and to identify any prior impacts not evident from secondary sources. As well as the identification of any previously unidentified features of archaeological or historic interest.

Relevant Guidance

- 258** In addition to the relevant National and Local Planning Policy a number of guidance documents will be used for the Archaeology chapter of the ES:
- Standards and Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists (CIfA) 2020)³³;
 - Principles of Cultural Heritage Impact Assessment in the UK (IEMA, IHBC & CIfA 2021)³⁴;
 - Statements of Heritage Significance: Analysing Significance in Heritage Assets, Historic Environment Good Practice Advice in Planning Note 12 (Historic England 2019)³⁵;
 - Managing significance in Decision-Taking in the Historic Environment, Historic Environment Good Practice Advice in Planning: 2 (Historic England 2015)³⁶;

³³ CIfA 2020, *Standards and guidance for historic environment desk-based assessment*. Available at: <http://www.archaeologists.net/codes/ifa>

³⁴ IEMA, IHBC & CIfA 2021, *Principles of Cultural Heritage Impact Assessment in the UK*. Available at: https://www.archaeologists.net/sites/default/files/j30361_iema_principlesofchia_v8.pdf

³⁵ Historic England 2019, *Statements of Heritage Significance: Analysing Significance in Heritage Assets, Historic Environment Good Practice Advice in Planning Note 12*. Available at: <https://historicengland.org.uk/images-books/publications/statements-heritage-significance-advice-note-12/heag279-statements-heritage-significance/>

³⁶ Historic England, 2015. *Managing Significance in Decision-Taking in the Historic Environment, Historic Environment Good Practice Advice in Planning: 2*. Available at: <https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking/gpa2/>

- The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (amended 2018, 2019, 2020)³⁷;
- South East Research Framework (SERF-Kent County Council 2019)³⁸;
- Scheduled Monuments & nationally important but non-scheduled monuments (Department for Culture Media & Sport (DCMS) 2013)³⁹;
- Specification for a Standard Desk-Based Assessment and Walkover Survey, Manual of Specifications Part B (Kent County Council)⁴⁰; and
- Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (Historic England 2008)⁴¹.

Designated Archaeological Assets

- 259** There are no designated archaeological assets within the site. However, there are a small number of designated archaeological assets within the study area.
- 260** 80m to the south of the site boundary is the Scheduled Monument 'Aspdin's Kiln' (1004227) which is thought to be the oldest Portland Cement Kiln in the world and is a well-preserved example of a downdrought kiln used in the production of cement. As this asset survives above ground, this is considered as a built heritage asset within **ES Volume 2: Townscape, Visual and Built Heritage Impact Assessment** and will not form part of the assessment of archaeology within the Archaeology Chapter of the ES.
- 261** Located 270m and 580m to the south-east of the site are Sites A and B of the Palaeolithic Sites near Bakers Hole Scheduled Monument. The scheduled areas are known to contain a suite of lower and middle palaeolithic deposits which infilled the Ebbsfleet Valley and comprise a mixture of fluvial, colluvial and solifluction deposits that lay between 5-15m AOD. Site A survives as below ground archaeological deposits however Site B exists as a small island of deposits in an area that has been quarried. Whilst this does exist above ground in the context of the surrounding quarried area, this is still considered as below ground archaeological remains. The Scheduled Monuments are also located within a Site of Special Scientific Interest designation (SSSI), and whilst this is not strictly a heritage designation, the reason for the designation of this part of the SSSI is due to the quaternary geological deposits. The Palaeolithic deposits at Bakers Hole are considered to be of at least national significance.
- 262** Scheduled Monument 'Neolithic Sites at Ebbsfleet' is also comprised of two scheduled areas, one located 1km to the south of the site and the other located 1.4km to the south of the site (as one part of the monument is within 1km it is considered part of the study area). The two scheduled areas represent two areas which have been archaeologically investigated which found remains dating to the Mesolithic and Neolithic periods. The deposits identified at these locations are considered to be more widespread than the scheduling suggests. The remains recorded include a Mesolithic working floor with associated flint artefacts and Neolithic artefact bearing horizons and other occupational evidence within the

³⁷ *Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (amended 2018, 2019 and 2020).*

Available at: <https://www.legislation.gov.uk/uksi/2017/571/contents/made>

³⁸ *Kent County Council, South East Regional Research Framework.* Available at: <https://www.kent.gov.uk/leisure-and-community/history-and-heritage/south-east-research-framework>

³⁹ *DCMS 2013, Scheduled Monuments & nationally important but non-scheduled monuments.* Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/249695/SM_policy_statement_10-2013__2_.pdf

⁴⁰ *Kent County Council (undated), Specification for a Standard Desk-Based Assessment and Walkover Survey, Manual of Specifications Part B*

⁴¹ *Historic England, 2008, Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment.* Available at: <https://historicengland.org.uk/images-books/publications/conservation-principles-sustainable-management-historic-environment/conservationprinciplespoliciesandguidanceapril08web/>

Holocene alluvium with an assemblage of Ebbsfleet Ware pottery discovered at one of the Sites. Later investigations also revealed horizontal waterlogged timbers of Neolithic date.

Non-designated Archaeological Remains

- 263** A large number of geoarchaeological investigations have been undertaken within the vicinity of the site particularly in relation to the High Speed 1 (HS1) route. It should also be noted that a Roman Kiln was recently found on the development to the west of the Proposed Development. Within the central and southern part of the Swanscombe peninsula sequence of Pleistocene gravels belonging to the Shepperton Gravel Member was overlain by Holocene deposits. The Holocene deposits comprise alluvial sediments forming part of the Thames floodplain sequence of deposits encountered widely across the Lower Thames Estuary. The Thames floodplain deposits comprise a range of sediments that have variously accumulated over the last approximately 11,500 years under the influence of rising post-glacial sea-levels. Geoarchaeological work to the south along the line of HS1 identified a variable sequence of peats and alluvium, with between one to three peats recorded along the route, including a thick peat consistently present in boreholes across the peninsula. Peat deposits along the line of HS1 produced radiocarbon dates from the late Mesolithic date to Bronze Age.
- 264** Investigations on Broadness Marsh at the tip of the Swanscombe peninsula identified a sequence of alluvial silty clays interbedded with three peat layers overlying Pleistocene sands and gravels at -9.5m OD. The peats dated from the late Mesolithic to Late Bronze Age; the second peat layer was recorded up to 2m thick, with thinner basal and upper peats.
- 265** Palaeolithic finds have been recorded within the immediate vicinity of the site including a large palaeolithic blade from Botany Bay pit recorded at the eastern boundary of the site and another two palaeolithic blades recorded at the Northfleet Cement Works to the south. A large number of finds have been recorded in the wider area most of which were discovered during extensive quarrying in the 19th and 20th centuries. No other prehistoric finds are recorded within or immediately adjacent to the Site although prehistoric flints are recorded close to Ebbsfleet Station and Bronze Age finds are recorded on the eastern side of the HS2 line as being from the Ebbsfleet Valley. Adjacent to the course of the river Ebbsfleet to the south of the study area two areas are scheduled for prehistoric remains including a Mesolithic 'working floor' and waterlogged remains dating to the Neolithic period.
- 266** Bronze Age evidence within the surrounding area includes a wooden trackway across the marshland on the Swanscombe peninsula, as well as a hoard which was dredged from the Thames off of the peninsula. The practice of depositing metal objects within rivers or water environments began in the Bronze Age and is thought to have been done for religious or ritual reasons. A Bronze Age wooden fish trap was also found close to Ebbsfleet Station. Other Bronze Age evidence close to Ebbsfleet Station comprised a buried surface consisting of a layer of cobbles on top of a layer of wood and peat.
- 267** The focus of activity during the Iron Age and early Roman period further south of the site close to the modern A2 road at Springhead, at what was the head of the Ebbsfleet at the time. The area had a ritual focus in the Iron Age with a number of ritual pits and a processional way and terrace. The presence of the Spring at Springhead is thought to have been the origin of the ritual activity in this area. The ritual focus continued into the Roman period with a town and sanctuary complex consisting of a number of temples constructed, as well as the Roman road (A2) and a number of cemeteries. Away from this focus of activity at the A2/Springhead, a Roman Villa was constructed at Northfleet to the east of the modern Ebbsfleet Station. This was preceded by a timber building, with the masonry building constructed around AD120. Evidence for activities such as brewing, quarrying and limeburning were present as well as a bath house and a quay for river access. The villa continued in use until 380AD when it is thought to have been abandoned.

- 268** During the investigations for HS1 close to Ebbsfleet Station a total of nine sunken featured buildings were discovered of Anglo-Saxon date as well as an Anglo-Saxon watermill. Substantial timber remains of a mid-Saxon tidal mill were discovered as well as associated features including a spillway, revetments and sluice gates all dating to the end of the 7th century. The mill was sat upon a sand bank at the edge of the Ebbsfleet, with a mill pond to the south fed by the Ebbsfleet; the mill was accessed by a causeway. Anglo-Saxon cemeteries were found further south at Springhead.
- 269** A settlement is recorded in the Domesday Book of 1086 at Northfleet. The name Northfleet refers to the north creek/inlet and is recorded as *North Fleot* in Old English, *Flyote* in 975, *Norflvet* in 1086, *Nortfliete* in 1176 *Northflet* in 1201 and Northfleet from 1610. Comparative to earlier periods there is little archaeological evidence dating to the medieval and post-medieval period which may reflect the relative isolation of Northfleet at this time.
- 270** Plans for a naval dockyard called Northfleet Dock were laid on the Swanscombe Peninsula in 1811 although these plans were never realised. The plans included two wet docks, a ropery, storage buildings, a gun wharf, eight ship building slips 12 dry docks and a victualing yard. The area proposed for the dockyard included the Site. By the end of 1815 the plans had been abandoned with available funds spent on improving the existing dockyards in Kent.
- 271** Since the late 19th century Northfleet, Swanscombe and the Ebbsfleet Valley have had an industrial focus as it was located at an ideal spot, where extractable chalk was close to the navigable Thames estuary. As a result, one of Britain's largest chalk extraction and cement making centres formed at Swanscombe and Northfleet and grew exponentially between 1895 and 1970. In 1796 James Parker's cement works at Northfleet patented 'Roman Cement' which was a water-resistant product but slightly weaker than later cement products. In 1811 James Frost produced his cement 'Portland Cement' using similar ingredients to the Roman cement at his works in Swanscombe. In 1824 Joseph Aspdin, who had works at Northfleet patented 'Portland Cement'. By the 1840s a rivalry had developed between the Swanscombe and Northfleet works as both were producing Portland Cement. In the 1850s the Sturge family are known to have set up a cement works at Northfleet adjacent to Aspdin's Works. The Sturges took on partners Bevan and Knight and became known as Knight, Bevan and Sturge. By the 1870s Bevan had sole control of the company. At the turn of the 20th century 27 cement manufacturers merged to form the Associated Portland Cement Manufacturers Ltd (ACPM). This also coincided with the introduction of the rotary kiln (rather than the bottle or beehive kilns) which sped up production. By this time all the available space along the riverfront was taken up by the cement industry. Historic mapping shows the Portland Cement Works to have extended within the Site.

Sensitive Receptors

- 272** The potential receptors have been identified as follows:

- Potential Geoarchaeological deposits;
- Potential Palaeolithic deposits;
- Remains associated with the Portland Cement Works; and
- As yet any unknown archaeological remains.

Potential Effects

- 273** An assessment of potential effects of the Proposed Development with respect to Archaeology will be undertaken and presented in the Archaeology ES chapter. Effects to the archaeological resource can be direct or indirect as explained below.

Direct Effects

- 274** Direct Effects on heritage assets arise from physical damage or disturbance which gives rise to a loss of heritage significance. These could range in significance from nationally significant to locally significant.

Indirect Effects

- 275** Indirect Effects are those which result in potential change to heritage significance but do not give rise to physical damage or disturbance to an asset. In this context, these effects will generally arise through change to the setting of an asset.

Demolition and Construction

- 276** For the demolition/construction phase, direct effects to archaeological remains/deposits could arise through physical impacts such as ground disturbance for preliminary site set up works including the construction of working areas and compounds, construction of foundations for new buildings (including piling), new roads and infrastructure, enabling works, hard and soft landscaping and any other ground works including temporary works. In addition, potential direct effects could arise through changes to water levels within the site which has the potential to affect waterlogged remains with Palaeoenvironmental potential. Changes to the water levels have the potential to result in the drying out of waterlogged remains leading to a degradation of these deposits and a loss of archaeological significance. There are no basements associated with the Proposed Development, so no deep excavations are anticipated.
- 277** There are not expected to be any indirect effects to buried archaeological remains during the construction phase as a result of the Proposed Development.

Completed Development

- 278** An assessment of operational phase effects will be scoped out on the basis that once the Proposed Development has been completed, no further ground disturbance would occur and consequently there would be no additional impacts or resulting effects upon buried heritage assets.
- 279** There are not expected to be any indirect effects to buried archaeological remains as a result of the Proposed Development during the operational phases.
- 280** Table 11 below presents the proposed scope of the assessment.

Table 11 Proposed Scope of Assessment

Element	Phase	Scoped In	Scoped Out	Justification
Demolition/construction effects (buried heritage assets)	Demolition and construction	✓		There is the potential for significant effects on buried heritage assets during demolition/construction works.
Operational effects (buried heritage assets)	Operation		✓	There are not expected to be any operational effects upon buried archaeological remains, as construction activities will have been undertaken and suitable assessment and mitigation measures put in place.
Cumulative effects (buried heritage assets)	Construction and Operation	✓		Cumulative effects are in-combination effects which occur on a discrete and significant shared heritage asset/resource. Due to the nature of the potential archaeological deposits within the site (Palaeolithic and Palaeoenvironmental deposits) which can cover a large area, a cumulative assessment will be included within the ES chapter, as developments in the surrounding area have the potential to affect the same/similar deposits to the Proposed Development.

Assessment Methodology and Significance Criteria

281 The ES chapter will set out the planning framework in respect of buried heritage assets (archaeological remains) along with the methodology for assessing the environmental effects predicted during the demolition/construction phase. It will provide a summary overview of the baseline conditions.

282 The assessment of potential effects on buried heritage assets in the ES will include:

- Identifying known and potential buried heritage assets that may be affected by the Proposed Development;
- Evaluating the significance of buried heritage assets, based on existing designations and professional judgement. This will consider factors which may have affected asset survival;
- Predicting the magnitude of change (impact) upon the known or potential heritage significance of buried heritage assets during the demolition/construction phase and the likely resulting significance of environmental effect;
- Consideration of any additional mitigation measures (over and above those already embedded within the Proposed Development design) that may be required to avoid, prevent, reduce or, if possible, offset any likely significant adverse effects; and
- Quantifying any residual effects (those that might remain after mitigation).

Proposed Significance Criteria

283 The importance of heritage assets is analogous to sensitivity and is considered in relation to statutory designations and the priorities and recommendations set out in national research agenda. Historic England's guidance on Managing Significance in Decision Taking in the Historic Environment (Historic England 2015), and the interests defined in NPPG which make up the significance of a heritage asset (NPPF 2021 Glossary; significance for heritage policy; archaeological interest, historic interest and NPPG 2019; architectural and artistic interest), along with professional judgement, will be used to determine the importance/sensitivity of the resource. This will involve an assessment of the specific heritage values of each heritage asset to be affected by the development. In addition to the above the following table will be used as a guide to determine importance/sensitivity for buried archaeological remains.

Table 12 Examples of Heritage Significance of Designated and Non-Designated Buried Heritage Assets

Buried heritage asset description	Significance
World heritage sites which are internationally important Scheduled monuments of acknowledged international importance Undesignated heritage assets of high national importance	Very High
Scheduled Monuments and undesignated assets of schedulable quality and importance Archaeological assets that can contribute significantly to acknowledged national research objectives Known submerged prehistoric sites and landscapes with the confirmed presence of largely in situ artefactual material. Palaeographic features with demonstrable potential to include artefactual and/or palaeoenvironmental material, possibly as part of a prehistoric site or landscape.	High
Designated or undesignated archaeological assets that contribute to regional research objectives Prehistoric deposits with moderate potential to contribute to an understanding of the Palaeoenvironment Local Authority designated sites. Previously unknown and undesignated sites that would justify Local Authority designation (i.e., sites of regional importance). Sites with specific and substantial importance to the local community.	Medium
Archaeological assets of limited value, but with potential to contribute to local research objectives	Low

Buried heritage asset description	Significance
Assets with little or no surviving archaeological interest Sites or features that are so badly damaged that too little now remains to justify their inclusion in a higher grade.	Negligible
The importance of the archaeological resource cannot be ascertained due to limited existing information; therefore, the value of the resource is classified as ranging from High to Low importance/sensitivity.	Unknown

Assessment of Magnitude of Impact

284 The assessment of magnitude of impact is the identification of the degree of the effect of the scheme upon the significance of the historic environment resource. The impact can be beneficial or adverse and the magnitude is ranked without regard to the importance/sensitivity of the asset. **Table 13** below provides a guide for assessing the magnitude of impact in respect of the historic environment resource.

Table 13 Assessment Criteria for Determining the Magnitude of Impact

Magnitude		Criteria
Very High/High	Adverse	Major physical damage to or significant alteration to a site or feature
	Beneficial	Large scale of major improvement of a heritage asset, extensive restoration or enhancement, major improvement in attribute quality
Medium	Adverse	Damage or alteration to a site or feature. Encroachment on an area considered to have high archaeological potential
	Beneficial	Benefit to, or addition of, key characteristics, features or elements or improvements of a heritage asset
Low	Adverse	Minor damage or alteration to a site or other feature. Encroachment on an area where it is considered that low archaeological potential exists.
	Beneficial	Minor benefit to features or elements, some beneficial impact on heritage asset or a reduction in the risk of negative impact occurring
Negligible	Adverse	Very minor changes to archaeological remains
	Beneficial	Very minor benefit
No change		No change would be perceptible either positive or negative

Determination of Significance of Effects

285 The assessment of the significance of an effect on a heritage asset is largely a product of the heritage significance of an asset and the magnitude of the impact that might give rise to harm (or perhaps beneficial change), qualified by the application of professional judgement. An assessment of effects on a heritage asset involves an understanding of the heritage significance of the asset. The effect being assessed is whether the asset loses (or gains) significance as a result of development. Planning policy recommends that the level of detail should be proportionate to the heritage significance of the assets and no more than is sufficient to understand the potential impact of the proposal.

286 The significance of effects of the demolition/construction of the Proposed Development will be assessed and residual effects will be assessed taking into account mitigation measures where proposed.

Cumulative Effects

- 287** The ES chapter will include an assessment of cumulative effects of the Proposed Development upon the archaeological resource in conjunction with other surrounding developments. A list of cumulative developments has been prepared which will be considered in relation to the Proposed Development and the following schemes will be included within the cumulative assessment which lie within 500m of the site;
- The London Resort (BC080001) which will be assessed qualitatively, as noted in the *Cumulative Effects with Other Developments* section of this Scoping Report;
 - Land Adjacent to Northfleet Harbour Grove Road, Northfleet (EDC/21/0102); and
 - Land North of Hive Lane, Northfleet Embankment West (EDC/21/0081).
- 288** Cumulative effects of the Proposed Development together with other schemes will be undertaken using the methodology outlined above for both direct and indirect effects.

Ecology and Biodiversity

Introduction

- 289** An ecological impact assessment will be undertaken, to determine the potential effects of the Proposed Development on ecological features and an ES chapter prepared to present the findings of this assessment. The ecology assessment will be completed by Schofield Lothian.
- 290** It is considered that significant effects to on site ecology and biodiversity are unlikely, however indirect adverse impacts on surrounding designated sites due to the Proposed Development are likely and as such this topic is 'scoped in' to the EIA. This assessment will be undertaken by Schofield Lothian.
- 291** A Preliminary Ecological Appraisal (PEA) was undertaken in May 2022 by Schofield Lothian and is included in **Annex C: Preliminary Ecological Appraisal**. This comprised a desk study, and an extended Phase 1 Habitat Survey which included a protected species assessment and ecological evaluation of the existing habitats within the red line boundary.
- 292** The identification and evaluation of Important Ecological Features (IEFs) for the purposes of Ecological Impact Assessment (EclA), and the assessment of significant adverse or beneficial effects on IEFs, will be undertaken with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) 'Guidelines for Ecological Impact Assessment in the UK and Ireland, September 2018 (Version 1.1, updated September 2019).

Data Sources

- 293** The data searches were conducted with the Zone of Influence (ZoL) in mind. The ZoL is the area over which the ecological features identified may be subject to significant effects because of the Proposed Development. These will vary between ecological receptors.
- 294** A data search was requested from Kent & Medway Biological Records Centre, to obtain information on non-statutory designated sites and protected species within 2km of the site.
- 295** A desk-based search was undertaken using Multi-Agency Geographic Information for the Countryside (MAGIC), to obtain information international statutory sites within 5km and national statutory sites within 2km of the site.

296 Impact Risk Zones (IRZs) were located and assessed using MAGIC maps⁴². IRZs are a tool developed by Natural England to help assess the potential risks to Nationally or Internationally Designated Sites of Nature Conservation Importance posed by development proposals.

297 The PEA took account of the following best practice:

- Guidelines for Preliminary Ecological Appraisal. CIEEM 2017¹;
- Guidelines for Ecological Report Writing. CIEEM 2017²;
- Guidelines for Accessing and Using Biodiversity Data in the UK. CIEEM 2016³;
- Combined Ecological Impact Assessment Guidelines. CIEEM 2018⁴; and
- Joint Nature Conservation Committee Handbook for Phase 1 habitat survey. A technique for Environmental Audit. 2010⁵.

Baseline Conditions

298 The site is considered to have low ecological value due to the habitats identified on-site. Habitats on site with negligible ecological value include buildings, hardstanding and small isolated stands of ephemeral vegetation. Habitats on site with low ecological value include, amenity grassland, introduced shrub and scattered trees, species-poor hedgerow with trees, standing water and sea wall.

299 A desk-based search shows that there are five sites with National statutory designation within the 5km of the site:

- Swanscombe Peninsula Site of Special Scientific Interest (SSSI) located adjacent to the north-west of the site. This was granted SSSI status in November 2021;
- Swanscombe Skull Site National Nature Reserve (NNR and SSSI) located 1.3km to the south-west of the site;
- Swanscombe Marine Conservation Zone (MCZ) located 1.2km to the north-west of the site;
- West Thurrock Lagoon and Marshes SSSI located 2.4km to the north-west of the site; and
- Lion Pit SSSI located 2.8km north-west of the site.

300 The Proposed Development is located within the Impact Risk Zone for Swanscombe Peninsula and West Thurrock Lagoon and Marshes.

301 The nearest Internationally statutory designated site to the Proposed Development is Thames Estuary & Marshes Ramsar and Special Protection Area (SPA), is located 5.7km to the east of the site.

302 A desk-based search based on Kent & Medway Biological Records Centre shows that there are three local wildlife sites and one Site of Importance for Natural Conservation (SINC) within the ZoL:

- GR19 Botany Marshes (adjacent to the north-west of the site – forms part of the Swanscombe Peninsula SSSI)) – habitats include, significant areas of wet grassland, reedbed and, notable areas of salt marsh, exposed mud and sheltered riparian habitats;
- GR05 Ebbsfleet Marshes (50m south of the site) - Habitats include grassland, marsh, scrub, the River Ebbsfleet and a large, flooded quarry to the north-east known as 'blue lake'. This Local Wildlife Site (LWS) was first notified in 1985, but since then the construction of the Channel Tunnel Rail Link, Ebbsfleet International Rail Station and its associated parking has caused severe fragmentation of the LWS;
- DA13 Alkerden Lane Pit (1.5km west of the site) - Habitats include grassland, scrub, woodland and an inland cliff. The site was mainly designated for supporting nationally and county scarce plant species including narrow-leaved everlasting pea *Lathyrus sylvestris*, a relict population of

⁴² DEFRA, MAGIC Maps; <https://magic.defra.gov.uk/magicmap.aspx>

yellow vetchling *Lathyrus aphaca* and the county's largest population of green-flowered helleborine *Epipactis phyllanthes*. An area of former landfill on the site is also known to support a rare assemblage of invertebrates including at least one UK Biodiversity Action Plan (BAP) species⁴³; and

- M031 River Thames (which borders the site to the north-east) - The River Thames and the tidal sections of creeks and rivers which flow into it comprise a number of valuable habitats not found elsewhere in London.

Key Findings

- 303** During the extended Phase 1 habitat survey, the potential of the site to support or impact designated sites, invertebrates, birds (nesting, overwintering and foraging), bats, other mammals and invasive species was reviewed. An assessment was also made to understand whether the site could support features associated with Swanscombe Peninsula SSSI and potentially impact them.
- 304** The trees and buildings on-site did not support any potential roosting features for bats; therefore, trees and buildings on-site are defined as having negligible potential to support roosting bats in accordance with the Bat Conservation Trust criteria⁷.
- 305** No further bat surveys are recommended due to the lack of bat roosting features present on site. The habitats are not considered suitable for key foraging or commuting routes for bats given the lack of vegetation and amount of lighting present.
- 306** The site offers potential to support Schedule 1 bird species in habitats, as well as immediately adjacent to the site along Robin's Creek and within the mudflats of the River Thames.
- 307** Suitable habitat was observed during the extended Phase 1 habitat survey for black redstart (*Phoenicurus ochruros*) to nest on site and suitable nesting habitat. Habitat surrounding the site was deemed suitable for little ringed plover (*Charadrius dubius*), Cetti's warbler (*Cettia cetti*) and Mmarsh harrier (*Circus aeruginosus*).
- 308** During the extended Phase 1 Habitat Survey a range of waterbirds were seen foraging on the mudflats next to the site including shelduck (*Tadorna tadorna*) along with herring gull (*Larus argentatus*), black headed gull (*Chroicocephalus ridibundus*), shoveler (*Anas clypeata*) with young, and mallard (*Anas platyrhynchos*). The gravel beach area is suitable for nesting little ringed plover (a Schedule 1 species).
- 309** A variety of birds were observed on and around the site, suggesting possible nests. Removal of trees and the shrub vegetation in the nesting bird season could impact active nests and cause a legal offence. Loss of the trees and shrubbery would have the potential to result in the loss of nesting bird habitat.
- 310** In regards, to invasive species, Japanese knotweed (*Fallopia japonica*) was found on site.
- 311** The mudflats could support macroinvertebrates that would provide feed for important bird species associated with Swanscombe Peninsula SSSI.
- 312** Table 14 below details findings on ecological note below.

Table 14 Ecological Findings on Site

Feature	Likelihood of Occurrence	Rationale
Designated Sites – Statutory and Non-Statutory		
Designated sites	Present (adjacent to the Proposed Development site)	Further screening is needed to assess the impact on the SSSI of Swanscombe Marsh. This includes further assessment of the intertidal mudflats which may be of importance as foraging habitat for the birds of the SSSI.

⁴³ Also described as Species and Habitats of Principal Importance for Conservation in England, or 'priority habitats' and 'priority species' under the UK Post-2010 Biodiversity Framework.

Feature	Likelihood of Occurrence	Rationale
BAP Priority Habitats		
Mudflats	Present (adjacent)	Mudflats present adjacent to the north-east boundary of the site. Potential indirect impacts.
Birds		
Nesting Birds	High	A wide range of passerine bird species were recorded in the desk study. The habitats could support local assemblages of birds which might use the buildings and vegetation to nest within.
Schedule 1 Birds	High	Suitable habitat for black redstart to nest on site and suitable nesting habitat surrounding the site for little ringed plover, Cetti's warbler and marsh harrier.
Invasive Species		
Japanese Knotweed	High	A significant area of Japanese knotweed (<i>Fallopia japonica</i>) is present on the south area of the site.

Potential Important Ecological Features

313 Important ecological features (IEFs) that will be considered in the ecological assessment include, but are not limited to, the following:

- Swanscombe Marsh SSSI (incorporating Botany Marshes LWS) - National;
- Ebbsfleet Marshes LWS - Local;
- River Thames SINC - Metropolitan;
- Nesting bird habitat - Local;
- Schedule 1 birds (including little ringed plover and black redstart) - National.
- Aquatic invertebrates within the mudflat habitat – County

314 The remaining non-statutory designations are not considered to be affected by the Proposed Development and have been scoped out of the EclA as an IEF owing to their spatial separation and/or lack of ecological connections with the Proposed Development.

Further Surveys

315 In relation to the SSSI designation, the assessment will consider carefully the direct effects of disturbance to breeding and non-breeding birds within the designated site, as well as the indirect effects of modification of functionally-linked land that birds use within the site that is outside the SSSI site. The ES will include a detailed assessment of the potential indirect impacts on the SSSI.

316 Schedule 1 birds were observed on site, therefore further breeding bird surveys are needed to determine if there are any Schedule 1 birds nesting in this area. Wintering bird surveys will also be undertaken.

317 Bird surveys undertaken in both summer and winter periods will capture which Schedule 1 birds are using the site and adjacent habitats, including black redstarts which were recorded within 1km of the site.

318 The BAP Priority mudflat habitats have the potential to support aquatic invertebrates. Information gathered from the bird surveys should provide detail on the quality and quantity of aquatic invertebrates and their importance as a food resource for birds. Further information gathered as part of nearby planning applications will be reviewed to understand aquatic invertebrates present in the mudflats.

- 319** In line with industry guidance and optimal best practice surveying periods, three surveys will be undertaken in summer 2022 and three further surveys will be undertaken in winter 2022, the winter surveys can be undertaken post submission and results provided during the determination period.
- 320** Recent protected species surveys have been undertaken as part of the London Resort application, the survey data gathered will be disseminated and reviewed to provide further detail on the potential impacts the Proposed Development will have on IEFs associated with Swanscombe Peninsula SSSI.

Determining Significance

- 321** In accordance with the CIEEM guidelines, a significant effect, in ecological terms, is defined as 'an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features''
- 322** The term 'integrity' is used in accordance with the definition adopted for designated sites, as the "...coherence of ecological structure and function...that enables it to sustain the habitat, complex of habitats and/or levels of populations of species for which it was classified". For non-designated sites/species this can be amended to "the coherence of ecological structure and function, that enables it [in this case, the area being considered, e.g., region] to maintain the levels of populations of species in its/their pre-development condition". Maintaining integrity therefore refers to the maintenance of the conservation status of a habitat or species population at a specific location or geographical scale.
- 323** The approach adopted will aim to determine whether an effect is significant or not significant on the basis of a discussion of the variables that characterise it. The significance of an effect is linked to the geographical scale at which the receptor is valued but does not necessarily depend on the value of the receptor or its legal protection.

Preliminary Assessment of Potential Effects

- 324** The assessment of likely potential effects considers those construction activities related to the Proposed Development, as well as those related to its operation.
- 325** In the absence of mitigation, the potential effects during the construction phase on the IEFs identified above are described below:
- Killing, injury and disturbance of wild animals;
 - Indirect impact to habitats via degradation / damage;
 - Increased dust, noise and vibrations;
 - Hydrological effects;
 - Pollution / contamination incidents;
 - Spread of invasive species.
- 326** In the absence of mitigation, the potential effects during the operational phase on the IEFs identified above are described below:
- Indirect impact to habitats via degradation / damage;
 - Hydrological effects;
 - Damage or degradation to habitats and disturbance of wildlife through increased recreational pressure and trampling
 - Potential positive benefit through provision of habitats with greater biodiversity value than those currently present and via creation of ecological connectivity across the Proposed Development site.

Cumulative Effects

- 327** The ES chapter will include an assessment of cumulative effects of the Proposed Development upon ecological designations in conjunction with other surrounding developments which have planning permission / resolution to grant or are within the planning system and yet to be determined (Tier One). A Tier-Two cumulative assessment will consider the Proposed Development along with the Tier One schemes identified and Tier-Two schemes.
- 328** It should be noted that legislation and planning policy require nearby schemes to avoid or mitigate negative impacts and planning policy requires schemes to avoid or mitigate negative impacts which in theory should reduce cumulative impacts to a level that is non-significant.

Mitigation and Enhancement Measures

- 329** The PEA (**Annex C: Preliminary Ecological Appraisal**) highlights a number of ecological enhancement and mitigation measures which could be implemented within the Proposed Development to limit adverse effects to ecological receptors.
- 330** A full range of ecological enhancements will be presented in **ES Volume 1, Chapter 4: Proposed Development**.

Compensation for Cumulative Effects on Swanscombe Peninsula SSSI

- 331** The following measures are proposed to reduce recreational pressure from the Proposed Development in-combination with the London Resort project to a level that is non-significant:
- Pollution measures should be incorporated into a Construction Environmental Management Plan (CEMP).
 - Access should be managed appropriately from the Proposed Development into the SSSI, for example protective hoarding could be erected to reduce pedestrian footfall to the north-west of the site;
 - Brown and green roofs will be provided in the Proposed Development with a clear aim for wildlife benefit rather than human activities with bug hotels, log piles and refuges incorporated.
 - Further woodland belt and hedgerow (native) planting to provide additional screening along the SSSI boundary. Ideally this habitat will be created prior to the construction to add further protection to the SSSI
 - SANGs will be incorporated into the design to provide appropriate levels of green space for residents from the Proposed Development to use.
 - Contributions to the management of the SSSI (in the form of payments) could be provided if deemed necessary. These payments would support further management and protection of ecological features within the SSSI.
- 332** Both projects in-combination have the potential to appropriately manage recreational disturbance to a level that is not significant by enhancing and expanding the current ecological features associated with the SSSI and to increase the ecological connectivity from the SSSI to the wider area.

Future Baseline Conditions

- 333** The CIEEM (2018) guidelines on Ecological Impact Assessment explain that predicting the future baseline of the site should take into account environmental trends such as climate change, particularly in regard to species on the edge of their natural range, where their distribution is changing as a result of changes in climate (i.e. increase in winter and summer mean and mean daily maximum/ minimum temperatures, an increase in winter mean precipitation and a decrease in summer mean precipitation).

- 334** The EclA will, therefore, use the latest climate models to consider the potential impacts of climate change on the predicated future baseline.

Ground Conditions and Land Contamination

- 335** It is considered that there is the potential for likely significant effects relating to ground conditions and land contamination and so this topic shall be 'scoped into' the EIA. The ground conditions assessment will be undertaken by RMA Environmental Ltd.

- 336** The ES shall:

1. Define the ground conditions baseline conditions;
2. Identify relevant ground conditions receptors;
3. Assess:
 - a. the potential for ground conditions impacts throughout the enabling and construction works
 - b. the potential for ground conditions impacts when the Proposed Development is completed and operational (likely to be limited to above ground assets only) as a result of the completed development and resultant ground conditions effects;
 - c. the likely significant ground conditions effects;
 - d. any required mitigation or monitoring to address any likely significant adverse ground conditions effects.

- 337** An overview of the baseline environmental conditions has been outlined below, along with the likely significant effects of the Proposed Development with regard to ground conditions. This analysis has been undertaken with reference to the following key policy and guidance documents:

- National Planning Policy Framework (NPPF) (2021)⁴⁴;
- Part 2A Environmental Protection Act (EPA; 1990)⁴⁵;
- Environment Agency Land Contamination Risk Management (LCRM) (EA, 2020)⁴⁶;
- Managing and Reducing Land Contamination: Guiding Principles (GPLC, EA 2016)⁴⁷;
- NHBC Part 4 Foundations – Chapter 4.1 Land Quality: Managing Ground Conditions (NHBC, 2021)⁴⁸; and
- Gravesham Local Plan Core Strategy (2014)⁴⁹; and other relevant planning policy and guidance documents.

Baseline Conditions

Soils and Geology Contamination

- 338** The site's baseline conditions will be established through a combination of desk study research and investigative work. This is an iterative process and therefore additional consultation with Gravesham District Council and relevant statutory consultee may be required.

- 339** A Phase 1 Land Contamination Assessment (LCA) will be undertaken for the site and will be submitted as part of the Environmental Statement. The LCA will include a review of a third party environment database search known as Groundsure Enviro Insight Report, and identifies historical and current land uses on site.

⁴⁴ Department for Communities and Local Government. (2021). *National Planning Policy Framework*

⁴⁵ Department for Environment, Food & Rural Affairs. (2012). *Environmental Protection Act 1990: Part 1 A. Contaminated Land Statutory Guidance*

⁴⁶ Environment Agency. (2020). *Land Contamination Risk Management (LCRM)*

⁴⁷ Environment Agency. (2016). *Managing and reducing land contamination: guiding principles (GPLC)*

⁴⁸ National House-Building Council. (2021). *Part 4 Foundations – Chapter 4.1 Land Quality: Managing Ground Conditions*.

⁴⁹ Gravesham Borough Council. (2014). *Gravesham Local Plan Core Strategy*.

- 340** There are a multitude of historical and current potentially contaminative land uses on site given the industrial nature of the site that dates back to the mid 1800s. Land uses on site have included (but are not limited to) cement works, a windmill, football ground, tramway and railway tracks, ponds, depots, industrial estates, electrical substations and garages. Given the extensive industrial land uses on site, the likelihood of contaminants such as metals, asbestos, Polycyclic Aromatic Hydrocarbons (PAHs) and other hydrocarbons cannot be ruled out. Similarly, there are a number of historic and existing potentially contaminative land uses within a 250m radius of the site including electricity substations, wharfs, historical tanks and depots.
- 341** There is the potential that asbestos is present within the current buildings on site and/or within the underlying soils given the previous land uses on site. There is no known record of any asbestos surveys that have been undertaken at the site but, given the ages of the buildings, the presence of asbestos cannot be ruled out.
- 342** According to the British Geological Survey (BGS) online viewer, the majority of the site is underlain by the superficial deposits of Alluvium comprising clay, silt, sand and gravel. The north-western boundary of the site is underlain by the superficial deposits of Head comprising clay, silt, sand and gravel. The site is entirely underlain by the bedrock geology of the Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation comprising chalk.
- 343** From reviewing the BGS 1:50,000 map series England and Wales Sheet 271 for Dartford, the site is located in an area of previously worked ground. The BGS map also shows that the Kempton Park Gravels are located beneath the Alluvium deposits underlying the site.
- 344** From reviewing BGS mapping, there is an available borehole record located in the centre of the site, (TQ67SW791) which was drilled to a depth of 21.34m. Groundwater was not recorded to be encountered within this borehole which had the following geological sequence:
- Drift (4.28 m thick); and
 - Chalk and flints (at least 17.06 m thick).
- 345** As reported within the Groundsure reports there are two British pit records in the northern extent of the site. These comprise of marine sand and gravel and crushed road. When reviewing the Gravesham Borough Council Mineral Safeguarding Areas map, which forms part of the Kent Minerals and Waste Local Plan, the site is located within the Gravesham Borough Council urban boundary/village confines and the Sub - Alluvial River Terrace Deposits Mineral safeguard area. The Mineral Safeguarding Areas cover the known locations of specific mineral resources that are (or may in future be) of sufficient economic value to warrant protection.

Hydrology and Hydrogeology

- 346** The River Thames, a 'main river'⁵⁰, is located along the north-eastern boundary of the site.
- 347** Ebbsfleet, another 'main river', flows in a northerly direction towards the River Thames and is culverted along the eastern boundary of the site.
- 348** Swanscombe Marshes are located directly north-west of the site and comprise areas of marshland and a number of local land drains.
- 349** Online EA data sources provide the hydrogeological information as summarised in **Table 15** below.

⁵⁰ Main river is defined by the EA as any watercourse that contributes significantly to the hydrology of a catchment.

Table 15 Aquifer Properties

Aspect	Designation	Description
Groundwater Source Protection Zone (SPZ)	Zone II – Outer Protection Zone	This zone is defined by the 400-day travel time from a point below the water table. Additionally, this zone has a minimum radius of 250 or 500 metres, depending on the size of the abstraction. The travel time is derived from consideration of the minimum time required to provide delay, dilution and attenuation of slowly degrading pollutants.
Superficial Aquifer Designation: Alluvium	Secondary Undifferentiated	These rock types have been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
Superficial Aquifer Designation: Head (north-western extent)	Secondary Undifferentiated	These rock types have been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
Superficial Aquifer Designation: Gravels	Secondary A Aquifer	These are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.
Bedrock Aquifer Designation: Chalk Formation	Principal Aquifer	These are layers of rock or drift deposits that have high intergranular and/or fracture permeability – meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

Sensitive Receptors

350 Relevant potential receptors to be considered during the demolition and construction and the operational phases include:

- Soils and geology;
 - Surface water (Ebbsfleet and River Thames);
 - Groundwater (likely to be located within the Kempton Park Gravels and Chalk);
 - Construction workers and service maintenance workers;
 - Future site users;
 - Landscaping and planting;
 - Adjacent site users; and
 - Infrastructure such as buried services.

Potential Effects

351 The likely significant environmental effects associated with the Proposed Development in relation to ground conditions are as follows:

- Surface water, groundwater and soil contamination from general construction-related activities;
- Surface water, groundwater and soil contamination from routine operation and accidental spillages;
- Remobilisation of any existing contamination during demolition and construction, such as piling for construction purposes;
- Potential for off-site users inhaling, ingesting or coming into dermal contact with windblown contaminated dust during construction;
- Potential for demolition/ construction workers, services maintenance staff or future site users coming into direct contact with contaminated soils;
- Potential contamination from routine site operations (e.g. drainage) and/ or accidental releases during the Proposed Development's operational life;

- Potential effects of existing ground conditions or any residual contaminants on infrastructure and construction materials for the development;
- Potential ground gas generation and/ or accumulation within lower levels of the development;
- Potential impact on minerals safeguarding beneath the site during the construction and operational phase.

Scope of Assessment

352 The ES chapter will identify and assess the effects of the Proposed Development on ground conditions, during both the demolition and construction works and once complete and operational. The potential effects on each receptor listed above will be assessed in the ES chapter and relevant mitigation measures will be included here necessary.

353 The assessment would cover the following scope:

- Review/confirmation of scope following receipt of the EIA Scoping Opinion;
- Review and update the findings of the Phase 1 Environmental Assessment to include consultation with the Environmental Health Officer (EHO) at Gravesham Borough Council and any additional information determined following the site visit. A review of any other relevant site investigation reports will be undertaken for the site. The Groundsure EnvironInsight report will be reviewed and used to provide an up to date conceptual-site-model and risk assessment within the ES chapter;
- Assessment of impacts in relation to the demolition and construction works, and once the Proposed Development is complete and operational;
- The significance of each potential impact will be assessed using an approach which is broadly based on the established methodology from the Transport Analysis Guidance (TAG) Environmental Impact Appraisal and the sensitivity of each receptor, magnitude of each impact and effect significance (adverse or beneficial) of each impact will determine whether mitigation measures will be required;
- Mitigation measures will be identified (where necessary) to reduce the impact and following this the residual impact can be identified; and
- Preparation of an ES chapter, including cumulative assessment, in relation to the likely environmental effects of the Proposed Development on Ground Conditions.

354 An assessment of the site against the safeguarding policies will be undertaken and form part of the planning statement, as well as a discussion within the ground conditions chapter when considering the impacts of the development on safeguarding the minerals beneath the site.

355 It is noted that the above provides a worst-case scenario, without the implementation of mitigation measures, which will be identified during the assessment process and will be discussed as appropriate within the ES.

Townscape, Visual and Built Heritage

356 The Townscape and Visual Impact Assessment (the 'TVIA') identifies the likely effects of the Proposed Development on townscape receptors and visual receptors. The TVIA will be prepared by Montagu Evans LLP.

357 It is considered that there is the potential for likely significant effects relating to townscape and visual receptors, and so this topic shall be 'scoped into' the EIA.

358 While the industrial legacy of the area is recognised, the site itself does not contain any statutory listed buildings or non-designated heritage receptors, nor is it located within a Conservation Area. Heritage receptors within the study area are Aspdin's kiln, a scheduled monument, two Palaeolithic sites, also

scheduled monuments, to the west and two structures, listed at Grade II, near the river front to the east. They are described below in the *Baseline Conditions* section.

- 359** For these heritage receptors no significant environmental effect is likely. Therefore, it is proposed that the heritage impact assessment is scoped out of the EIA. A separate standalone heritage impact assessment will be provided for the planning application. The reasoning is set out below in the *Baseline Conditions* section.
- 360** The TVIA will be presented in Volume 2 of the ES and sufficient signposts will be included within the main text of the ES (Volume 1), to ensure readers will be aware of the location of the TVIA.
- 361** The ES will:
1. Define the townscape and visual baseline conditions;
 2. Identify relevant townscape and visual receptors;
 3. Assess:
 - a. The potential for townscape and visual impacts throughout the demolition and construction works and as a result of the completed development and resultant townscape and visual effects;
 - b. The likely significant townscape and visual effects;
 - c. Any required mitigation or monitoring to address any likely significant adverse townscape and visual effects.
 - d. The potential for cumulative townscape and visual effects.
- 362** The TVIA will be prepared in accordance with current best practice guidance, relevant planning policy and the local plan evidence base. The nature, extent and significance of the effects will be determined in the context of standard guidance and methods of assessment.
- 363** The key issues to be addressed by the TVIA will be:
- Effects of the Proposed Development on the townscape as a resource in its own right, identified as specific Townscape Character Areas (TCAs); and
 - Effects of the Proposed Development on specific views and on the general visual amenity experienced by people (visual receptors) in the surrounding areas, represented though the selected viewpoints⁵¹.

Baseline Conditions

- 364** Townscape receptors will be identified through site observations, desk-based research and an understanding of the features which define the area, including its heritage receptors. There will be regard to documents published by Gravesham Borough Council ('GBC') which provide description of townscape character, such as conservation area appraisals, listing descriptions and other policy designations.
- 365** The proposed study area for townscape receptors would take in an area of 1km from the site boundary. This study area has been informed by a review of surrounding building locations and heights, topography, townscape features and an understanding of the scale of the Proposed Development.
- 366** The visual study area has not been defined in the same way. Viewpoints proposed for assessment have been informed by an analysis of the street structure and townscape character (i.e. where there is likely to be a direct line of sight), open spaces or other public areas.

⁵¹ The views in the assessment are treated as 'receptors' because they are the subject of consideration, although it is acknowledged that people are the 'visual receptors' in the strict sense of the term and that views only exist and matter because of the people who see them. The sensitivity of the view derives from consideration of the value of the view in combination with the range and susceptibility of the viewer/s. The judgements on value, susceptibility to change and overall sensitivity will be set out in the baseline assessment of each view.

367 The study area and method for its identification is considered to be reasonable and proportionate to the scale, nature and context of the Proposed Development. It is considered sufficient to understand the likely significant effects of the Proposed Development.

Sensitive Receptors

Townscape Receptors

368 An assessment has been made of the existing townscape of the site and surrounding area. This has been based on study of the historic development of the site and surrounding area with reference to relevant publications, and study of the present-day condition of the area based on site visits, a review of mapping, aerial photographs, and relevant publications.

369 This analysis has informed the division of the study area into townscape character areas i.e. geographical areas which have readily identifiable characteristics in common. The impact of the Proposed Development on these townscape character areas will then be assessed, informed by conclusions drawn from the views analysis.

370 Particular consideration has been given to the location of established industrial areas that will continue in this use following implementation of any forthcoming consent for the Proposed Development; the location of settled residential areas near the site edge, including those near Robinson Way and Station Road as well as to the southwest at Swanscombe within Dartford Borough Council; the character and appearance of Botany Marshes which forms part of the Swanscombe Peninsula SSSI; the River Thames and the long views that are afforded from areas to the north.

371 The criteria for assessing townscape receptors are based on a number of factors, including the designation of the townscape and individual features within it, as well as qualitative factors which are known to influence the perception of the townscape (e.g. the value of a view or TCA is likely to be higher if it overlooks/ includes important heritage assets).

372 The boundaries of the character areas are identified in **Annex D: TVIA Supporting Maps**.

Visual Receptors

373 The baseline description has identified individuals and/or groups of people within the area who will be affected by changes in the views, or 'visual receptors'. Viewpoints have been identified on the basis of the following methodology, and informed by extensive experience of projects for major development in the wider area around the site.

374 Four principal types of viewing locations have been considered:

- Views that have been identified as significant, by GBC or others, e.g. in relevant planning policy and guidance documents and Conservation Area appraisals;
- Other locations or views of particular sensitivity, including those viewpoints in which the Proposed Development may significantly affect the settings of heritage assets, as relevant;
- Representative townscape locations from which the Proposed Development will be visible; and
- Locations where there is extensive open space between the viewer and the Proposed Development so that the Proposed Development will be prominent rather than obscured by foreground buildings.

375 The visual assessment is based on desk-based analysis of key viewing corridors, views identified in the development plan⁵². The selection of viewpoints and likely visual receptors will also be informed by townscape character and heritage receptors.

376 A draft view locations map is shown in **Annex D: TVIA Supporting Maps**.

Built Heritage Receptors

377 The assessment of Built Heritage Receptors is proposed to be scoped out.

378 Heritage value is used in place of the word 'significance' for heritage receptors so as to avoid confusion with ES terminology.

379 The site does not contain any designated heritage receptors such as listed buildings, Scheduled Monuments or Registered Parks and Gardens. The site does not fall within a CA. There are statutory listed buildings and scheduled monuments within the study area:

- Church of All Saints. Grade II*, approximately 900m to the west of the site;
- The Factory Club, Grade II, approximately 790m to the east of the site;
- Northfleet Lower Lighthouse, Grade II, approximately 1.1km to the east of the site;
- Bevan's War Memorial, Grade II, approximately 890m to the east of the site;
- Aspdin's kiln, Scheduled Monument, approximately 300m to the east of the site; and
- Palaeolithic sites near Baker's Hole, Scheduled Monument, approximately 800 m to the south of the site.

380 Therefore, with the exception of the kiln, all identified heritage receptors are located, at least, 800m from the site. A cluster of Grade II listed buildings can be found in the Hill Conservation Area, located approximately 1.3 km to the east of the site, outside of the study area.

381 Aspdin's kiln is significant as one of the oldest Portland cement kilns in the world. It was constructed around 1846 and was in use until the early 20th century when the cement works closed and fell into ruin. The remains, i.e. Aspdin's kiln, was listed as a scheduled monument in 1965 and subsequently integrated into the industrial complex, composed of several large-scale sheds, clad in corrugated iron, that now occupy the site. The kiln is not visible from the road. The site has now been acquired by Ebbsfleet Garden City as part of the wider masterplan. The draft masterplan shows the kiln in a new townscape setting as a freestanding structure overlooking the main public space at Robins Creek. Bellway Homes is developing a piece of land to the east (noted as cumulative scheme number 2 within **Table 2**) which introduces further housing into the setting of the heritage receptor.

382 There are no non-designated heritage receptors on the site. Non-designated heritage receptors can include locally listed buildings, for example, or buildings or features which are recognised during the development process as having some local heritage value.

383 The Proposed Development will not involve the demolition or alteration of any structures of heritage value. As such, there are no direct effects on built heritage receptors.

384 Indirect effects of the Proposed Development on the heritage value of heritage receptors (designated and non-designated) may arise as a result of the change introduced to their setting by the Proposed Development (i.e. due to visibility of the Proposed Development from the receptor or its setting).

385 As part of the scoping process, the indirect effects on the designated heritage receptors in the study area have been assessed. The Proposed Development is not considered to result in significant effects to these receptors because of the limited change to their heritage value, the nature of the existing and

⁵² Gravesham Local Plan Core Strategy, 2014.

emerging built context, such as the large-scale industrial buildings and the high-speed railway tracks and cuttings.

- 386** Throughout the 20th century, much of the land along the Ebbsfleet and Robins Creek had been covered by industrial facilities (Portland cement works, lead works and paper works). Over time, large-scale sheds replaced the earlier brick buildings, such as the cement works which incorporated Aspdin's kiln. Eventually many of the industrial sites were cleared and are now being prepared for residential developments. The regeneration of the area, including by the Ebbsfleet Garden City project, is underway and the character of the area is fundamentally changing. Ebbsfleet International Station, serving Eurostar and high-speed services, opened in 2007.
- 387** Any potential functional relationships between the built heritage receptors and their setting and surrounding area have been eroded and will be further affected by development proposals adjacent to the scheduled monument. It is not likely that the Proposed Development will have significant effects on the receptor.
- 388** In the context of the existing and planned surrounding built development, it is considered that the Proposed Development will not result in significant environmental effects on the heritage receptors which are located within the 1km radius.
- 389** Given the nature of the Site, the proposals and intervening distance, built form and context, it is not thought that the Proposed Development will result in significant effects on the setting or significance of surrounding built heritage receptors. It is therefore considered appropriate to scope out this topic from the EIA.
- 390** The Built Heritage Receptors for the Proposed Development are shown in **Annex D: TVIA Supporting Maps**.

Potential Effects

- 391** An assessment of demolition and construction and operational effects of the Proposed Development will be prepared. In order to provide an objective assessment, the effects will be presented individually. This will ensure that appropriate prominence is given to both the positive and negative effects which will then enable the decision-maker to consider them in the round.
- 392** In broad terms, the assessment topics follow the same sequence comprising:
- Identification of receptors;
 - Assessment of receptor value and its susceptibility to change which is combined into an overall assessment of sensitivity (to change);
 - Identification of the size and scale of the change, its geographic extent and duration through combining these aspects to assess the overall magnitude of change; and
 - Combination of the sensitivity to change and magnitude of change to determine the scale and nature of the effect and to determine whether this is significant or not.
- 393** The TVIA assessment will be conducted in accordance with the principles set out in the following policies and guidance. The methodology for the townscape and visual impact assessment will be based broadly on the principles set out in the third (2013) edition of '*Guidelines for Landscape and Visual Impact Assessment*' ('GLVIA 3')⁵³, produced by the Landscape Institute with the Institute of Environmental Management and Assessment.

⁵³ *Landscape Institute and Institute of Environmental Management and Assessment, 2013. Guidelines for Landscape and Visual Impact Assessment Third Edition.*

- 394** Also, relevant to the method of assessment will be the section on urban design in the National Planning Policy Framework ('NPPF')⁵⁴ and national Planning Practice Guidance ('PPG')⁵⁵. The Landscape Institute's Technical Information Note 05/2017 '*Townscape Character Assessment*' (April 2018), and Technical Guidance Note 2/19 '*Residential Visual Amenity Assessment*' (LI TGN February 2019) will also be followed.
- 395** Accurate Visual Representations ('AVRs') will be produced to demonstrate the likely visual impacts. The production of the AVRs will follow TGN 06/19 Visual Representation of Development Proposals Technical Guidance Note (2019) prepared by Landscape Institute⁵⁶. This is a key predictive method used to assess likely effects.
- 396** Overall, structured, informed and reasoned professional judgement will be used to take account of quantitative and qualitative factors in assessing the likely significant effects of the Proposed Development.
- 397** The proposed assessment scope of the Townscape and Visual Impact Assessment is summarised in **Table 16** below.

Table 16 Summary of Assessment Scope

Receptor	Impact	Potential Effect
Townscape receptors: Townscape Character Areas ('TCAs')	Addition of the Proposed Development. The built form, height and elevational treatment will be considered in relation to TCAs.	Permanent and/or temporary effects on the appearance and character of TCAs.
Visual receptors: local, medium and distant views	Changes to visual amenity as a consequence of the proposed built form, including height, massing, perception of existing features in the view.	Permanent and/or temporary effects on the perception of local, medium and distant views.

Demolition and Construction

- 398** The demolition and construction effects of the Proposed Development are likely to vary according to their temporary nature and some activities may have more perceptible effects than others. The assessments offered in the TVIA will be based on a worst-case scenario when demolition or construction activities are at their peak.
- 399** It is likely that the most significant effects associated with the demolition and construction process will be the use of vehicles and machinery. In terms of the construction process, the most significant visual effect will be the presence of tower cranes with bright red navigation lights at night. Their presence is inevitable in connection with construction of the type and scale envisaged. Overall, demolition and construction effects are generally treated as less significant as they are temporary in nature. This approach is consistent with established best practice.

Completed Development

- 400** The Proposed Development will bring about change in the character, massing and height of the site. It is therefore expected that the Proposed Development will have effects, including likely significant effects, on the surrounding townscape and visual receptors. These effects will be analysed in full in the TVIA.

⁵⁴ Ministry of Housing, Communities and Local Government, 2021. *National Planning Policy Framework*.

⁵⁵ Ministry of Housing, Communities and Local Government, 2019. *Planning practice guidance* available from: <https://www.gov.uk/government/collections/planning-practice-guidance> [accessed 14 June 2022].

⁵⁶ Landscape Institute, 2019. *Technical Guidance Note 06/19 Visual Representation of Development Proposals*.

- 401** Townscape, visual and built heritage effects will be integral to the design process and will be considered at each stage alongside consultation with GBC and other key stakeholders.

Cumulative Effects

- 402** The potential cumulative townscape and visual effects of the Proposed Development when considered in combination with other cumulative schemes, will be assessed.
- 403** Owing to the location of the site in the Northfleet Embankment and Swanscombe Peninsula East Opportunity Area, it is expected that the Proposed Development will be seen in conjunction with other tall buildings. The TVIA will determine the nature of such effects.
- 404** A list of cumulative schemes will be agreed with GBC. This list is contained within the *Cumulative Effects with Other Developments* section of this Scoping Report. Once the final list has been agreed, the data will be added to a CAD model and a further sequence of the AVRs and wirelines will be produced to show the cumulative effects of these schemes.
- 405** GLVIA3 sets out two main approaches to inter-project effects between any given proposed development and cumulative schemes (See GLVIA, paragraph 7.18). The first approach is to focus:
- *primarily on the additional effects of the main project under consideration... on top of the cumulative baseline.*
- 406** The second approach is to focus:
- *on the combined effects of all the past, present and future proposals together with the new project.*
- 407** This assessment takes the first approach, which is to focus on the additional effects of the Proposed Development on top of the cumulative baseline. It is considered that this approach is best suited to an urban environment, in which the cumulative effects between the Proposed Development and other cumulative schemes may be complex (including situations in which the effect of the Proposed Development could be lessened or removed entirely by cumulative schemes) and because, as also acknowledged in the GLVIA3, it may not be considered reasonable to assess the effect of many complex schemes other than the Proposed Development in the manner required by the 'combined effects' approach.

SCOPED OUT TOPICS

Water Resources and Flood Risk

- 408** It is considered that significant effects relating to water resources, flood risk and drainage are unlikely and as such this topic is 'scoped out' of the EIA. The following section provides a summary of the baseline hydrological and flooding conditions of the site and surrounding area and clarifies why no likely significant effects are expected.
- 409** This Water Resources, Flood Risk and Drainage topic sheet has been prepared by RMA Environmental. It has been undertaken with reference to the following key policy and guidance documents:
- National Planning Policy Framework (NPPF) (2021)⁵⁷ and Planning Practice Guidance (PPG) (initially issued March 2014 and updated in 2021)⁵⁸;
 - Gravesham Local Plan Core Strategy Local Plan (Adopted September 2014⁵⁹);
 - Kent Council Local Flood Risk Management Strategy (June 2013)⁶⁰;
 - Gravesham Water and Flood Risk Background Paper (October 2020)⁶¹; and
 - Other relevant planning policy and guidance documents.
- 410** The review has been undertaken in accordance with best practice guidance on the assessment of development projects with regard to the water environment, including that provided by the Institute of Environmental Management and Assessment (IEMA).
- 411** The impacts associated with water quality on groundwater and surface water has been covered in the Ground Conditions and Land Contamination section of this Scoping Report.

Baseline Conditions

Flood Risk

- 412** The closest 'main river'⁶² is the River Thames which is located along the northern boundary of the site. Ebbsfleet, another 'main river', flows in a northerly direction towards the River Thames, via Robins Creek and is culverted along the eastern boundary of the site.
- 413** Swanscombe Marshes are located directly north-west of the site which comprise an area of marshland and a number of local land drains.
- 414** The Environmental Agency's (EA) Flood Map for Planning⁶³ indicates that the majority of the site lies within Flood Zone 3 (high risk) and is shown to benefit from flood defences. There is a small pocket of land located within Flood Zone 2 (medium risk) located in the northern central section of the site. Detailed tidal and fluvial flood data have been requested from the EA to understand the flood depths for various modelled scenarios with the added effects of climate change. An assessment of the flood data will form the main assessment in the Flood Risk Assessment which is detailed further below.
- 415** The EA's surface water flood risk mapping identifies that the majority of the site has a very low risk from surface water flooding. There is a high flood risk of surface water flooding in the south-eastern corner

⁵⁷ Department for Levelling Up, Housing and Communities. (2021). *National Planning Policy Framework*.

⁵⁸ Department for Levelling Up, Housing and Communities. (2021). *Planning Practice Guidance. Flood Risk and Coastal Change*. (Online). Available at: <https://www.gov.uk/guidance/flood-risk-and-coastal-change>.

⁵⁹ Gravesham Borough Council. (2014). *Gravesham Borough Council Core Strategy Local Plan*.

⁶⁰ Kent County Council. (2013). *Local Flood Risk Management Strategy*

⁶¹ Gravesham Borough Council. (2020). *Gravesham Water And Flood Risk Background paper*.

⁶² Main river is defined by the EA as any watercourse that contributes significantly to the hydrology of a catchment.

⁶³ Environment Agency (2021). *Flood Map for Planning*. (online). Available at: <https://flood-map-for-planning.service.gov.uk/>

of the site (where Ebbsfleet Football Stadium is located) - which is assumed to be associated with ponding on site - as well as in the northern extent of the site.

- 416** A review of Kent County Council's Local Flood Risk Management Strategy⁶⁴ concludes that groundwater flooding in the area is known to occur in areas underlain by major aquifers and is localised with floodplain sands and gravels. According to the British Geological Survey (BGS) online viewer, the majority of the site is underlain by the superficial deposits of Alluvium comprising clay, silt, sand and gravel. The north-west boundary of the site is underlain by the superficial deposits of Head comprising clay, silt, sand and gravel. Given that Kempton Park Gravels are located beneath the Alluvium deposits, it is considered that the site is underlain by major aquifers and therefore it is considered likely that relatively shallow groundwater is located beneath the site. The site is entirely underlain by the bedrock geology to Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation comprising chalk.
- 417** When reviewing online EA data sources it is confirmed that the site is located within a Zone 2 outer protection zone groundwater Source Protection Zone (SPZ). This is classified by the EA and "This zone is defined by the 400-day travel time from a point below the water table. Additionally, this zone has a minimum radius of 250 or 500 metres, depending on the size of the abstraction. The travel time is derived from consideration of the minimum time required to provide delay, dilution and attenuation of slowly degrading pollutants".
- 418** According to Defra's online Magic Map⁶⁵, both the superficial deposits of Alluvium and Head that underlay the site are classified by the EA as Secondary Undifferentiated aquifers. The Kempton Park Gravels are classified as Secondary A Aquifers and the bedrock geology of chalk is classified as Principal Aquifers.
- 419** There are no other significant sources of flooding at the site, i.e. from reservoirs or sewers.

Surface Water Drainage

- 420** A Critical Drainage Area (CDA) is defined as "A discrete geographic area where multiple and interlinked sources of flood risk (surface water, groundwater, sewer, main river and/or tidal) cause flooding during severe weather, affecting people, property or local infrastructure".
- 421** The site is not shown to be located within a critical drainage area.

Water Resources

- 422** A Groundsure Environ Insight and Geo Insight Report for the area identifies that there is one licensed surface water abstraction which is still active and located 55m north-east for mineral washing from the tidal River Thames at Swanscombe. This abstraction has an annual volume of 45,500m³ of surface water with a maximum daily volume of 375m³. There are no other abstractions located within a 250m radius of the site.

Water Supply and Infrastructure

- 423** According to the EA's Water Stressed Areas report (2021)⁶⁶, the site is located in an area which is reported to suffer from 'serious water stress', i.e. the availability of mains drinking water supply is limited. Whilst it is the remit of Affinity Water (and other water companies) to ensure that sufficient water supply

⁶⁴ Kent County Council. Kent Local Flood Risk Management Strategy. 2017.2023

⁶⁵ DEFRA. Magic Map. <https://magic.defra.gov.uk/MagicMap.aspx>

⁶⁶ Environment Agency. (2021). Water Stressed Areas – Final Classification.

is provided for new developments, sustainable design measures would need to be adopted to minimise the water demand of the Proposed Development.

Development Context

- 424** Sustainable Urban Drainage Systems (SuDS) will be incorporated into the design of the Proposed Development to ensure that surface water runoff is controlled and that appropriate water quality treatment is applied to any runoff leaving the site.
- 425** The design of the buildings will incorporate water efficiency measures and water-saving devices to reduce the water demand of the Proposed Development.

Discussion for Scoping Out

- 426** Due to the distance of the site from surface water and groundwater abstractions, it is considered that the Proposed Development would not have an impact on any water supply in relation to the recorded abstractions within the area. It is therefore considered unlikely that any foundation/piling works proposed at the site will cause significant disruption to the groundwater table that could result in water supply to local abstractions being inhibited.
- 427** There is the potential that the Proposed Development would cause an increase in surface water runoff during both the construction and operational phases, due to the increase in impermeable surface areas. However, during the construction phase, the control of surface water runoff will be covered within the Construction Environmental Management Plan (CEMP) that will be submitted as part of the planning application and will specify mitigation measures to ensure that the construction phase of the development will not increase surface water runoff within the site or elsewhere.
- 428** The site is located within Flood Zone 3 (high risk) and is larger than 1 hectare in area and therefore, in accordance with the NPPF, a Flood Risk Assessment will be prepared for the Proposed Development and submitted in support of the planning application which will include the following:
- Consultation with the Lead Local Flood Authority (LLFA) to identify any key issues in relation to flood risk;
 - Preliminary consultation with the EA regarding flood risk information for the site and surrounding area;
 - Acquisition of detailed flood data from the EA to establish the predicted effects of climate change on current flood extents and comparison of this with topographic levels for the site, including an assessment of breach in flood defences;
 - Review of the Council's Strategic Flood Risk Assessment (SFRA) to identify baseline information with regard to potential and actual sources of flood risk;
 - Review of national and local planning policies to ensure that the FRA addresses all relevant policies; and
 - Preparation of a stand-alone FRA report in accordance with the requirements of the NPPF, to include the following:
 - Details of any historical flooding events;
 - Acceptability of the proposed land use in relation to known flood zones;
 - Access and egress arrangements; and
 - Climate change effects.
- 429** For the operational phase of the Proposed Development, a conceptual surface water drainage strategy will be prepared and submitted in support of the planning application. This will ensure that surface water runoff is discharged appropriately and is compliant with target discharge rates. The Department for Environment, Food & Rural Affairs' (Defra) Non-Statutory Technical Standards require that "for

developments which were previously developed, the peak runoff rate from the development to any drain, sewer or surface water body for the 1 in 1 year rainfall event and the 1 in 100 year rainfall event must be as close as reasonable practical to the greenfield runoff rate from the development for the same rainfall event, but should never exceed the rate of discharge from the development prior to redevelopment for that event."

- 430** The design principles set out in the surface water drainage strategy and its conclusions will be presented in the ES within **ES Volume 1, Chapter 4: The Proposed Development**.
- 431** There is the potential for increased water demand and wastewater flows during both the demolition and construction works and once the Proposed Development is complete and operational. Consultation will be undertaken with Thames Water and, if necessary, infrastructure improvements may be required to supply the Proposed Development. Consultation with Thames Water and details of water efficiency measures to reduce water usage will be summarised within the ES. For the Proposed Development, water demand is considered to have a target consumption of 110 litres per person per day (l/p/d) or less as set out in Building Regulations Part G.
- 432** A foul drainage strategy will be prepared and submitted in support of the planning application. This will include consultation with Thames Water (foul drainage only) at the outset of the project to determine whether there is capacity within the local foul sewerage network to supply the Proposed Development and, if necessary, what infrastructure improvements are required. The design principles set out in the foul drainage strategy and its conclusions will be presented in the ES (in **ES Volume 1, Chapter 4: The Proposed Development**).

Conclusion

- 433** As the planning application will be supported by an FRA, conceptual surface water and foul drainage strategy and a CEMP, it is considered that a Water Resources, Flood Risk and Drainage ES chapter can be **SCOPED OUT** of the EIA as any significant effects are unlikely. An assessment of the risk of contamination of controlled waters (i.e. groundwater and surface water) is discussed in the Ground Conditions and Land Contamination section of this Scoping Report.

Waste and Materials

- 434** It is considered that significant effects relating to waste and materials are unlikely and as such this topic is 'scoped out' of the EIA. Further detail is provided below.
- 435** The Proposed Development's site is located within a designated mineral safeguarding zone. No excavation activities are proposed on the site, that might lead to the extraction of the safeguarded minerals. Therefore, information on the safeguarding of the minerals is not covered within this scoping out text. However, this matter will be appropriately addressed in consultation with Kent County Council (as the appropriate Mineral Planning Authority).
- 436** The sensitive receptor identified by the IEMA guidance⁶⁷ for waste is landfill void capacity, however, additional information on the local and regional (i.e., Kent) infrastructure has also been included to provide a robust comparison.
- 437** Waste arisings or material consumed from the extraction, processing and manufacturing of construction components and products have not been included in this scoping text. Therefore, this scoping text will only focus on providing information on the UK's available demand / consumption of construction materials.

⁶⁷ Institute of Environmental Management and Assessment (IEMA), (2020); IEMA guide to: Materials and Waste in Environmental Impact Assessment, Guidance for a proportionate approach.

Baseline Conditions

- 438** Baseline information on national (UK) demand for material resources has been collected for the key raw materials: aggregates, concrete, asphalt, steel, wood, and glass, as shown in **Table 17**. These key materials are globally traded commodities with no known issues regarding UK supply and stock.

Table 17 National (UK) Demand for Material Resources

Material	UK Demand	Source
Steel	17 Million tonnes	UK Steel Manifesto 2019: Laying the foundations for a vibrant UK steel industry ⁶⁸
Aggregates (of which):	251 million tonnes	MPA: Profile of the UK Mineral Products Industry 2020 Edition ⁶⁹
Crushed Rock	117.3 million tonnes	
Sand and Gravel – land won	48.9 million tonnes	
Sand and Gravel – marine won	13.7 million tonnes	
Recycled and Secondary	71 million tonnes	
Ready-Mixed Concrete	54.2 million tonnes	
Concrete Products	32 million tonnes	
Asphalt	25.4 million tonnes	
Wood	10.8 million tonnes	Forest Research: Forestry Statistics 2021 ⁷⁰
Glass	3.5 million tonnes	British Glass: Glass Sector Net Zero Strategy 2050 ⁷¹

Kent Municipal Solid Waste (MSW) Arisings

- 439** The current Municipal Solid Waste (MSW) arisings have been sourced using the information provided within the Environmental Agency's (EA) Waste Data Interrogator (WDI) 2020. The MSW arisings have been identified within the WDI under the European Waste Code (EWC) Chapter 20 (Municipal Waste). The MSW arisings from Kent are provided in **Table 18**.

Table 18 MSW Arisings in Kent

Borough	Year	Quantity (Tonnage)
Kent	2020	1,484,204.371

Kent Construction Demolition and Waste Arisings

- 440** The current Construction, Demolition & Excavation (CD&E) waste arisings have been sourced using EA WDI 2020. The CD&E waste arisings have been identified within the WDI under the European Waste Code (EWC) Chapter 17 (Construction and Demolition). The CD&E waste arisings recorded with an origin of Kent have been provided in **Table 19**.

Table 19 CD&E Arisings in Kent

Borough	Year	Quantity (Tonnage)
Kent	2020	1,896,964.555

⁶⁸ Ref. 8 Make UK, (2019); UK Steel – A new deal for steel: Laying the foundations for a vibrant UK steel industry

⁶⁹ Mineral Products Association (MPA), (2018); Profile of the UK Mineral Products Industry (2018 Edition).

⁷⁰ Forest Research, (2021); Forestry Statistics.

⁷¹ British Glass, Glass Sector Net Zero Strategy 2050

Current Regional Inert and Non-Hazardous Landfill Void Capacity

441 Table 20 shows the remaining inert and non-hazardous landfill void capacity in the Kent and South London. The most recent data for the inert and non-hazardous regional landfill void capacity (i.e., 2020) has been used as a baseline for this assessment: 15,190,479 m³.

Table 20 Regional Inert and Non-Hazardous Landfill Void Capacity

Type	Year	Landfill Void Capacity (m ³)
Inert	2020	10,068,082
Non- Hazardous	2020	5,112,397
Total		15,190,479

Current National Hazardous Landfill Void Capacity

442 The national hazardous landfill void capacity in 2020 is shown in Table 21. The most recent data for the hazardous landfill void capacity (i.e., 2020) has been used as a baseline for this assessment: 16,380,811 m³.

Table 21 National (England) Hazardous Landfill Void Capacity

Type	Year	Landfill Void Capacity (m ³)
Hazardous	2020	15,571,171
Hazardous – Restricted	2020	809,640
Total		16,380,811

IEMA Guidance for Assessing Magnitude

Materials

443 The methodology for assessing the magnitude of effects from the materials consumed is provided in Table 22.

Table 22 Methodology for Assessing Magnitude for Materials

No Change	Negligible	Minor	Moderate	Major
No material is required	No individual material required is equal or greater than 1 % of the volume	One or more material is between 1-5% by volume of the availability	One or more material is between 6-10% by volume of the availability	One or more material is >10% by volume of the availability

Waste

444 Method W1 of the IEMA guidance has been used to assess the magnitude of effects from the waste generated. This is provided in Table 23.

Table 23 Methodology for Assessing Magnitude for Waste

No Change	Negligible	Minor	Moderate	Major
Zero waste generation and disposal from the development	Waste generated from the development will reduce landfill void capacity baseline by <1%	Waste generated from the development will reduce landfill void capacity baseline by 1-5%	Waste generated from the development will reduce landfill void capacity baseline by 6-5%	Waste generated from the development will reduce landfill void capacity baseline by >10%

Assessment of Effects

Materials

- 445** At this stage, the quantities of materials required for the construction of the Proposed Development is not available. However, considering the extent of the Proposed Development it is envisioned that this will be less than 1% (by volume) of its availability. Therefore, it can be established that effects on the materials demand/availability are considered as negligible (please see **Table 22**).
- 446** Furthermore, the below section outlines the mitigation measures that will be in place, which will further reduce the effects on the materials during the constructional phase.

Mitigation

Construction

- 447** In view of the above, measures will be implemented to reduce the quantity of materials used during the construction of the Proposed Development. The key construction materials will be:
- Recovered from off-site sources (e.g., donor sites) as far as reasonably practicable;
 - Sourced locally as far as reasonably practicable;
 - Sourced in accordance with The Green Guide to Specification⁷² to reduce the environmental impact of the construction of the Proposed Development by an informed and responsible selection of construction materials and components (for example, for the floors, roofs, walls, windows, insulation, and landscaping of the Proposed Development);
 - Sourced via a defined Procurement Strategy, which will select materials with a percentage of recyclable content where feasible;
 - Managed via the implementation of a Construction Environmental Management Plan (CEMP) (or equivalent), which will include measures such as:
 - A 'just-in-time' material delivery system to avoid materials being stockpiled and spoiled during bad weather;
 - Consideration of material quantity requirement to avoid over-ordering and generation of waste materials; and
 - Designated storage area for new building materials, to reduce the risk of damage / spoiling.
- 448** Measures such as the above shall be implemented; therefore, it is considered that significant adverse effects associated with construction of the Proposed Development on materials would be unlikely.
- 449** Based on the above, it is proposed to scope out an assessment of construction effects on materials; however, the ES will set out:
- The approximate type and quantities / volumes of materials that are anticipated to be required for the construction of the Proposed Development;
 - The approximate type and quantities/volume of waste that is anticipated to be generated during the construction activities;
 - Details of the Procurement Strategy (if known);
 - The sustainability credentials of materials (if known); and
 - The commitment to undertaking the measures outlined in the CEMP.

⁷² BRE, (2009); *The Green Guide to Specification, Fourth Edition*.

Waste

Construction

- 450** The quantities of construction waste have been estimated using a bespoke tool, which uses the area of the Proposed Development (m²) (which in this case is approximately 389,850m²) and the data provided in the Benchmarks and Baselines 2009 from the Construction Resources and Waste Platform (CRWP)⁷³. Using this bespoke tool, it is estimated that approximately 71,035 tonnes or 70,316m³ of waste will be generated during the construction activities.

Demolition

- 451** A bespoke tool has been used to estimate the approximate quantities of demolition waste arising from the Proposed Development. This tool uses the dimensions of the existing structures and the benchmark values as provided in the WRAP Design Out Waste Tool. Using this tool, it is estimated that approximately 118,115 tonnes or 102,760m³ of waste will be generated during the demolition of the existing structures. It should be noted that at this stage it assumed that all existing buildings will be demolished. However, if this is not the case, then the estimated quantity of demolition waste will be lower than above mentioned.

Excavation

- 452** No excavation activities are proposed on site, therefore, the waste arising from the excavation activities will be minimal.
- 453** In total, 189,150 tonnes or 174,042 m³ of inert and non-hazardous waste is anticipated to be generated from the construction phase of the Proposed Development, which represents approximately 10% of the total waste arising from Kent (i.e., 1,896,964.555 tonnes). When considering landfill as a sensitive receptor, this quantity of waste would equate to approximately 1% of the regional landfill void capacity (i.e., 15,190,479 m³).
- 454** Considering the above, it can be established that as per the IEMA guidance the magnitude of impacts of CD&E waste arising from the demolition and construction phase of the Proposed Development are minor (please see **Table 23**).
- 455** However, to further reduce the effects of the CD&E activities on the surroundings and the sensitive receptors, the following mitigation measures will be proposed:
- 456** In view of the measures available, a CEMP (or equivalent) will be prepared and implemented throughout the construction and demolition works. The CEMP may be supported by a Site Waste Management Plan (SWMP) which would also be prepared and implemented throughout the construction and demolition works. Together, the measures defined within the CEMP and SWMP will minimise waste arising from construction activities; example management measures include but are not limited to:
- avoiding the stockpiling and potential spoiling of construction materials;
 - preventing the overordering of construction materials by carrying out upfront cost analysis works; and
 - storing the construction materials in an appropriate location that will minimise damage to materials.
 - Further to the above, additional mitigation measures that will be implemented include, but are not limited to, the following:

⁷³ Construction Resources and Waste Platform (CRWP), (2009); Benchmarks and Baselines 2009

- Off-site manufacturing will be adopted as much as is practicable, which will assist in reducing wastage of materials;
- The setting of waste reduction targets and waste re-use / recycling targets prior to commencing works on-site and monitoring of such targets throughout the duration of the demolition and construction works; and
- The implementation of waste segregation measures, whereby segregating the key / main waste streams, waste for recovery can be identified prior to leaving the site.

457 Based on the above, it is proposed to scope out an assessment of the Proposed Development's construction and demolition effects on the regional landfill capacity.

Operational Development

458 In total, approximately 4,754 tonnes or 1,044 m³ per annum of operational waste is anticipated to be generated from the Proposed Development, which represents approximately 0.3% of the total waste arisings from Kent (i.e., 1,484,204.371 tonnes). When considering landfill as a sensitive receptor, this quantity of waste would equate to approximately 0.02% of the regional and local landfill void capacity (i.e., 5,112,397 tonnes).

459 Considering the above, it can be established that as per the IEMA guidance the magnitude of impacts of waste arising from the operational development are negligible (please see **Table 23**).

460 However, to further reduce the effects of the operational waste on the sensitive receptors, the following mitigation measures will be proposed:

Mitigation

461 The design of the Proposed Development will allow that there is sufficient storage and equipment / provisions (in accordance with the GBC requirements) in place to manage and direct the operational waste, expected to be generated by the Proposed Development, to the relevant storage areas provided. The final design of the Proposed Development will also allow for sufficient space for the collection of waste to be relocated to the relevant active and permitted waste management sites; and

462 An Operational Waste Management Strategy (OWMS) (or equivalent) will be prepared and implemented as part of the Proposed Development, which will include information on the type and quantities / volumes of waste streams anticipated to be generated by the operational Proposed Development, along with how each waste stream will be managed. The Strategy will also provide details on how waste will be reduced, minimised, and recycled, where possible, in line with the Waste Hierarchy and the GBC's requirements.

463 Based on the above, it is proposed to scope out an assessment of the Proposed Development's operational effects on regional landfill capacity.

Project Vulnerability

464 Paragraph 8 of Schedule 4 of the EIA Regulations requires consideration of the potential significant adverse environmental effects derived from the vulnerability of the development to risk of major accidents and/or disasters which are relevant to the project concerned. It is clear that the intention is for the consideration of these risks be focused on those of relevance to the Proposed Development only and should not comprise an exhaustive list of all potential risks to any development project. It is understood this information would in particular be considered to be of key importance for the assessment of major industrial and/or infrastructure schemes which could pose significant risks to society and the environment in the event of a major accident or a natural disaster which would impede its normal function (e.g. nuclear / petrochemical installations, major transport infrastructure such as

tunnels, bridges or airports, etc.). While the Proposed Development does not fall into either of these scheme categories, the project's vulnerability to such events has nevertheless been taken into consideration in order to ascertain the potential risks to future site users and surrounding human and environmental receptors.

465 With reference to Regulation 4(4) and Schedule 4 of the EIA Regulations, consideration has been given as to whether there are likely to be any significant effects on the environment or the project arising from the vulnerability of the Proposed Development to major accidents or disasters. The recently published IEMA guidance (2020) 'Major Accidents and Disasters in EIA: A Primer'⁷⁴ has also been considered.

466 Available guidance (IEMA Quality Mark Article 'Assessing the Risks of Major Accidents and Disasters in EIA' (WSP, 2016)) defines major accidents and disasters as follows:

"man-made and natural events which are considered to be likely and are anticipated to result in substantial harm that the normal functioning of the project is unable to cope with/rectify".

467 For any new development, a project's vulnerability to major accidents and natural disasters should be considered both in terms of the likelihood of the project itself to cause a major man-made accident, and in terms of the project being affected by an external man-made accident or by a natural disaster. In all these cases it is furthermore important to consider whether any aspect of the Proposed Development's design or operation could worsen the effects of any such events on nearby receptors.

468 Specifically, and as noted in the new IEMA guidance, a development should be screened to determine its potential to result in likely significant effects from major accidents and natural disasters. The following questions are posed to help determine a view on this:

"Is the development a source of hazard itself that could result in a major accident and/or disaster occurring?"

Does the development interact with any sources of external hazards that may make it vulnerable to a major accident and/or disaster?

If an external major accident and/or disaster occurred, would the existence of the development increase the risk of a significant effect to an environmental receptor occurring?"

469 The London Resilience Partnership (LRP) has developed the London Risk Register⁷⁵, which lists a range of natural hazards and man-made accidents/incidents and assesses the risks they pose to the London area based on their potential impact and likelihood. As well as assessing the risk of these events, the London Risk Register also provides an outline of the control measures already in place to avoid, manage and respond to them. These measures range from specific laws and regulations intended to avoid or manage the potential causes of major accidents and natural disasters, to government agency programmes intended to prevent, inspect and monitor these causes, as well as a variety of response plans, certification schemes, forecasting and early warning systems. The effective implementation of these plans, programmes, legislative tools and guidance is considered to reduce the risk of these events to a level which is as low as reasonably possible.

470 Due to the nature and surroundings of the Proposed Development, many of the events listed in the Register (e.g. wildfires, animal diseases, etc.) are not considered relevant or likely to pose a risk to future site users or surrounding receptors. The remaining events in the Register will be managed, or altogether avoided, through the aforementioned established regulatory framework and the control measures implemented at the local and/or national government level, with the support of specialist government agencies.

⁷⁴ <https://www.iema.net/resources/blog/2020/09/23/iema-major-accidents-and-disasters-in-eia-primer>

⁷⁵ London Resilience Partnership, February 2017. London Risk Register. Available: https://www.london.gov.uk/sites/default/files/london_risk_register_6.0.pdf

- 471** In addition to the above-mentioned measures, the planning application process also presents an opportunity for local authorities and government agencies/bodies to comment on the proposals and address any vulnerabilities (e.g. police force commentary on security matters, including Secure by Design accreditation). In some cases, this risk management process will be further supported with project-specific information and assessments which are included as part of the planning application. Most notably, this applies to the Flood Risk Assessment and Drainage Strategy, which will support the planning application, which address the flood and drainage related risks, as listed in the London Risk Register.
- 472** In line with the above, within the context of the events assessed in the London Risk Register, it is considered that the vulnerability of the Proposed Development to major accidents and natural disasters will be adequately managed throughout the lifetime of the project. As such, it is considered that the vulnerability of the Proposed Development to such events, is in itself, unlikely to result in any further significant effects on introduced site users and surrounding environmental and human receptors.
- 473** On this basis, the topic of project vulnerability, major accidents and natural hazards has been SCOPED OUT of this EIA.

PROPOSED STRUCTURE OF THE ES

The proposed scope and structure of the ES is as follows:

- **ES Volume 1: Main ES** – a document which forms the main body of the ES and which comprises of the following non-technical and technical chapters:
 - Chapter 1. Introduction;
 - Chapter 2. EIA Methodology;
 - Chapter 3. Alternatives and Design Evolution;
 - Chapter 4. The Proposed Development;
 - Chapter 5. Demolition and Construction;
 - Chapter 6. Socio-Economics;
 - Chapter 7. Traffic and Transport;
 - Chapter 8. Air Quality;
 - Chapter 9. Noise and Vibration;
 - Chapter 10. Daylight, Sunlight, Overshadowing and Solar Glare;
 - Chapter 11. Wind Microclimate;
 - Chapter 12. Climate Change and Greenhouse Gas Assessment;
 - Chapter 13. Archaeology;
 - Chapter 14. Ecology and Biodiversity;
 - Chapter 15. Ground Conditions and Land Contamination;
 - Chapter 16. Effect Interactions;
 - Chapter 17. Likely Significant Effects and Conclusions;
 - Chapter 18. Environmental Management, Mitigation and Monitoring Schedule; and
 - Glossary and Abbreviations.
- **ES Volume 2: Townscape, Visual and Built Heritage Impact Assessment -**
- **ES Volume 3: Technical Appendices** – comprises background data, technical reports, tables, figures and surveys.
- **ES Non-Technical Summary (NTS)** - this will be a separate document providing a concise description of the Proposed Development, the alternatives considered, any identified mitigation measures and the residual likely significant environmental and socio-economic effects.

FORMAL REQUEST FOR AN EIA SCOPING OPINION

- 474** This Scoping Report requests a Scoping Opinion of the GBC pursuant to Regulation 15 of the EIA Regulations.
- 475** The Scoping Report suggests a comprehensive scope of work based on the previous experience of the assembled team of specialists and knowledge of the site. The GBC and consultees are invited to consider the contents of this Scoping Report and comment accordingly within the five-week period prescribed by the EIA Regulations.

Annex A: Scoping and EIA Methodology

Legislation and the Need for an EIA

- 476** The Proposed Development falls within the description of developments listed within Schedule 2, item 10(b) (Infrastructure Projects – Urban Development Projects) of the Environmental Impact Assessment (EIA) Regulations⁷⁶, hereafter referred to as the ‘EIA Regulations’. Consideration must therefore be given to whether:
- Any part of that development is to be carried out in a sensitive area; or
 - Any applicable threshold or criterion in the corresponding part of column 2 of the Schedule 2 table is respectively exceeded or met in relation to that development.
- 477** The Proposed Development is not located within a ‘sensitive area’⁷⁷ as defined by the EIA Regulations. The Proposed Development will however provide up to approximately 3,500 dwellings and exceed 5ha in overall area of development, and as such exceeds the thresholds set within Schedule 2 with regards to item 10(b) (Infrastructure Projects – Urban Development Projects) of the EIA Regulations in relation to dwellings and overall area⁷⁸.
- 478** Furthermore, taking into account the scale of the redevelopment and the nature of the site and surrounding area, it is considered that there is the potential for significant environmental effects to arise.
- 479** The Proposed Development is therefore considered to constitute ‘EIA development’ under the EIA Regulations, and so an Environmental Statement (ES) will be prepared and submitted to accompany the planning application.

Use of Competent Experts

- 480** Trium Environmental Consulting LLP (Trium) has been commissioned by the Applicant to prepare a Request for an EIA Scoping Opinion for the Proposed Development in line with the requirements of the EIA Regulations and relevant EIA guidance.
- 481** This includes submitting an EIA ‘Scoping Report’ (this Report) to the relevant planning authority, which in this case is the GBC, that sets out the proposed scope of the EIA and the content and approach to preparing the ES that will be submitted as part of the planning application.
- 482** The EIA Regulations require that in order to ensure the completeness and quality of an ES, “(a) the developer must ensure that the environmental statement is prepared by competent experts;” and “(b) the environmental statement must be accompanied by a statement from the developer outlining the relevant expertise or qualifications of such experts.” Trium consider that these requirements are equally important and relevant to the EIA scoping process in addition to the preparation of the ES. As such, in accordance with this requirement, the following statement is provided:

“Trium is an environmental consultancy specialising in urban regeneration and property development projects in the UK. Trium’s Partners and Employees have extensive experience in managing the environmental issues and impacts surrounding large scale, high profile urban regeneration development projects. The Partners and Employees of Trium have, over the course of their careers to date, project directed, managed or contributed to over 500 EIAs within the retail, residential, leisure, commercial, cultural, infrastructure and industrial sectors. Trium’s lead EIA practitioner for the project is a Chartered Environmentalist (IEMA, 2016) and has 18 years EIA experience”.

⁷⁶ The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended).

⁷⁷ <https://www.legislation.gov.uk/uksi/2017/571/regulation/2/made>

⁷⁸ The threshold for dwellings with regards to Schedule 2, item 10(b) (Infrastructure Projects – Urban Development Projects) of the EIA Regulations states “(ii) development includes more than 150 dwellings”, and “(iii) the overall area of the development exceeds 5 hectares”.

- 483** Further information on Trium's lead EIA practitioner and EIA team (both Trium's EIA coordination team and the wider EIA technical assessment team), including details on their expertise and qualifications will be appended to the ES.

EIA Purpose and Process

- 484** EIA is a process carried out which examines available environmental information to ensure that the likely significant environmental effects of certain projects are identified and assessed before a decision is taken on whether a project is granted planning permission. This means environmental issues can be identified at an early stage and projects can then be designed to avoid or to minimise significant environmental effects, and appropriate mitigation and monitoring can be put in place.
- 485** Regulation 4 of the EIA Regulations sets out the EIA process. Specifically, Regulation 4(2) states that "the EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors:
- (a) Population and human health;*
 - (b) Biodiversity;*
 - (c) Land, soil, water, air and climate;*
 - (d) Material assets, cultural heritage and the landscape; and*
 - (e) The interaction between the factors referred to in sub-paragraphs (a) to (d)."*
- 486** EIA Scoping forms one of the first stages of the EIA process. Requesting an EIA Scoping Opinion Request from a local planning authority, under Regulation 15 of the EIA Regulations, involves the preparation of a Scoping Report and its submission to the local planning authority as part of a formal request for their opinion on the content or 'scope' and approach to the EIA.
- 487** The purpose of scoping is to identify:
- The important environmental issues and topics for consideration in the EIA;
 - The baseline conditions and assessment methodology to be used for the impact assessments;
 - Any receptors that may be affected by the development being proposed;
 - The appropriate temporal and geographic boundaries of the EIA;
 - The environmental information necessary for decision-making; and
 - The significant environmental effects which are likely to result from the Proposed Development both during demolition and construction and once the development is completed and in use.
- 488** The potential for likely significant effects on the aforementioned factors, during both the demolition and construction works associated with the Proposed Development and once the Proposed Development is complete and in use, is considered in respect of the following relevant environmental topics that are addressed within this Scoping Report:
- Air Quality;
 - Archaeology;
 - Climate Change;
 - Daylight, Sunlight, Overshadowing;
 - Ecology and Biodiversity;
 - Geo-Environmental (Ground Condition, Land Contamination and Soils);
 - Health;

- Light Pollution;
- Noise and Vibration;
- Project Vulnerability (Major Accidents and Natural Disasters);
- Socio-Economics;
- Solar Glare;
- Traffic and Transport;
- Townscape, Visual and Built Heritage;
- Waste and Materials;
- Water Resources, Flood Risk and Drainage; and
- Wind Microclimate.

489 This Scoping Report constitutes a request for an EIA Scoping Opinion from the GBC. It is noted that Regulation 18(4) of the EIA Regulations require that the ES must 'be based on' the most recent EIA Scoping Opinion (so far as the Proposed Development remains materially the same).

490 In accordance with the requirements of the Town and Country Planning (Development Management Procedure) Order 2015 (article 18, Schedule 4), this Scoping Report will need to be issued by the GBC to the statutory consultees that are considered to have an interest in the EIA of the Proposed Development and should be consulted as part of the EIA Scoping process. It is expected that the GBC will also issue the Scoping Report to non-statutory and key, local stakeholders and interest groups who are also deemed to have an interest in the EIA of the Proposed Development. Consultation is a key requirement of the EIA process and the views of statutory consultees and other stakeholders help identify specific issues, as well as identifying additional information in their possession, or of which they have knowledge, which may be of assistance in progressing the EIA.

491 The Scoping Report and the GBC's EIA Scoping Opinion will be appended to the ES and the ES will include a summary of any other consultation undertaken as part of the EIA process.

EIA Approach and Methodology

492 In addition to the EIA Regulations, there is also guidance available that has been referenced where appropriate, including but not limited to:

- at a European level, reference has been made to the European Commission's (EC) various EIA guidance documents available here: <http://ec.europa.eu/environment/eia/eia-support.htm>
- at a domestic level, reference has been made to the Ministry of Housing, Communities and Local Government's (MHCLG) overarching PPG;
- In addition, Highway England's Design Manual for Roads and Bridges 'Sustainability and Environment' – LA 104 (Environmental Assessment and Monitoring)⁷⁹ has been referred to as applicable;
 - in relation to publications from professional bodies, reference has been made to IEMA publications as these include best practice/suggested improvements to the EIA process. This includes:
 - IEMA's ES Review Criteria (COM3-6);
 - 'Guidelines for Environmental Impact Assessment' (2004);
 - 'Special Report into the State Environmental Impact Assessment Practice in the UK' (2011);
 - 'Shaping Quality Development' (2015);

⁷⁹ *Highways England, 2020. Design Manual for Roads and Bridges 'Sustainability and Environment' – LA104 Environmental assessment and monitoring.*

- ‘Delivering Quality Development’ (2016); and
- ‘Delivering Proportionate EIA’ (2017).
- whilst primarily written for major infrastructure projects, reference is also made to guidance/advice notes published by the National Infrastructure Planning where appropriate, as these can include relevant/helpful information; and
- applicable case law.

493 The method behind the EIA process generally⁸⁰ takes into account the existing conditions of the area into which the development is being introduced (**the baseline**) and makes reasonable predictions of the likely change (**the impact** – in terms of magnitude) that may occur, during both its demolition and construction and when the development is completed and operating as proposed. The predicted impact is considered in terms of key environmental and social aspects (**receptor / resource**) found within the surrounding area, and based on their sensitivity to change, the resulting change experienced by the receptor / resource (**the effect**) is then determined. Any mitigation measures required in order to reduce or eliminate adverse effects are then considered and assessed, with the resulting residual effect being determined as significant or not. The likely significant effects are then reported (within an **environmental statement**) for consideration by the relevant planning authority when considering whether to grant planning permission for a development.

Alternatives

- 494** In addition, the EIA Regulations (Schedule 4) require that the ES provides “a description of the reasonable alternatives [...] relevant to the proposed project and its specific characteristics” which have been considered by the Applicant and “an indication of the main reasons for selecting the chosen option, including comparison of environmental effects.”
- 495** The ES will consider the ‘Do Nothing’ / ‘No Development Alternative’ which relates to leaving the site in its current state. The environmental pros and cons of the ‘Do Nothing’ / ‘No Development Alternative’ shall be identified.
- 496** The ES will present any ‘Alternative Sites’ for the Proposed Development that have been considered by the Applicant if any; and will address why the selected site is the most appropriate from an environmental perspective.
- 497** In addition, the ES will describe the ‘Alternative Designs’ that have been considered by the Applicant through presenting a summary of the alternative designs considered and the evolution of the Proposed Development, including modifications made during the design process. The summary will refer to any environmental considerations which have influenced the design evolution process. Matters that will be considered in terms of design evolution include quantum of development, land use, layout, building heights and open space design. The preferred design alternative culminating in the scheme sought for approval will be discussed.

Determining Effect Significance – Terminology and Approach

Reference to ‘Impact’ and ‘Effect’

- 498** The terms ‘impact’ and ‘effect’ are distinctly different. Having gained an understanding of the likely impact it is then important to know whether the change in environmental or socio-economic conditions results in a significant environmental effect. The impacts of the Proposed Development may or may not

⁸⁰ There may be exceptions to the general approach described. Where there are exceptions, this will be clearly described within the relevant methodology section, outlining both the departure from the general EIA methodology and the description of the alternative approach. This is discussed further within ‘EIA Process and Methodology’ section of this Scoping Report.

result in significant effects on the environment, depending on the sensitivity of the resource or receptor and potentially other factors (such as duration). The assessment of the likely significant effects of the development is a requirement identified by Schedule 4 of the EIA Regulations.

Receptor Sensitivity and Magnitude of Impact

499 To achieve a consistent approach across the different technical disciplines addressed within the ES (Volume 1), assessments will broadly define the sensitivity of the receptors that could be affected by the Proposed Development and the magnitude of impact or change from the baseline. Terminology to describe the sensitivity of receptors and magnitude of impact or change from the baseline conditions is broadly as follows:

- High;
- Medium;
- Low;
- Negligible; and
- No Impact (in relation to magnitude of impact or change only).

500 Where there is no impact/change, no assessment will be required due to there being no potential for effects.

501 Each of the technical assessment chapters of the ES (Volume 1) will provide further detail on the definition of each of the above terms specific to the topic in question and will also provide the criteria, including sources and justifications, for quantifying the different levels of receptor sensitivity and 'impact magnitude'. Where possible, this will be based upon quantitative and accepted criteria (for example, national standards for air quality and noise), together with the use of value judgement and expert interpretation.

502 Alternatively, some technical assessment chapters may differ in the terminology adopted to describe the magnitude of impact or change from the baseline conditions. Where this occurs, the alternative terminology adopted will be clearly set out within the individual technical chapters of the ES.

Identification of a Resultant Effect

503 The basis for determining the resultant effect generally takes into account the sensitivity of the receptor and magnitude of impact or change from the baseline conditions. A generic matrix that combines the sensitivity of the receptor and the magnitude of impact to identify the resultant effect is provided within **Table 24**.

504 It should be noted that the specific assessment methodology for each environmental topic may differ from that set out in **Table 24** below. **Table 24** is included only as an example of the general approach followed. The discipline specific methodology followed will be set out in the individual technical chapters of the ES.

Table 24 Resultant Effects

Receptor Sensitivity	Magnitude of Impact		
	High	Medium	Low
High	Major	Major	Moderate
Medium	Major	Moderate	Minor
Low	Moderate	Minor	Negligible

Effect Scale

505 Table 25 provides the broad definition of the ‘scale’ of the resultant effect i.e. definitions of Major, Moderate, Minor and Negligible effects. The definitions in **Table 25** maybe adjusted to suit the technical topic in question; where this is the case revised definitions of effect scale will be presented in the technical assessment chapters of the ES (Volume 1).

506 Where there is no impact to a receptor and therefore no effect, this will be stated.

Table 25 Broad Definitions of the Scale of the Resultant Effect

Scale of Effect	Description
Major	These may significantly affect environmental receptors. Potentially associated with sites and features of national importance or could be important considerations at a regional or district scale. Major effects may also relate to resources or features which are unique to a receptor and which, if lost, cannot be replaced or relocated.
Moderate	These effects, if adverse, are likely to be important at a local scale and on their own could have significant effects on environmental receptors.
Minor	These effects may be raised as local issues and may be of relevance in the detailed design of the project but, are unlikely to result in significant effects on environmental receptors.
Negligible	Effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error, these are unlikely to significantly affect environmental receptors, irrespective of other effects.

Effect Nature

507 Table 26 provides definitions of the ‘nature’ of the resultant effect, i.e. definitions of Adverse, Beneficial and Neutral. The nature is defined when the effect scale is minor, moderate or major; the nature of effect is not defined for effects that are negligible.

Table 26 Definition of the Nature of the Resultant Effect

Type of Effect	Description
Adverse	Detrimental or negative effects to an environmental / socio-economic resource or receptor. The quality of the environment is diminished or harmed.
Beneficial	Advantageous or positive effect to an environmental / socio-economic resource or receptor. The quality of the environment is enhanced.
Neutral	Neither beneficial or adverse. Where the quality of the environment is preserved or sustained or where there is an equal balance of benefit and harm.

Geographic Extent of Effect

508 The ES will identify the geographic extent of the identified effects. At a spatial level, ‘site’ or ‘local’ effects are those affecting the site and neighbouring receptors, while effects upon receptors in GBC beyond the vicinity of the site and its neighbours are considered to be at a ‘district / borough’ level. Effects

affecting Kent are considered to be at a 'regional' level, whilst those which affect different parts of the country, or England as a whole, are considered being at a 'national' level.

Effect Duration

- 509** For the purposes of the ES, effects that are generated as a result of the demolition and construction works (i.e. those that last for this set period of time) will be classed as 'temporary'; these may be further classified as either 'short term' or 'medium-term' effects depending on the duration of the demolition and construction works that generate the effect in question.
- 510** Effects that result from the completed and operational Proposed Development will be classed as 'permanent' or 'long-term' effects.

Direct, Indirect and Secondary Effects

- 511** The ES will identify whether the effect is 'direct' (i.e. resulting without any intervening factors) or 'indirect' or 'secondary' (i.e. not directly caused or resulting from something else).

Identification of Significant Effects

- 512** Following identification of an effect, the scale of the effect, its nature, geographic extent and duration and whether the effect is direct or indirect using the above summarised terminology, a clear statement will then be made within the ES (Volume 1) as to whether the effect (pre-mitigation) is significant or not significant. Each technical topic addressed within the ES will be clear on which effects are significant and those which are not. This is likely to differ across technical topics.
- 513** Following identification of whether the potential or 'unmitigated' effects are significant or not, the requirement for any mitigation to either eliminate or reduce likely significant adverse effects will be identified.
- 514** Where mitigation measures are identified to either eliminate or reduce likely significant adverse effects, these will be incorporated into the Proposed Development, for example either through the design, or will be translated into demolition and construction commitments; or operational or managerial standards / procedures.
- 515** The ES will then highlight whether the 'residual' effects remain significant following the implementation of suitable mitigation measures and will classify these in accordance with the terminology defined above.
- 516** As a general rule, the following applies:
- 'Moderate' and 'Major' effects are 'significant'; and
 - 'Minor' and 'Negligible' effects are 'not significant'.
- 517** In all cases, the overall approach and specific methods of predicting the likely magnitude of impact and resultant scale, nature, geographic extent, duration etc. and significance of an effect will be set out in each of the EIA technical assessments / ES technical topic chapters. Where used, recognised specific predictive methods will be referenced. Any assumptions or limitations to knowledge will be stated.

Annex B: Planning Policy Context

- 518** The ES (within **ES Volume 1, Chapter 2: EIA Methodology**), will define the relevant national, regional and local policy context. Specifically, the ES will list out the key relevant policy documents but will not discuss the policies within these in any detail.
- 519** Although relevant policies out of the key planning policy documents will, in some instances, inform the scope and the methodology of the technical assessments within the EIA including informing the baseline conditions, the Proposed Development's compliance with and performance against the relevant planning policies will be appraised within the Planning Statement which will be a standalone document that is submitted in support of the planning application. It is not the purpose of the ES to appraise the Proposed Development against relevant national, regional and local planning policy standards / targets.
- 520** Where planning policy informs the scope and the methodology of the technical assessments of the EIA, the policies will be presented in the ES (in the relevant technical topic chapters) and discussed as necessary. Any policy detail required to support the relevant impact assessment scope, methodology or assessment of effects, will either be provided within the technical topic chapter itself or within an appendix to the ES.

National Planning Policy and Guidance

- 521** The EIA will be undertaken having regard to the National Planning Policy Framework (NPPF)⁸¹. The NPPF sets out the Government's economic, environmental and social planning policies for England. The policies contained within the NPPF articulate the Government's vision of sustainable development, which are intended to be interpreted at a local level, to meet the requirements of local aspirations.
- 522** As relevant to the EIA, specifically to the scope, methodology and assessment of effects for the EIA technical topics, the NPPF shall be considered throughout undertaking of the EIA and preparation of the ES.
- 523** The EIA will also refer to, as relevant to the EIA technical topics, the Planning Practice Guidance (PPG), which is an online resource. The PPG aims to make planning guidance more accessible, and to ensure that the guidance is kept up to date.

Local Planning Policy and Guidance

- 524** As relevant to the EIA technical topic scope, methodology or assessment of effects, the ES will have regard to key local planning policy and guidance documents.
- 525** The Gravesham Local Plan Core Strategy⁸², adopted in September 2014, is the local council's adopted Core Strategy. It is accompanied by a Policies Map which shows the areas affected by these policies in the Core Strategy and saved policies from the Local Plan First Review (November 1994).
- 526** The site is located within the Northfleet Embankment and Swanscombe Peninsula East Opportunity Area⁸³. There are clear opportunities in this location to make more efficient use of the land, facilitate river-related activity, accommodate new development and secure environmental improvements as part of the wider regeneration of the area. The site is located within sub areas 1.2 and 1.3. It is anticipated that sub area 1.2 will remain in active employment uses and the retention and expansion of industrial and port related employment will be supported. Sub area 1.3 has the potential for residentially-led regeneration.

⁸¹ Ministry of Housing, Communities and Local Government, 2021, *National Planning Policy Framework*

⁸² Gravesham Local Plan Core Strategy (2014); <https://www.gravesham.gov.uk/planning/local-plan>

⁸³ Gravesham Local Plan Core Strategy (2014); page 56; <https://www.gravesham.gov.uk/planning/local-plan>

- 527** The site is also within an area identified for sub-Alluvial River Terrace Deposits and within the Gravesham Borough Council Urban Boundary under the KCC Waste and Minerals Local Plan (2016). The aggregates wharf is also subject to a protective policy under both local and regional planning documents.

Other Guidance

- 528** In addition to any relevant planning policies that inform the scope, methodology or assessment of effects, as relevant, the technical topic chapters of the ES will present a summary of any pertinent recognised industry guidance documents.

Relevant Planning History

- 529** The site has been subject to numerous previous planning applications which have been received and/or determined by GBC in the last five years, as detailed within **Table 27**.

Table 27 Site Planning History

Application Reference	Address	Determination Date	Description of Development	Decision
20220475	Telecommunications Mast Stonebridge Road Northfleet Gravesend Kent DA11 9BJ	Pending Consideration	Application for determination pursuant to Part 16 Class A of the Town and Country Planning (General Permitted Development) Order 2015, as amended, as to whether prior approval is required for proposed telecommunications installation for a 20m high slim line phase 8 monopole c/w wraparound cabinet at base, 3no. additional ancillary equipment cabinets and associated ancillary works.	Pending Consideration
20220349	Unit K7 Northfleet Industrial Estate Lower Road Northfleet Gravesend Kent DA11 9BL	Pending Consideration	Change of use from an empty unused warehouse unit into a food manufacturing unit with Internal configurations within the Class E use to the existing premises.	Pending Consideration
20200625	Shuttleworth Road Ltd Unit K7 Northfleet Industrial Estate Lower Road Northfleet Gravesend Kent DA11 9BL	Thu 22 Oct 2020	Application for Lawful Development Certificate in respect of a proposed division of the unit into two units.	Certificate Granted
20201198	Unit 5 Robins Wharf Grove Road Northfleet Gravesend Kent DA11 9AX	Thu 14 Jan 2021	Application for a Lawful Development Certificate in respect of the continued use as B2 motor vehicle repairs workshop.	Certificate Granted
20181265	Keyline Builders Merchants Ltd Robins Wharf Grove Road Northfleet Gravesend Kent DA11 9AX	Wed 06 Mar 2019	Reorganisation of site to include open storage, racking systems, designated parking and loading areas.	Permitted
20210505	Ebbsfleet United Football Club Kuflink Stadium Stonebridge Road Northfleet Gravesend Kent DA11 9GN	Wed 21 Apr 2021	Application for a non-material amendment to planning permission reference number 20170221 to allow wording of conditions 14 and 37 to change from pre-commencement to the following trigger points: Condition 14 to be changed from pre-commencement to no development shall commence other than above slab level demolition; Condition 37 to be changed from pre-commencement to allow the demolition of buildings B13 (Gents	Approval of Non-material amendment

Application Reference	Address	Determination Date	Description of Development	Decision
			toilets) and B14a (Storage room off the turnstiles).	
20200853	Ebbsfleet United Football Club Kuflink Stadium Stonebridge Road Northfleet Gravesend Kent DA11 9GN	Thu 17 Sep 2020	Application for Additional Environmental Approval for planning permission reference number 20170221 for the demolition of the Plough End Stand and ancillary buildings and erection of a replacement Stand (Phase 1B), integrated 55-bedroom hotel together with new access, parking and ancillary facilities.	Application Permitted
20190355	Costa Coffee Unit 3 Eagle House Eagle Way Northfleet Gravesend Kent DA11 9BJ	Thu 04 Jul 2019	Application for the removal of condition 1 attached to planning permission reference number 20150034 for the change of use of existing warehouse to a mixed use A1/A3 coffee shop and an A1 sandwich shop; to allow the continued use as A1/A3.	Application Permitted
20190328	Snap Fitness Ltd Unit 1 Eagle House Eagle Way Northfleet Gravesend Kent DA11 9BJ	Wed 26 Jun 2019	Application for the removal of condition 1 attached to planning permission reference number 20140529 for the change of use of premises from a car showroom to Class D2 24 hour gym incorporating replacement of roller shutters on the side (north-west & south east) elevations with glazed panels and an emergency exit door; to allow the continued use as 24 hour gym.	Application Permitted
20180154	Sian Formwork Adjacent To 67 Stonebridge Road Northfleet Gravesend Kent DA11 9BA	Thu 15 Nov 2018	Retention of 3000mm high perimeter security fencing.	Permitted
20180528	Swale Motors Ltd Stonebridge Road Northfleet Gravesend Kent DA11 9BJ	Thu 05 Jul 2018	Re-provision of parking with associated infrastructure improvements.	Permitted

530 No other planning applications or consents are known for the site.

Annex C: Preliminary Ecological Appraisal

Northfleet Central 1 Ltd

Ecological Services

Preliminary Ecological Appraisal

Northfleet, Gravesham.



Reference No.: TRI044

Date: June 2022

Document Management

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Executive Summary

Purpose	To define the baseline ecological conditions of the Site at Northfleet, Gravesham, and to evaluate the nature conservation importance of ecological features present within the Zone of Influence for the Proposed Development. This report assesses potential impacts on important ecological features, sets out avoidance, mitigation, compensation, and enhancement measures and details the type and extend of any residual effects or further surveys required to understand the potential impacts of the Proposed Development on important ecological features of the Site.
Introduction	A PEA, consisting of a field survey and desk study, was undertaken in May 2022. The PEA followed the Chartered Institute of Ecology and Environmental Management (CIEEM) Preliminary Ecological Appraisal (2017) guidelines, standard Phase 1 habitat survey protocol (JNCC, 2010) and British Standard 42020 (2013) 'Biodiversity – Code of Practice for Planning and Development'. The site is located in Ebbsfleet, Northfleet. The site is currently occupied by a number of industrial warehouses, a sea freight terminal, a shell petrol station, a car dealership and Ebbsfleet FC Stadium.
Key Findings	The site is in a highly urban area and the habitats on the site were largely considered to be of low ecological value. The site could support nesting birds (including Schedule 1) within the vegetation, buildings and gravel works. There are habitats bounding the site but not within the redline boundary that have high ecological value. There is potential for the disturbance of Schedule 1 bird species and aquatic invertebrates in these areas around the site such as in Northfleet Harbour and habitat adjacent to the site on the Thames. Further screening is needed in order to assess the impact of the development on the Swanscombe Peninsula SSSI with a focus on the importance of the mudflats next to the site as a foraging area for birds of the SSSI.
Recommendations	Designated Sites – The site is adjacent to Swanscombe Peninsula (SSSI) and four non-statutory sites. It is recommended further assessments are undertaken of the potential impacts the Proposed Development may have on designated sites. It is advised buffer zones be in place to protect areas of high ecological value surrounding the site. Pollution measures should be incorporated into a Construction Environmental Management Plan (CEMP). Nesting Birds - Any vegetation clearance or building demolition should be undertaken outside of the bird nesting season (March – August). If works are required to be undertaken within bird nesting season a suitably qualified ecologist should inspect the vegetation no more than 48hrs before clearance. Areas where there are nesting birds will be cordoned off and left undisturbed until the chicks have fledged. Specific surveys will be needed in areas of the site where Schedule 1 birds may nest on or adjacent to the site (the gravel works, the shingle beach and Northfleet Harbour) to confirm nesting during the breeding season. Where nesting of Schedule 1 birds is confirmed the Precautionary Working Method Statement (PWMS) must be updated to reflect the nesting Schedule 1 species location and appropriate mitigation measures by a suitably qualified ecologist. Works must be undertaken in line with the Precautionary Working Method Statement (PWMS) which may include measures such as additional buffer zones and alterations in the timing of some works, screening and noise barriers, soft starts to machinery and monitoring surveys for signs of disturbance. Other Birds- Further screening will be done to assess the impacts on the SSSI. Further assessment in the form of bird surveys are needed to understand the use of the mudflats for foraging by waterbirds which may be coming from the SSSI both in summer and winter months to cover both breeding and overwintering species. Mitigation measures may include input into the drainage plans to minimise impacts to the mudflats and gravel beach area. This assessment will also inform the suitability for the mudflats for aquatic invertebrates and their importance for the birds of the SSSI. Invasive Species – For the removal of Japanese knotweed an ECoW or suitably qualified person should be on site to oversee the removal management plan.

Conclusions	Based on the findings of the PEA, the site has low ecological value. However, due to the high ecological value sites adjacent to the Development area mitigation measures must be put in place during the works to limit disturbance of Schedule 1 birds adjacent to the site and further screening is needed to assess the impacts on Swanscombe Peninsula SSSI. The Proposed Development provides exciting opportunities for biodiversity enhancement such as wildlife friendly planting, native tree planting to compensate for any vegetation loss on the site and green and brown roofs on buildings to contribute to urban greening and compensate for loss of potential black redstart nesting habitat.
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1 Purpose of the document

1.1.1 The purpose of this document is to provide information regarding any protected and /or notable habitats and species that occur or have the potential to occur on or near the Proposed Development(s) and identification of the potential impacts of the works.

1.1.2 This assessment has been designed to meet:

- Chartered Institute of Ecology and Environmental Management 'Guidelines for Preliminary Ecological Appraisal' (2017); and
- British Standard 42020 (2013) 'Biodiversity – Code of Practice for Planning and Development'.

1.1.3 The objectives are to:

- Identify any designated sites for nature conservation and habitats on, near and adjacent to the site;
- Identify any notable and/ or protected plant or animal species of nature conservation value, which may occur on or near the site;
- Identify the presence of any invasive plant species on or adjacent to the site;
- Provide a habitat map with target notes of ecological features as identified above;
- Undertake a preliminary assessment of the potential impacts on any ecological receptors of conservation value identified on, near or adjacent to the site; and
- Recommend further surveys, mitigation, and enhancement measures as appropriate.

1.2 Validity of data

1.2.1 The findings of this study are valid for a period of 24 months from the survey on 23rd May 2022. If works have not commenced within two years of this date, then an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.

2 Introduction

2.1 Background Information

- 2.1.1 Schofield Lothian was appointed by Northfleet Central 1 Ltd (the client)) to carry out an extended Phase 1 habitat survey of land at Northfleet, Kent in order to prepare a Preliminary Ecological Appraisal (PEA).
- 2.1.2 By undertaking an investigation of the habitats and species present, this report will provide Trium with a greater understanding of the ecological value of the area. It identifies any potential risks, obligations and restrictions that may be necessary to guarantee compliance with wildlife legislation.

2.2 Site Description

- 2.2.1 Due to the scale of the site the was split into three areas referred to as:

- RLB South;
- RLB North-East; and
- RLB North-West.

- 2.2.2 The extent of this has been illustrated in Figure 1.

RLB South

- 2.2.3 The RLB South area of the site is approximately 6 hectares (ha) and is currently mainly occupied by industrial and commercial activities with Ebbsfleet FC stadium taking up a large amount of the area.

RLB North-East

- 2.2.4 The RLB North-East area of the site is approximately 6 hectares (ha) and is currently mainly occupied by industrial and commercial activities with a large active Sand and Gravel works and other industrial buildings such as a car and truck mechanics buildings.

RLB North-West

- 2.2.5 The RLB North-West area of the site is approximately 6.3 hectares (ha) and is dominated by industrial units, hardstanding mixed with ephemeral vegetation. Also on site are scattered trees, ornamental planting as well as sparse species-poor hedgerow with trees. Directly adjacent north of the site is Swanscombe Peninsula SSSI, which directly includes a dense treeline adjacent to the site boundary.

2.3 Scope of Works

2.3.1 The following surveys were commissioned by the client and form part of this PEA:

- Desktop study and ecological data search; and
- Extended Phase 1 habitat survey.

2.4 Proposed Works

2.4.1 The proposal comprises a mixed-use development comprising a number of distinct precincts, including the redevelopment of the EUFC stadium (as an 8,000 seat stadium and community recreational leisure facility) as the centre piece of the redevelopment, a neighbourhood retail shopping centre, local medical and healthcare services, local/ community essential services and retail offers, a new 200-bed hotel, , a commercial quarter comprising c. 180,000sqft of office/ employment space training and R&D facilities, a waterfront dining precinct, SME incubator precinct, c. 3,000 homes and comprehensive and engaging pedestrian priority public realm.

RLB South

2.4.2 The current proposals show redevelopment of the whole site into residential properties and commercial space.

RLB North-East

2.4.3 Whilst the development proposals are currently evolving, the current plans show redevelopment of the whole of the site area into residential properties and drainage into the Thames.

RLB North-West

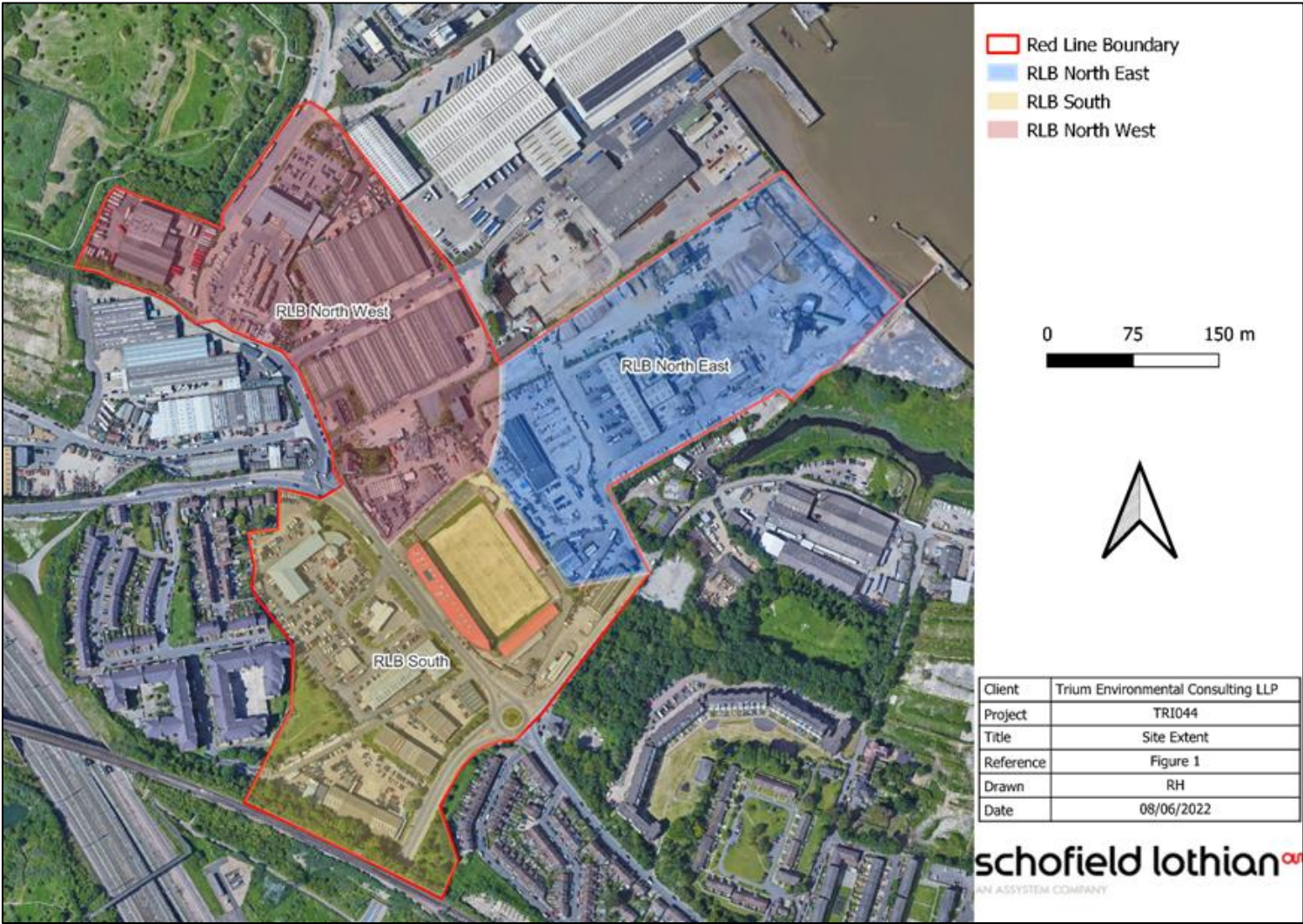
2.4.4 Whilst the development proposals are currently evolving, the current plans show redevelopment of the whole of the site area into residential properties.

2.5 Quality Assurance

2.5.1 This survey and subsequent report were undertaken in line with Schofield Lothian's Business System (SBS). Our SBS places great emphasis on honesty, respect, integrity and trust, collaboration, and accountability. All staff members are committed to establishing and maintaining our certification to the international standards BS EN ISO 9001:2015, 14001:2015 and 18001:2007.

2.5.2 All lead Schofield Lothian ecologists are members of (at the appropriate level) the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow their code of professional conduct when undertaking ecological work.

Figure 1: Site Redline Boundary



3 Methodology

3.1 Zone of Influence

- 3.1.1 The Zone of Influence (Zoi) is the area over which the ecological features identified may be subject to significant effects because of the Proposed Development. These will vary between ecological receptors.

3.2 Desk Study

- 3.2.1 An ecological desk study was undertaken to determine the presence of any designated sites for nature conservation, habitats of conservation importance and protected and notable species that occur within 1 kilometre (km) of the study area. Due to the Site's location within a heavily urban area and lack of ecological connectivity to the Site, 1km was deemed an appropriate distance for the data search. Further data was obtained from Kent & Medway Biological Records Centre and the Multi-Agency Geographic Information for the Countryside (MAGIC) website.
- 3.2.2 Only records from within the last ten years and considered relevant to the Site have been included in this report.

Table 3-1 Sources of desk study records

Source	Information Requested
Kent & Medway Biological Records Centre	Protected and priority species (2km)
Kent & Medway Biological Records Centre	Sites of local importance (2km)
Multi-Agency Geographic Information for the Countryside	International statutory sites (5km) National statutory sites (2km)

- 3.2.3 The search buffers listed in Table 3-1 are sufficient to cover the potential Zoi of the Proposed Development. For protected and priority species, and sites of local importance the impacts of the Proposed Development were not expected to exceed 1km, due to the urban setting of the Site and lack of ecological connectivity.
- 3.2.4 For International designated and National sites, the search buffer was extended to 5km and 2km respectively.
- 3.2.5 Impact Risk Zones (IRZs) are a tool developed by Natural England to help assess the potential risks to Nationally or Internationally Designated Sites of Nature Conservation Importance posed by development proposals. IRZs for this report were located using magic.defra.gov.uk and reviewed against the Proposed Development proposals to understand if the Local Planning Authority would need pre-application advice from Natural England.

3.3 Extended Phase 1 habitat survey

- 3.3.1 A field survey in the form of an 'extended' Phase 1 habitat survey was undertaken by Molly Richardson, an ecologist with over 5 years' experience (GCN class 1 license holder 2020-45785-CLS-CLS), Joanna Meredith, an ecologist with over 5 years' experience, Rorie Hather, an ecologist with over 3 years' experience, on 23rd May 2022.
- 3.3.2 All habitats within the survey area were identified and mapped in compliance with the 'Handbook for Phase 1 habitat survey: a technique for environmental audit' (Joint Nature Conservation Committee, 2010¹). The dominant plant species were recorded and any protected, uncommon or invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981² (as amended) were noted.
- 3.3.3 The protected species considered relevant to the assessment, based on geographical region and the presence of suitable habitats within the site, were as follows.
- Bats: assessment of trees and buildings for their potential to support roosting bats;
 - Birds: assessment of habitats and buildings for their suitability for nesting birds including Schedule 1 species and important sites for overwintering birds; and
 - Botanical interest: invasive species and / or species of botanical importance.
- 3.3.4 Consideration was given to the potential for the Site to support Priority Habitats and Priority Species, as listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006).

3.4 Assessment and Evaluation

- 3.4.1 This PEA has been produced in broad accordance with CIEEM's Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017b)³ and Guidelines for Ecological Report Writing (CIEEM, 2017a)⁴.
- 3.4.2 Where relevant and appropriate, the evaluation of ecological features and the potential ecological impacts of the proposals have followed CIEEM's Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018)⁵.
- 3.4.3 The level of value of specific ecological receptors is assigned using a geographic frame of reference, with international, national, regional, county (metropolitan), district, local and site only value in descending order.

¹ http://archive.jncc.gov.uk/pdf/pub10_handbookforphase1habitatsurvey.pdf

² <http://www.legislation.gov.uk/ukpga/1981/69>

³ <https://cieem.net/wp-content/uploads/2019/02/Guidelines-for-Preliminary-Ecological-Appraisal-Jan2018-1.pdf>

⁴ <https://cieem.net/resource/guidelines-for-ecological-report-writing/>

⁵ <https://cieem.net/wp-content/uploads/2019/02/Combined-EcIA-guidelines-2018-compressed.pdf>

- 3.4.4 A negligible value is assigned where the habitat offers minimal value to wildlife. Where best practice guidelines are unavailable or unclear, experienced ecologists have used their judgement to assess and categorise the suitability of habitats for protected and/or notable species, refer to Table 3-2.
- 3.4.5 The need and scope for additional species surveys has been determined based on the suitability of the habitats for protected and/or notable species, the potential impacts of the Proposed Development and the nature of the legal protection afforded to the species likely to be present.
- 3.4.6 Value judgements are based on various characteristics that can be used to identify ecological resources or features likely to be important in terms of biodiversity. These include site designations (such as Sites of Special Scientific Interest), or for undesignated features the size, conservation status (locally, nationally or internationally), and the quality of the ecological resource. In terms of the latter, 'quality' can refer to habitats (for instance if they are particularly diverse, or a good example of a specific habitat type), other features (such as wildlife corridors or mosaics of habitats) or species populations or assemblages.

Table 3-2: Scale of Constraints

Likelihood	Definition
High	An actual or potential constraint that is subject to relevant legal protection and is likely to be a material consideration in determining the planning application (e.g., statutory nature conservation designations and European/nationally protected species). Further survey likely to be required (as detailed in this report) to support a planning application.
Moderate	An actual or potential constraint that is covered by national or local planning policy and depending on the level of the potential impact because of the Proposed Development may be a material consideration in determining the planning application. Further survey may be required to support a planning application
Low	Unlikely to be a constraint to the Proposed Development or require further survey prior to submission of a planning application. Mitigation is likely to be covered under Construction Environmental Management Plan (CEMP) or precautionary working method statement (e.g., generic requirements for the management of nesting bird risks).

4 Limitations

- 4.1.1 Biological records can be received from a wide variety of sources and may or may not be comprehensive and accurate. However, if assessed in conjunction with a Phase 1 habitat survey, they can contribute to a robust ecological assessment of a site.
- 4.1.2 Access was limited across the site with most of the RLB North-East area of the site having no access permission at the time of the survey.
- 4.1.3 Not all areas of the site were accessible during the site survey. The walkover survey took place from Public Right of Way (PRoW), meaning fenced off private land could not be accessed. Despite this, a significant amount of the site was accessed, so there are no significant limitations to this PEA.
- 4.1.4 The desk study and field survey will not produce a comprehensive list of plants and animals as this will be limited by factors that influence their presence (e.g., activity and dormancy periods). An assessment can however be made of the habitats within the survey area, their nature conservation value and potential to support protected or priority species.
- 4.1.5 Despite the limitations described, there are deemed to be no significant limitations to this PEA.

5 Results

5.1 Desk Study

Statutory designated sites

- 5.1.1 A desk-based search shows that there are five sites with European or National statutory designation within the 5km of the site:
- Swanscombe Peninsula Site of Special Scientific Interest (SSSI) is located adjacent to the north-west of the site. This was granted SSSI status in November 2021.
 - Swanscombe Skull Site National Nature Reserve (NNR and SSSI) is located 1.3km to the south-west of the site.
 - Swanscombe Marine Conservation Zone (MCZ) is located 1.2km to the north-west of the site.
 - West Thurrock Lagoon and Marshes SSSI is located 2.4km to the north-west of the site.
 - Lion Pit SSSI is located 2.8km north-west of the site.
- 5.1.2 The site is in the Impact Risk Zone for Swanscombe Peninsula SSSI and West Thurrock Lagoon and Marshes SSSI. Swanscombe Peninsula SSSI is a corridor of habitats connecting Ebbsfleet Valley with the southern shore of the River Thames between Dartford and Gravesend. The site is a complex of open mosaic habitats on previously developed land and traditional estuarine habitats located near and within the River Thames.
- 5.1.3 The nearest Internationally statutory designated site to the Proposed Development is Thames Estuary & Marshes Ramsar and Special Protection Area (SPA), is located 5.7km to the east of the site.

Non-statutory designated sites

- 5.1.4 A desk-based search based on Kent & Medway Biological Records Centre shows that there are three local wildlife sites within the Zone of Influence:
- GR19 Botany Marshes is located within Swanscombe Peninsula SSSI (adjacent to the north-west) of the site – habitats include, significant areas of wet grassland, reedbed and, notable areas of salt marsh, exposed mud and sheltered riparian habitats.
 - GR05 Ebbsfleet Marshes is located 50m south of the site - Habitats include grassland, marsh, scrub, the River Ebbsfleet and a large, flooded quarry to the north-east known as 'blue lake'. This Local Wildlife Site (LWS) was first notified in 1985, but since then the construction of the Channel Tunnel Rail Link, Ebbsfleet International Rail Station and its associated parking has caused severe fragmentation of the LWS.
 - DA13 Alkerden Lane Pit is located 1.5km west of the site - is located close to the Site to the south of the railway line, A226 and Swanscombe Peninsula. Habitats include grassland, scrub, woodland and an inland cliff. The site was mainly designated for supporting nationally and county scarce plant species including narrow-leaved everlasting pea *Lathyrus sylvestris*, a relict population of yellow vetchling *Lathyrus aphaca* and the county's largest population of green-flowered helleborine *Epipactis*

phyllanthus. An area of former landfill on the site is also known to support a rare assemblage of invertebrates including at least one UK Biodiversity Action Plan (BAP) species.

- M031 River Thames borders the north-west of the site - The River Thames and the tidal sections of creeks and rivers which flow into it comprise a number of valuable habitats not found elsewhere in London.

5.2 Priority habitats

5.2.1 Priority habitats include those listed in Section 41 of the Natural Environment and Rural Communities Act (2006) habitats of principal importance as well as those listed in The London Biodiversity Action Plan (BAP). The following Priority Habitats are located within 1km of the Proposed Development.

- Coastal and Floodplain Grazing Marsh
- Coastal Saltmarsh
- Deciduous Woodland
- Mudflats.

5.3 Protected or notable species records

5.3.1 The MAGIC website showed there is no record of previous applications for European Protected Species (EPS) development licences within 1km of the survey area. The Kent & Medway Biological Records report detailed five bat roosts (unknown type) and three hibernating bats within 2km of the site but not within the red line boundary.

5.3.2 Records of protected and/or notable species have been obtained from the Kent & Medway Biological Records report, see Table 5-2. Ones considered potentially relevant to the Site have been included.

Table 5-1: Protected and notable species records from the desk study

Species	Number of records	Date of most recent record	Nearest record from site
Birds			
Unidentified Gull	1	15/04/2018	Botany Marsh (TQ609754)
Little Grebe (<i>Tachybaptus ruficollis</i>)	155	05/07/2019	TQ67 (TQ67C)
Great Crested Grebe (<i>Podiceps cristatus</i>)	38	16/04/2019	TQ67 (TQ67B)
Gannet (<i>Morus bassanus</i>)	1	20/11/2018	Northfleet (TQ6174)
Cormorant (<i>Phalacrocorax carbo</i>)	191	29/07/2019	Botany Marsh (TQ609754)
Little Egret (<i>Egretta garzetta</i>)	151	29/07/2019	Botany Marsh (TQ609754)
Great White Egret (<i>Egretta alba</i>)	1	17/05/2014	Swanscombe Marsh (TQ6075)
Grey Heron (<i>Ardea cinerea</i>)	274	29/07/2019	TQ67 (TQ67C)

Species	Number of records	Date of most recent record	Nearest record from site
Spoonbill (<i>Platalea leucorodia</i>)	1	13/04/2017	Swanscombe Marsh (TQ6075)
Mute Swan (<i>Cygnus olor</i>)	100	29/07/2019	TQ67 (TQ67C)
Pink-footed Goose (<i>Anser brachyrhynchus</i>)	1	09/10/2012	Northfleet (TQ6174)
Greylag Goose (<i>Anser anser</i>)	182	25/07/2019	Swanscombe Marsh (TQ6075)
Canada Goose (<i>Branta canadensis</i>)	65	03/07/2019	Swanscombe Marsh (TQ6075)
Brent Goose (<i>Branta bernicla</i>)	15	27/12/2019	Northfleet (TQ6174)
Red-breasted Goose (<i>Branta ruficollis</i>)	1	08/02/2015	Northfleet (TQ6174)
Egyptian Goose (<i>Alopochen aegyptiacus</i>)	5	10/04/2018	Swanscombe Marsh (TQ6075)
Shelduck (<i>Tadorna tadorna</i>)	236	21/12/2019	TQ67 (TQ67C)
Wigeon (<i>Anas penelope</i>)	13	01/03/2019	Northfleet (TQ6174)
Gadwall (<i>Anas strepera</i>)	220	30/12/2019	Botany Marsh (TQ609754)
Teal (<i>Anas crecca</i>)	216	30/12/2019	Botany Marsh (TQ609754)
Mallard (<i>Anas platyrhynchos</i>)	275	30/12/2019	TQ67 (TQ67B)
Pintail (<i>Anas acuta</i>)	11	03/03/2018	Swanscombe Marsh (TQ6075)
Garganey (<i>Anas querquedula</i>)	31	16/04/2019	Swanscombe Marsh (TQ6075)
Shoveler (<i>Anas clypeata</i>)	117	05/07/2019	Botany Marsh (TQ609754)
Pochard (<i>Aythya farina</i>)	73	29/11/2019	Northfleet (TQ6174)
Tufted Duck (<i>Aythya fuligula</i>)	117	29/11/2019	TQ67 (TQ67B)
Aythya hybrid (<i>Aythya spp.</i>)	2	22/03/2019	Swanscombe Marsh (TQ6075)
Scaup (<i>Aythya marila</i>)	20	20/11/2018	Northfleet (TQ6174)
Common Scoter (<i>Melanitta nigra</i>)	6	24/03/2016	Northfleet (TQ6174)
Red-breasted Merganser (<i>Mergus serrator</i>)	1	20/11/2018	Northfleet (TQ6174)
Goosander (<i>Mergus merganser</i>)	3	05/01/2018	Swanscombe Marsh (TQ6075)
Marsh Harrier (<i>Circus aeruginosus</i>)	203	29/11/2019	Botany Marsh (TQ609754)
Hen Harrier (<i>Circus cyaneus</i>)	2	30/03/2019	Swanscombe Marsh (TQ6075)
Montagu's Harrier (<i>Circus pygargus</i>)	1	01/05/2016	Northfleet (TQ6174)
Sparrowhawk (<i>Accipiter nisus</i>)	87	29/11/2019	TQ67 (TQ67C)
Common Buzzard (<i>Buteo buteo</i>)	88	29/11/2019	Northfleet (TQ6174)
Kestrel (<i>Falco tinnunculus</i>)	210	30/12/2019	TQ67 (TQ67B)
Hobby (<i>Falco Subbuteo</i>)	34	18/08/2019	Northfleet (TQ6174)
Peregrine (<i>Falco peregrinus</i>)	76	30/12/2019	Northfleet (TQ6174)
Red-legged Partridge (<i>Alectoris rufa</i>)	25	30/12/2019	TQ67 (TQ67C)
Pheasant (<i>Phasianus colchicus</i>)	138	23/05/2019	TQ67 (TQ67C)
Water Rail (<i>Rallus aquaticus</i>)	142	29/11/2019	Northfleet (TQ6174)
Moorhen (<i>Gallinula chloropus</i>)	137	30/09/2019	TQ67 (TQ67B)
Coot (<i>Fulica atra</i>)	148	29/11/2019	TQ67 (TQ67B)
Oystercatcher (<i>Haematopus ostralegus</i>)	155	02/08/2019	TQ67 (TQ67C)
Avocet (<i>Recurvirostra avosetta</i>)	20	16/03/2018	Northfleet (TQ6174)
Stone-curlew (<i>Burhinus oediconemus</i>)	2	27/04/2012	Swanscombe Marsh (TQ6075)

Species	Number of records	Date of most recent record	Nearest record from site
Little Ringed Plover (<i>Charadrius dubius</i>)	32	12/04/2016	Swanscombe Marsh (TQ6075)
Ringed Plover (<i>Charadrius hiaticula</i>)	60	03/12/2019	TQ67 (TQ67C)
Golden Plover (<i>Pluvialis apricaria</i>)	4	20/11/2018	Northfleet (TQ6174)
Grey Plover (<i>Pluvialis squatarola</i>)	43	03/12/2019	Northfleet (TQ6174)
Lapwing (<i>Vanellus vanellus</i>)	232	29/11/2019	TQ67 (TQ67C)
Knot (<i>Calidris canutus</i>)	3	06/12/2014	Swanscombe Marsh (TQ6075)
Purple Sandpiper (<i>Calidris maritima</i>)	24	22/03/2018	Swanscombe Marsh (TQ6075)
Dunlin (<i>Calidris alpina</i>)	120	19/11/2019	Northfleet (TQ6174)
Jack Snipe (<i>Lymnocyptes minimus</i>)	81	27/12/2019	Swanscombe Marsh (TQ6075)
Snipe (<i>Gallinago gallinago</i>)	115	29/11/2019	TQ67 (TQ67C)
Woodcock (<i>Scolopax rusticola</i>)	4	13/03/2017	Northfleet (TQ6174)
Black-tailed Godwit (<i>Limosa limosa</i>)	73	29/11/2019	Northfleet (TQ6174)
Curlew (<i>Numenius arquata</i>)	146	21/12/2019	Northfleet (TQ6174)
Redshank (<i>Tringa tetanus</i>)	202	21/12/2019	TQ67 (TQ67C)
Greenshank (<i>Tringa nebularia</i>)	8	27/09/2015	Northfleet (TQ6174)
Green Sandpiper (<i>Tringa ochropus</i>)	149	21/08/2019	Swanscombe Marsh (TQ6075)
Common Sandpiper (<i>Actitis hypoleucos</i>)	131	29/11/2019	"Botany Marsh
Turnstone (<i>Arenaria interpres</i>)	156	30/12/2019	(TQ609754)"
Mediterranean Gull (<i>Larus melanocephalus</i>)	60	02/06/2019	Northfleet (TQ6174)
Little Gull (<i>Larus minutus</i>)	45	21/08/2019	Northfleet (TQ6174)
Black-headed Gull (<i>Larus ridibundus</i>)	189	30/09/2019	Northfleet (TQ6174)
Common Gull (<i>Larus canus</i>)	86	30/12/2019	Botany Marsh (TQ609754)
Lesser Black-backed Gull (<i>Larus fuscus</i>)	67	30/09/2019	Northfleet (TQ6174)
Herring Gull (<i>Larus argentatus</i>)	102	30/09/2019	Botany Marsh (TQ609754)
Yellow-legged Gull (<i>Larus michahellis</i>)	92	15/03/2019	Swanscombe Marsh (TQ6075)
Caspian Gull (<i>Larus cachinnans</i>)	9	04/02/2017	Northfleet (TQ6174)
Great Black-backed Gull (<i>Larus marinus</i>)	98	30/12/2019	Northfleet (TQ6174)
Kittiwake (<i>Rissa tridactyla</i>)	11	12/02/2019	Northfleet (TQ6174)
Sandwich Tern (<i>Sterna sandvicensis</i>)	25	24/07/2018	Northfleet (TQ6174)
Common Tern (<i>Sterna hirundo</i>)	65	08/09/2018	Northfleet (TQ6174)
Arctic Tern (<i>Sterna paradisaea</i>)	22	08/09/2018	Northfleet (TQ6174)
Black Tern (<i>Chlidonias niger</i>)	11	31/08/2018	Northfleet (TQ6174)
Guillemot (<i>Uria aalge</i>)	3	06/09/2019	"Greenhithe/Swansco
Feral Pigeon (<i>Columba livia</i>)	59	30/09/2019	mbe (TQ5974)"
Stock Dove (<i>Columba oenas</i>)	94	30/09/2019	Northfleet (TQ6174)
Wood Pigeon (<i>Columba palumbus</i>)	196	30/09/2019	TQ67 (TQ67B)
Collared Dove (<i>Streptopelia decaocto</i>)	103	30/09/2019	TQ67 (TQ67B)
Ring-necked Parakeet (<i>Psittacula krameria</i>)	68	29/11/2019	TQ67 (TQ67B)
Cuckoo (<i>Cuculus canorus</i>)	119	22/06/2019	TQ67 (TQ67B)

Species	Number of records	Date of most recent record	Nearest record from site
Barn Owl (<i>Tyto alba</i>)	4	29/01/2015	Northfleet (TQ6174)
Little Owl (<i>Athene noctua</i>)	5	23/04/2019	TQ67 (TQ67B)
Short-eared Owl (<i>Asio flammeus</i>)	27	29/01/2019	TQ67 (TQ67C)
Swift (<i>Apus apus</i>)	52	28/06/2019	TQ67 (TQ67B)
Kingfisher (<i>Alcedo atthis</i>)	58	21/06/2019	Swanscombe Marsh (TQ6075)
Green Woodpecker (<i>Picus viridis</i>)	130	29/11/2019	TQ67 (TQ67B)
Great Spotted Woodpecker (<i>Dendrocopus major</i>)	42	17/11/2019	TQ67 (TQ67C)
Woodlark (<i>Lullula arborea</i>)	2	28/10/2016	"Botany Marsh
Skylark (<i>Alauda arvensis</i>)	192	29/11/2019	(TQ609754)"
Sand Martin (<i>Riparia riparia</i>)	73	06/09/2019	Northfleet (TQ6174)
Swallow (<i>Hirundo rustica</i>)	69	06/09/2019	Swanscombe Marsh (TQ6075)
House Martin (<i>Delichon urbica</i>)	73	06/09/2019	TQ67 (TQ67B)
Tree Pipit (<i>Anthus trivialis</i>)	3	19/09/2015	TQ67 (TQ67B)
Meadow Pipit (<i>Anthus pratensis</i>)	153	30/12/2019	TQ67 (TQ67B)
Rock Pipit (<i>Anthus petrosus</i>)	154	27/12/2019	TQ67 (TQ67B)
Water Pipit (<i>Anthus spinoletta</i>)	75	23/03/2019	Swanscombe Marsh (TQ6075)
Yellow Wagtail (<i>Motacilla flava</i>)	40	01/09/2016	TQ67 (TQ67C)
Grey Wagtail (<i>Motacilla cinerea</i>)	99	19/11/2019	Northfleet (TQ6174)
Pied Wagtail (<i>Motacilla alba yarrellii</i>)	80	30/09/2019	Swanscombe Marsh (TQ6075)
White Wagtail (<i>Motacilla alba alba</i>)	3	22/03/2014	TQ67 (TQ67B)
Waxwing (<i>Bombycilla garrulus</i>)	39	28/01/2017	TQ67 (TQ67C)
Wren (<i>Troglodytes troglodytes</i>)	125	01/09/2019	TQ67 (TQ67B)
Dunnock (<i>Prunella modularis</i>)	127	30/09/2019	Swanscombe Marsh (TQ6075)
Robin (<i>Erithacus rubecula</i>)	146	30/09/2019	Northfleet (TQ6174)
Nightingale (<i>Luscinia megarhynchos</i>)	59	31/05/2019	TQ67 (TQ67B)
Black Redstart (<i>Phoenicurus ochruros</i>)	11	22/10/2016	TQ67 (TQ67B)
Redstart (<i>Phoenicurus phoenicurus</i>)	8	01/05/2018	TQ67 (TQ67B)
Whinchat (<i>Saxicola rubetra</i>)	44	05/10/2019	TQ67 (TQ67B)
Stonechat (<i>Saxicola torquate</i>)	320	30/12/2019	Northfleet (TQ6174)
Wheatear (<i>Oenanthe Oenanthe</i>)	59	16/04/2019	Swanscombe Marsh (TQ6075)
Ring Ouzel (<i>Turdus torquatus</i>)	14	19/10/2018	Northfleet (TQ6174)
Blackbird (<i>Turdus merula</i>)	169	29/11/2019	TQ67 (TQ67C)
Fieldfare (<i>Turdus pilaris</i>)	79	27/12/2019	Northfleet (TQ6174)
Song Thrush (<i>Turdus philomelos</i>)	129	27/12/2019	Swanscombe Marsh (TQ6075)
Redwing (<i>Turdus iliacus</i>)	49	21/12/2019	TQ67 (TQ67B)
Mistle Thrush (<i>Turdus viscivorus</i>)	43	03/12/2019	Northfleet (TQ6174)
Cetti's Warbler (<i>Cettia cetti</i>)	376	30/12/2019	TQ67 (TQ67B)
Grasshopper Warbler (<i>Locustella naevia</i>)	33	02/06/2019	Northfleet (TQ6174)
Sedge Warbler (<i>Acrocephalus Schoenobaenus</i>)	100	24/08/2019	TQ67 (TQ67B)

Species	Number of records	Date of most recent record	Nearest record from site
Reed Warbler (<i>Acrocephalus scirpaceus</i>)	188	26/08/2019	Swanscombe Marsh (TQ6075)
Dartford Warbler (<i>Sylvia undata</i>)	11	16/01/2016	TQ67 (TQ67B)
Lesser Whitethroat (<i>Sylvia curruca</i>)	91	13/09/2019	TQ67 (TQ67B)
Whitethroat (<i>Sylvia communis</i>)	172	13/09/2019	TQ67 (TQ67B)
Garden Warbler (<i>Sylvia borin</i>)	11	22/06/2019	Swanscombe Marsh (TQ6075)
Blackcap (<i>Sylvia atricapilla</i>)	159	30/09/2019	TQ67 (TQ67B)
Chiffchaff (<i>Phylloscopus collybita</i>)	280	30/09/2019	TQ67 (TQ67B)
Willow Warbler (<i>Phylloscopus trochilus</i>)	46	06/09/2019	TQ67 (TQ67B)
Goldcrest (<i>Regulus regulus</i>)	28	11/03/2018	TQ67 (TQ67B)
Firecrest (<i>Regulus ignicapillus</i>)	4	03/04/2016	TQ67 (TQ67B)
Spotted Flycatcher (<i>Muscicapa striata</i>)	7	25/05/2018	TQ67 (TQ67B)
Bearded Tit (<i>Panurus biarmicus</i>)	116	03/11/2019	Northfleet (TQ6174)
Long-tailed Tit (<i>Aegithalos caudatus</i>)	67	16/11/2019	Northfleet (TQ6174)
Coal Tit (<i>Parus ater</i>)	8	23/04/2019	TQ67 (TQ67B)
Blue Tit (<i>Parus caeruleus</i>)	122	30/09/2019	Swanscombe Marsh (TQ6075)
Great Tit (<i>Parus major</i>)	101	28/03/2019	TQ67 (TQ67C)
Great Grey Shrike (<i>Lanius excubitor</i>)	3	22/10/2015	Swanscombe Marsh (TQ6075)
Jay (<i>Garrulus glandarius</i>)	59	17/11/2019	TQ67 (TQ67B)
Magpie (<i>Pica pica</i>)	239	21/12/2019	TQ67 (TQ67B)
Jackdaw (<i>Corvus monedula</i>)	82	19/11/2019	Swanscombe Marsh
Rook (<i>Corvus frugilegus</i>)	6	06/05/2019	(TQ6075)
Carrion Crow (<i>Corvis corone corone</i>)	146	30/09/2019	TQ67 (TQ67B)
Raven (<i>Corvus corax</i>)	231	30/12/2019	TQ67 (TQ67B)
Starling (<i>Sturnus vulgaris</i>)	138	30/09/2019	TQ67 (TQ67C)
House Sparrow (<i>Passer domesticus</i>)	66	30/09/2019	Northfleet (TQ6174)
Chaffinch (<i>Fringilla coelebs</i>)	177	30/09/2019	TQ67 (TQ67B)
Brambling (<i>Fringilla montifringilla</i>)	7	19/10/2018	"Botany Marsh
Greenfinch (<i>Carduelis chloris</i>)	112	24/08/2019	(TQ609754)"
Goldfinch (<i>Carduelis carduelis</i>)	156	30/09/2019	TQ67 (TQ67B)
Siskin (<i>Carduelis spinus</i>)	10	23/03/2019	TQ67 (TQ67B)
Linnet (<i>Carduelis cannabina</i>)	159	27/12/2019	TQ67 (TQ67B)
Lesser Redpoll (<i>Carduelis cabaret</i>)	11	19/10/2018	Northfleet (TQ6174)
Common Crossbill (<i>Loxia curvirostra</i>)	2	04/08/2005	TQ67 (TQ67B)
Bullfinch (<i>Pyrrhula pyrrhula</i>)	14	05/01/2018	TQ67 (TQ67B)
Yellowhammer (<i>Emberiza citronella</i>)	10	14/01/2018	Northfleet (TQ6174)
Reed Bunting (<i>Emberiza schoeniclus</i>)	225	30/12/2019	TQ67 (TQ67B)
Corn Bunting (<i>Miliaria calandra</i>)	31	27/09/2014	Northfleet (TQ6174)
Saker (<i>Falco cherrug</i>)	2	22/09/2016	Northfleet (TQ6174)
Mammals			

Species	Number of records	Date of most recent record	Nearest record from site
Natterer's Bat (<i>Myotis nattereri</i>)	37	18/08/2015	TQ616730
Leisler's Bat (<i>Nyctalus leisleri</i>)	6	11/08/2015	TQ602749
Nathusius' Pipistrelle (<i>Pipistrellus nathusii</i>)	2	24/09/2013	TQ592720
Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>)	17	28/07/2015	TQ611741
Reptiles			
Slow worm (<i>Anguis fragilis</i>)	9	25/04/2019	TQ5971974179
Common lizard (<i>Zootoca vivipara</i>)	>20	16/08/2020	TQ5971675603
Grass snake (<i>Natrix helvetica</i>)	>10	31/05/2020	TQ6011775662

5.3.3 The desk study also included historic records, over 10 years old, for protected species including:

- Great crested newt; and
- Water vole.

5.4 Phase 1 habitat survey

5.4.1 The results of the Phase 1 habitat survey are presented below. A Phase 1 habitat survey map of the Proposed Development Site is provided in Appendix A. This map illustrates the location and extent of the different habitat types recorded within the survey area at the Proposed Development Site. Photographs taken during the field survey are presented in Appendix B.

5.4.2 Table 5-3 details the weather conditions at the time of the surveys.

Table 5-2: Weather conditions during survey

Parameter	Survey 1 (PEA)
Date(s)	23/05/2022
Start time and finish time	10am to 2.30pm
Temperature (°C)	17
Cloud Cover (%)	100
Wind (Beaufort Scale)	3
Precipitation	Heavy rain from 1:30pm

5.5 Habitats

Table 3: RLB South

Buildings The site contains eight buildings. A mixture of brick and metal industrial buildings and including the built parts of the football stadium. No access was granted to assess these buildings externally or internally.		
Hardstanding and Ephemeral vegetation The majority of the site is hard standing which is a mixture of parking. Part of the vegetation on site is the Japanese knotweed (<i>Fallopia japonica</i>) stands.		
Amenity Grassland The amenity grassland is the habitat that makes up the maintained football pitch within the stadium.	Inaccessible.	

Introduced shrub and scattered trees Introduced shrub with scattered treelines around the site.	 A photograph showing a grassy area with a concrete curb in the foreground. A paved road runs along the curb. In the background, there is a large building with a blue roof and several parked cars. The sky is overcast.	
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Table 4: RLB North-East

Buildings The site contains four buildings. A mixture of brick and metal industrial buildings including a builders merchant, mechanics shop and an asphalt mixing plant. No access was granted to assess these buildings externally or internally.		
Hardstanding and Ephemeral vegetation The majority of the site is hard standing which is a mixture of parking and storage of aggregate piles for the sand and gravel works.	Inaccessible	
Hedge with Trees – Species Poor Introduced shrub with scattered treelines around the site. A few mature trees appear to be present. Viewed from satellite imagery, no access to this part of the site.		

Standing water Two un-covered standing water troughs are present within the sand and gravel works. Viewed from satellite imagery, no access to this part of the site.	Inaccessible	
Sea Wall The Thames Flood Wall provides a large metal and concrete barrier between the Thames and the site.		

Table 5: RLB North-West

Buildings The site contained multiple industrial units. All were deemed unsuitable for potential bat roosts due to the lack of insulation offered. The potential for nesting birds is present, though none were seen during the Phase 1 habitat survey. Also present were a number of shipping containers. These however did not provide any potential habitats to considered species.		
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Hardstanding and Ephemeral vegetation

The majority of the RLB North-West site was dominated by hardstanding carriageways and walkways. Ephemeral vegetation was present, though no species of significance were observed. Species included Oxford Ragwort (*Senecio squalidus*), Mallow species (*Malva* sp), Poppy (*Papaver pseudoorientale*), groundsel (*Senecio vulgaris*), Fennel (*Foeniculum*), red valerian (*Centranthus ruber*).



Introduced shrubs

Shrubs such as Buddleia (*Buddleia davidii*), Bramble (*Rubus fruticosus* agg.), Nettles (*Urtica dioica*), Grasses and Ivy (*Hedera helix*), and Rose spp.



Hedge with Trees – Species Poor

A number of scattered trees were found to be present on site. These include Ash (*Fraxinus excelsior*), Pussy Willow (*Salix caprea*), and Hawthorn (*Crataegus monogyna*).



5.6 Target Notes

5.6.1 The Target Note numbers within the extended Phase 1 habitat map in Appendix A correspond to the following points of ecological interest within the site.

- TN1 – Intertidal mudflats (which could support aquatic invertebrates)
- TN2 – Shingle above high tide mark (little ringed plover nesting habitat)
- TN3 - Northfleet Harbour (Cetti's warbler nesting habitat)

6 Ecological Features

6.1.1 The presence of Ecological Features within the Zone of Influence of the Proposed Development, and an evaluation of their importance based on the findings of the Desk Study, extended Phase 1 habitat survey is provided below.

Feature	Likelihood of Occurrence	Rationale
Designated Sites – Statutory & Non-Statutory		
Designated sites	Present (within search area)	Further screening is needed to assess the impact on the SSSI of Swanscombe Peninsula. This includes further assessment of the intertidal mudflats which may be of importance as foraging habitat for the birds of the SSSI.
Priority Habitats		
Mudflats	Present (adjacent)	Mudflats present adjacent to the north-east boundary of the site. Potential indirect impacts.
Invertebrates		
Aquatic Invertebrates	Likely present (adjacent to site)	The mudflats have the potential to support aquatic invertebrates. Information gathered from the bird surveys should provide detail on the quality and quantity of aquatic invertebrates and their importance as a food resource for birds.
Mammals		
Bats	Likely absent (roosting)	No suitable features were found for roosting bats. Further ground level assessment surveys are needed in areas where no access was granted.
Hedgehog	Moderate	RLB North-West is adjacent to Swanscombe peninsula SSSI, specifically habitats such as hedgerow, tree line and small stands of woodland. These are suitable habitats for hedgehog and consideration should be given to construction to ensure this species is not harmed.
Birds		
Nesting Birds	High	A wide range of passerine bird species were recorded in the desk study. The habitats could support local assemblages of birds which might use the buildings and vegetation to nest within.
Schedule 1 Birds	High	Suitable habitat for black redstart (<i>Phoenicurus ochruros</i>) to nest on site and suitable nesting habitat surrounding the site for little ringed plover (<i>Charadrius dubius</i>), Cetti's warbler (<i>Cettia cetti</i>) and marsh harrier (<i>Circus aeruginosus</i>).
Invasive Plants		
Japanese knotweed	High	A significant area of Japanese knotweed (<i>Fallopia japonica</i>) is present on the south area of the site.

- 6.1.2 Based on the findings of the PEA, the following features of ecological importance were either (a) assessed as likely to be absent from the Site, (b) have Negligible nature conservation value; or (c) are not within the Zone of Influence of the Proposed Development.

- 6.1.3 Important ecological features (IEFs) that will be considered in the ecological assessment include, but are not limited to, the following:
- Swanscombe Peninsula SSSI (incorporating Botany Marshes LWS)- National;
 - Ebbsfleet Marshes LWS - Local;
 - River Thames SINC - Metropolitan;
 - Nesting bird habitat - Local;
 - Schedule 1 birds (including little ringed plover and black redstart) - National.
 - Aquatic invertebrates within the mudflat habitat – County
- 6.1.4 The remaining non-statutory designations are not considered to be affected by the Proposed Development and have been scoped out of the EclA as an IEF owing to their spatial separation and/or lack of ecological connections with the Proposed Development.
- 6.1.5 The following Potential Ecological Features of the Site are therefore not considered further
- Reptiles;
 - Badgers;
 - Great crested newts; and
 - Water vole.

7 Potential impacts on habitats within the site

RLB South

7.1 Designated Sites & Priority Habitats

- 7.1.1 The site is located within close proximity to Ebbsfleet Marshes LWS. There are potential impacts on this non-statutory designated site from the proposed works such as habitat fragmentation, loss of connectivity and pollution.

7.2 Habitats

- 7.2.1 The ecological importance of the terrestrial habitats present within this section of the Site is low, the impact is considered to be minimal. The minimal ecological disturbance would be contained on the Site only and will not impact the ecological habitats surrounding the Site.

7.3 Protected / Notable Species

- 7.3.1 The following section considers the likely impact of the proposals on protected or notable species. This is based on those species for which potentially suitable habitat occurs within or adjacent to the Proposed Development Site.

Bats

- 7.3.2 No evidence of bats was recorded during the external assessments of the buildings at Northfleet, Gravesham. The buildings were well sealed and offered very limited opportunities. The buildings and structures, when considering the surrounding area and high levels of disturbance from humans and lighting, did not support any suitable roosting features, and are defined as having a negligible potential to support roosting bats in accordance with the BCT criteria.

Nesting birds

- 7.3.3 The site provides a low potential for nesting black redstart. Black redstart requires areas of sparse wasteland vegetation and stony ground for feeding and tall and complex structures with ledges and crevices for nesting, which are currently absent on the Site. Existing levels of disturbance on the Site and in the surrounding area would also likely discourage black redstart from nesting on the Site, even if suitable habitat was present.

Invertebrates

- 7.3.4 The Site includes limited habitat for invertebrates. The presence of invertebrates on Site and within the local area is negligible.

Other mammals

- 7.3.5 The Site provides some suitable habitat for common mammals, such as red fox (*Vulpes vulpes*) including the car park which red foxes could use as a place of refuge. Common wild mammals, such as red fox, may venture onto the Site during the demolition and construction of the Proposed Development and there is a possibility that they may be killed or injured.

Plants

- 7.3.6 A significant area of Japanese knotweed (*Fallopia japonica*) is present on site, noted in the Phase 1 map. A management plan is required to define the areas of land likely to be contaminated by knotweed rhizomes, exclusion zones and a methodology for on-site treatment or appropriate removal of contaminated land.
- 7.3.7 Japanese knotweed is listed under the Wildlife and Countryside Act 1981 (as amended) Schedule 9 Part II. Section 14 prohibits planting in the wild of plants listed in Part II of Schedule 9, or otherwise causing the plants to grow there.

RLB North-East

7.4 Designated Sites & Priority Habitats

- 7.4.1 The site is located within close proximity to the River Thames. There are potential impacts on this non-statutory designated site from the proposed works such as habitat loss and pollution.

7.5 Habitats

- 7.5.1 The ecological importance of the terrestrial habitats present within this section of the Site is low, the impact is considered to be minimal. There is however a risk that ecological disturbance could impact the ecological habitats surrounding the Site in particular the intertidal mudflats next to the site and Northfleet harbour in the absence of mitigation.

7.6 Protected / Notable Species

- 7.6.1 The following section considers the likely impact of the proposals on protected or notable species. This is based on those species for which potentially suitable habitat occurs within or adjacent to the Proposed Development Site. Please refer to Table 3-2 for the definitions of the scale of constraints.

Bats

- 7.6.2 Access was not available to carry out external assessments of the buildings within RLB North-East at Northfleet, Gravesham. From satellite imagery it appears that the buildings are mainly large, open corrugated metal factory buildings which are likely to offer very limited opportunities for bat roosting. The buildings and structures are subject to high levels of disturbance from humans and lighting meaning there is limited connectivity to surrounding habitat. Further assessment is required when access is approved to assess the potential of the buildings to support roosting bats in accordance with the BCT criteria.
- 7.6.3 No access was available to carry out external inspections on the trees within the tree lines and hedges around the site. From satellite imagery some mature trees appear to present however there is limited connectivity between these and other suitable bat habitat. Further assessment is required when access is approved to assess the potential of the trees to support roosting bats in accordance with the BCT criteria and to assess if any of the treeline are acting as flight lines for bats in the surrounding area.

Birds

- 7.6.4 The site provides a moderate potential for nesting black redstart. Black redstart requires areas of sparse wasteland vegetation and stony ground for feeding provided in the sand and gravel works aggregate piles and tall and complex structures with ledges and crevices for nesting which may be present in some of the structures and buildings around the sand and gravel works. Existing levels of disturbance on the Site are likely to discourage black redstart from nesting on the site due to frequent movements of the aggregate. However, despite the disturbance, further assessment is needed in the key black redstart breeding season due to the amount of suitable habitat present.
- 7.6.5 The site provides potential foraging and nesting habitat for Little Ringer Plover in the form of the aggregate piles. No standing water is present in this area and the Thames Flood Wall blocks the connectivity of this habitat to the Thames. As Little Ringed Plover need to be able to walk their chicks to water source habitats for foraging before they have fledged the site itself is considered low suitability for nesting Little Ringed Plover.
- 7.6.6 The site provides good habitat for nesting birds in both the ground level vegetation and trees within the site.
- 7.6.7 Buildings and structures within the sand and gravel works may provide suitable nesting habitat. A full assessment has not been made of each structure due to the lack of access.

Invertebrates

- 7.6.8 The Site includes limited habitat for invertebrates and only small, isolated pockets of larval food sources. The presence of invertebrates on Site and within the local area is negligible.

Other mammals

- 7.6.9 The Site provides some suitable habitat for common mammals, such as red fox (*Vulpes vulpes*) including the car park which red foxes could use as a place of refuge. Common wild mammals, such as red fox, may venture onto the Site during the demolition and construction of the Proposed Development and there is a possibility that they may be killed or injured.
- 7.6.10 The site does not provide sufficient foraging or connected habitat for badger (*Meles meles*).

Plants

- 7.6.11 No INNS or notable plant species were sighted in this area during the survey however due to the lack of access a further walkover survey is suggested when access is permitted due to the presence of Japanese knotweed (*Fallopia japonica*) in the RLB South area of the site.

RLB North-West

7.7 Designated Sites & Priority Habitats

- 7.7.1 The site is located adjacent Swanscombe Peninsula SSSI. There are potential impacts on this statutory designated site from the proposed works such as pollution and shading.

7.8 Habitats

- 7.8.1 The ecological importance of the terrestrial habitats present within this section of the Site is low, the impact is considered to be minimal. The minimal ecological disturbance would be contained on the Site. There is the potential for ecological habitats surrounding the Site to be impacted from pollution and shading.

7.9 Protected / Notable Species

- 7.9.1 The following section considers the likely impact of the proposals on protected or notable species. This is based on those species for which potentially suitable habitat occurs within or adjacent to the Proposed Development Site.

Bats

- 7.9.2 No evidence of bats was recorded during the external assessments of the buildings at Northfleet, Gravesham. The buildings were well sealed and offered very limited opportunities. The buildings and structures, when considering the surrounding area and high levels of disturbance from humans and lighting, did not support any suitable roosting features, and are defined as having a negligible potential to support roosting bats in accordance with the BCT criteria.

Nesting birds

- 7.9.3 The site provides a low potential for nesting black redstart. Black redstart requires areas of sparse wasteland vegetation and stony ground for feeding and tall and complex structures with

ledges and crevices for nesting, which are currently absent on the Site. Existing levels of disturbance on the Site and in the surrounding area would also likely discourage black redstart from nesting on the Site, even if suitable habitat was present.

- 7.9.4 There is some potential for other nesting birds on site. Buildings offer suitable areas to nest on the roofs, as well as the hedgerow with trees present.

Invertebrates

- 7.9.5 The Site includes limited habitat for invertebrates. The presence of invertebrates on Site and within the local area is negligible.

Other mammals

- 7.9.6 The Site provides some suitable habitat for common mammals, such as red fox (*Vulpes vulpes*) including the car park which red foxes could use as a place of refuge. Common wild mammals, such as red fox, may venture onto the Site during the demolition and construction of the Proposed Development and there is a possibility that they may be killed or injured.
- 7.9.7 The desk study recorded presence of hedgehog near Site. As RLB North-West is adjacent to woodland, hedgerow and tree lines there is the potential for hedgehog to access the site during demolition and construction of the Proposed Development, with the potential they may be killed or injured.

Plants

- 7.9.8 No stands of significant vegetation were discovered on site.

8 Potential impacts to habitats surrounding the site

The Thames

- 8.1.1 Intertidal mudflats are present on the north-east boundary of the site at low tide, Target Note 1 in the map on Appendix A, which extend for at least 50m into the Thames. These are gently sloping mudflats which turn into a shingle beached area which is above the tide line on the edge of the flood wall of the Thames. Some commercial piers/ loading docks are present in this area providing further habitat for food for waterbirds. This habitat is connected by the Thames to SSSI site of Swanscombe marshes around 600m along the Thames. The SSSI is known to support notable species such shelduck (*Tadorna tadorna*) and little egret (*Egretta garzetta*) in both its saltmarsh habitats and intertidal mudflats and Schedule 1 species such as little ringed plover (*Charadrius dubius*).
- 8.1.2 During the PEA a range of waterbirds were seen foraging on the mudflats next to the site including shelduck along with herring gulls, black headed gulls, female shoveler with young and mallards. It is suggested that further assessment in the form of bird surveys is needed to understand the use of the mudflats for foraging by waterbirds which may be coming from the SSSI both in summer and winter months to cover both breeding and overwintering species.
- 8.1.3 The gravel beach area, Target Note 2 on the map in Appendix A, is suitable for little ringed plover to use for nesting (a Schedule 1 species) which are known to be in the area. Further assessment is required within the breeding season (late April- July) when access is approved

to determine if little ringed plover is using this area for nesting. Little ringed plover will return to the same nesting sites each year where possible.

- 8.1.4 Both the intertidal mudflats and the gravel beach area may be affected by drainage from the scheme and visual and noise disturbance from the construction works.
- 8.1.5 The mudflats have the potential to support aquatic invertebrates. Information gathered from the bird surveys should provide detail on the quality and quantity of aquatic invertebrates and their importance as a food resource for birds. Further information gathered as part of nearby planning applications will be reviewed to understand aquatic invertebrates present in the mudflats.

Northfleet Harbour

- 8.1.6 Northfleet harbour, Target Note 3 in the habitat map in Appendix A, provides suitable nesting, foraging and overwintering habitat to a range of birds and waterfowl including Schedule 1 birds which have additional protections from disturbance whilst nesting.
- 8.1.7 Cetti's Warbler was seen and heard during the PEA in the Northfleet harbour area adjacent to south boundary of the RLB North-East area of the site within suitable breeding habitat. Whilst it is more likely that the Swanscombe Peninsula would be more favourable, the reedbeds at the northfleet harbour may also provide suitable nesting habitat for marsh harriers (*Circus aeruginosus*).
- 8.1.8 Further assessment and management plans may be needed during planning of the construction phase of the works to limit any impacts from the scheme on the wildlife of Northfleet Harbour.

Swanscombe Peninsula SSSI

- 8.1.9 Swanscombe Peninsula is a nationally designated site for breeding birds, invertebrates and flowering plants. RLB North-West is directly adjacent to this SSSI. There is the potential for pollution to impact this SSSI during construction. Recreational disturbance due to an increase in residential properties could further impact the SSSI.

9 Cumulative Effects

- 9.1.1 Cumulative effects generally occur where there may be simultaneous or prolonged similar effects on the same habitats or species populations as a result of two or more developments of the same type and scale, or where the consideration of other schemes would increase an effect identified. Where other schemes are relevant, these will be considered in conjunction with the Proposed Development.
- 9.1.2 A more detailed assessment will take place as part of the work for the ES once the full range of potential plans/projects has been determined. The potential for effects from each of these plans/projects to interact with the Proposed Development will then be determined and where interactions are identified the potential significance of any cumulative effects will be assessed.
- 9.1.3 Legislation and planning policy require nearby schemes to avoid or mitigate negative impacts. Planning policy requires schemes to avoid or mitigate negative impacts which in theory should reduce cumulative impacts to a level that is non-significant.

- 9.1.4 The Proposed Development aims to compliment and enhance the mitigation measures set out as part of the London Resort project to reduce potential cumulative likely significant effects on the SSSI associated with the London Resort and recreational pressures.

10 Compensation & Recommendations

10.1 Designated sites

Swanscombe Peninsula SSSI

- 10.1.1 The site is adjacent to Swanscombe Peninsula (SSSI) and four non-statutory sites. It is advised buffer zones be in place to protect areas of high ecological value surrounding the site. Buffer zones should be planted with appropriate native vegetation to form a natural buffer zone which provides and ecological corridor into the site. Pollution measures should be incorporated into a Construction Environmental Management Plan (CEMP).
- 10.1.2 Access should be managed appropriately from the Proposed Development into the SSSI. For example, fences should be erected to reduce pedestrian footfall to the north-west of the site.
- 10.1.3 Adequate green spaces should be provided to reduce visitor pressure on the designated sites and provide connectivity around the site for wildlife.

The River Thames SMINC

- 10.1.4 An ecological lighting strategy will set out measures to reduce effects on ecology including the use of dark buffer zones along the tidal River Thames to reduce the effects of artificial lighting on fish and marine mammals.
- 10.1.5 Prevention of hydrological impacts through adherence to an appropriate Surface Water Management Strategy
- 10.1.6 A Sustainable Drainage System to both avoid or mitigate any potential effects on water quality and flow within sensitive habitats, and to provide suitable hydrological conditions for new wetland habitats of ecological value to become established

10.2 Nesting birds

- 10.2.1 All birds, their active nests and eggs are protected from harm under the WCA. This legislation makes it an offence to kill, injure or take any wild bird or to take, damage or destroy the nest of any wild bird while that nest is in use or being built. An offence could therefore occur during clearance and refurbishment work on the Site.
- 10.2.2 The buildings and vegetation could support nesting birds. To ensure legal compliance, clearance of habitat suitable for nesting birds (all vegetation and buildings) should be undertaken outside the nesting bird season (i.e. between October and February inclusive). However, should this not be practical, the following measures must be adhered to:
- Works must be undertaken in line with a Precautionary Working Method Statement (PWMS);
 - Prior to clearance, an ecologist should carry out a nesting bird inspection of areas to be cleared;

- Should any active birds' nests be found, the work may not take place within an appropriate established buffer zone (usually 5m), which should be left intact until it has been confirmed that the young have fledged, and the nest(s) is no longer in use.

10.2.3 Schedule 1 birds have additional protections surrounding disturbance of the adults and chicks when they are nesting under the WCA. In areas where Schedule 1 birds have the potential to nest on the site directly, specific surveys should be undertaken to assess if breeding is occurring such as black redstarts and Little Ringed Plover. If a Schedule 1 bird is found to be nesting on site, then;

- The Precautionary Working Method Statement (PWMS) must be updated to reflect the nesting Schedule 1 species location and appropriate mitigation measures by a suitably qualified ecologist.
- Works must be undertaken in line with the Precautionary Working Method Statement (PWMS) which may include measures such as additional buffer zones and alterations in the timing of some works.

10.2.4 Where suitable nesting habitat is present adjacent to the site for Schedule 1 birds such as the gravel beach area and Northfleet harbour, works which are likely to cause disturbance (physical, visual and noise) should be planned to occur outside of the main breeding season for these species. However, should this not be practical, the following measures must be adhered to:

- Works must be undertaken in line with a Precautionary Working Method Statement (PWMS);
- Any mitigation measures suggested within this method statement should be implemented on site. Mitigation measures may include visual screening, noise barriers, soft starts to machinery to provide habituation and monitoring surveys for signs of disturbance.

10.3 Other birds

10.3.1 It is suggested that further assessment in the form of bird surveys is needed to understand the use of the mudflats for foraging by waterbirds which may be coming from the SSSI both in summer and winter months to cover both breeding and overwintering species.

10.3.2 Both the intertidal mudflats and the gravel beach area may be affected by drainage from the scheme and visual and noise disturbance from the construction works. Therefore, it is important to understand the importance of the habitats in this area for the birds so any impacts from the scheme can be minimised.

10.3.3 Mitigation measures may include input into the drainage plans to minimise impacts to the mudflats and gravel beach area.

10.3.4 A Sustainable Drainage System to both avoid or mitigate any potential effects on water quality and flow within sensitive habitats, and to provide suitable hydrological conditions for new wetland habitats of ecological value to become established, will be developed. The Drainage Strategy which supports the planning application will integrate such measures.

10.4 Wild mammals

10.4.1 All wild mammals, including red fox, are protected by the Wild Mammals (Protection) Act 1996 which makes it an offence to intentionally cause any wild mammal unnecessary suffering by

certain methods. Common wild mammals, such as red fox and hedgehog may venture onto the Site during the refurbishment and construction of the Proposed Development.

- 10.4.2 To avoid an offence, measures should be employed during the construction phase, including the covering of all deep holes and trenches overnight and/or the provision of planked escape routes for any wildlife that may fall in. In addition, any liquids held on-Site should be stored in a secure lock-up. These measures should be implemented through a Demolition and Construction Method Statement (DCMS) or similar. Hoarding around the perimeter of the Site should also minimise the likelihood of any wild mammals gaining access to the Site.

10.5 Invasive plants

- 10.5.1 Japanese knotweed is listed under the Wildlife and Countryside Act 1981 (as amended) Schedule 9 Part II. Section 14 prohibits planting in the wild of plants listed in Part II of Schedule 9, or otherwise causing the plants to grow there.
- 10.5.1 To prevent the spreading of JKW, the stems should be removed. There are multiple techniques to achieve this.
- 10.5.2 The habitat management plan should outline the removal, an ECoW or suitably qualified person should supervise the removal and management of the invasive species.

10.6 Habitat Management Plan

- 10.6.1 A Habitat Management Plan / Landscape Management Plan should be developed for the Site. The aim of the plan would be to facilitate the appropriate maintenance of landscaped areas and to provide replacement planting, as necessary. The plan would also outline proposed management measures to maintain the ecological value of any new habitats created, such as biodiverse roof(s), brown roofs for habitat for black redstart and areas of new planting.

10.7 Compensation for Cumulative Effects on Swanscombe Peninsula SSSI

- 10.7.1 The following measures are proposed to reduce recreational pressure from the Proposed Development in-combination with the London Resort project to a level that is non-significant:
- Pollution measures should be incorporated into a Construction Environmental Management Plan (CEMP).
 - Access should be managed appropriately from the Proposed Development into the SSSI, for example protective hoarding could be erected to reduce pedestrian footfall to the north-west of the site;
 - Brown and green roofs will be provided in the Proposed Development with a clear aim for wildlife benefit rather than human activities with bug hotels, log piles and refuges incorporated.
 - Further woodland belt and hedgerow (native) planting to provide additional screening along the SSSI boundary. Ideally this habitat will be created prior to the construction to add further protection to the SSSI

- SANGs will be incorporated into the design to provide appropriate levels of green space for residents from the Proposed Development to use.
- Contributions to the management of the SSSI (in the form of payments) could be provided if deemed necessary. These payments would support further management and protection of ecological features within the SSSI.

10.7.2 Both projects in-combination have the potential to appropriately manage recreational disturbance to a level that is not significant by enhancing and expanding the current ecological features associated with the SSSI and to increase the ecological connectivity from the SSSI to the wider area.

11 Enhancements

11.1.1 Planning policy at the national and local level and strategic biodiversity partnerships encourage inclusion of ecological enhancements in development projects. Ecological enhancements can also contribute to green infrastructure and ecosystem services such as storm water attenuation and reducing the urban heat island effect. The following measures would be suitable for integration into the Proposed Development site's design but are not a requirement.

Native tree and scrub planting

- 11.1.2 It is recommended that the native trees and hedgerows be retained and protected during the refurbishment and construction of the Proposed Development. It is recommended that native trees and scrub species are included within any landscaping to enhance the site.
- 11.1.3 It is recommended wildlife planting should be integral to the soft landscape plans and should include native species and/or species of recognised wildlife value. The use of nectar-rich and berry producing plants will attract a wider range of insects, birds and mammals and continue to accommodate those already utilising the site. Where possible, larger shrubs should be under-planted to create greater structure and cover for wildlife. The use of block planting of single species should be avoided in favour of a higher diversity of plant types per square metre.

Good horticultural practice

- 11.1.4 Good horticultural practice should be utilised, including the use of peat-free composts, mulches and soil conditioners, native plants with local provenance and avoidance of the use of invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

Installation of Green Roofs

- 11.1.5 It is recommended that green roofs containing intensive planting are provided on the refurbished buildings. To maximise biodiversity, this should comprise of the intensive planting of a range of native grasses and flowering plants. This would provide habitat for birds and invertebrates and would represent a valuable ecological enhancement. This should ideally only be accessible for maintenance purposes, to minimise disturbance to wildlife. If the roof terraces are to be open to the public, it is recommended that the intensive planting is kept off walking routes to avoid disturbance.
- 11.1.6 Other features could be installed on an intensive green roof terrace, to enhance its ecological value. A bird bath and bird feeders could be provided, to provide washing and feeding

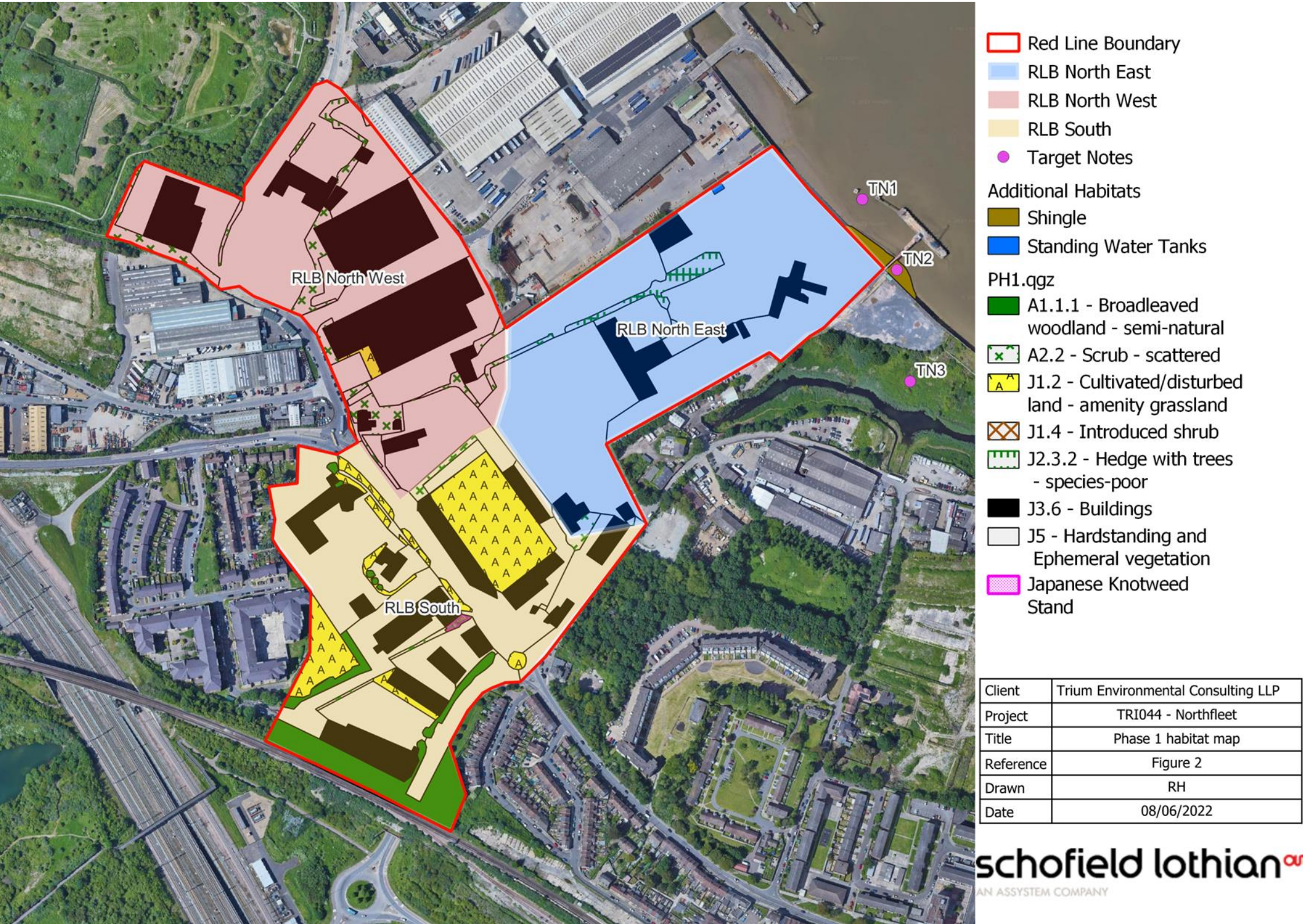
opportunities for birds. Stone or log piles would also provide shelter for a variety of invertebrates. An insect house could also be installed.

- 11.1.7 Brown roof terraces could also be considered with the addition of pebble and boulder areas to create contoured habitat for black redstarts. This should only be used on areas not open to the public to limit disturbance.
- 11.1.8 Small stone piles using the pebbles around the site could added within both the green and brown roofs. These dry areas can warm up quickly and will benefit a wide variety of species such as butterflies bees and wasps (Mining bees and Solitary wasps), beetles and spiders
- 11.1.9 Bee banks could be created which are particularly beneficial for solitary bees and wasps to dig nest burrows into. These can easily be created by using sand to create mounds which are south facing so that they receive the most sunshine throughout the day.
- 11.1.10Vegetation arisings from the maintenance of planted areas could be places in small piles on the green roof areas to provide overwintering habitat for invertebrates

Provision of wildlife boxes

- 11.1.11Bird boxes could be installed within the tree planting on the ground and on the roof amongst the intense green roof terraces. Swift boxes would be advised for the intense green roof terraces as swifts can fly up to 10,000 feet.
- 11.1.12Insect houses can be installed both within the ground level intensive planting and on the intense green roof terraces.
- 11.1.13Bird boxes should be installed on the refurbished buildings, to provide roosting habitat for bats and nesting habitat for birds, respectively. These could be installed onto or within the walls or on the roof of the buildings.
- 11.1.14Bird boxes should be installed with different sized holes (including both 32mm and 26mm diameter) to cater for different species, including notable species that could occur on the site. This should include nest boxes for house sparrow on the proposed buildings, such as the Schwegler 1SP Sparrow Terrace. A further suggestion is the Schwegler No 24 Brick Box and Schwegler 1B Bird Box, including both 32mm and 26mm diameter holes. These boxes should also be located adjacent to any landscaped areas, at least 3m above the ground and facing southeast to north, to avoid direct sunlight and the heaviest rain.
- 11.1.15Small, open fronted bird boxes could be attached to the underside of the ledges or terraces on in order to provide nesting space for black redstarts and other birds such as robin.

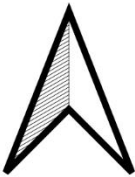
Appendix A Phase 1 Habitat Survey Map



Appendix B Constraints Map



- Red Line Boundary
- Sch1 birds
- Japanese Knotweed
- Sites of Special Scientific Interest
- Priority Habitat Inventory
 - Coastal and floodplain grazing marsh
 - Coastal saltmarsh
 - Deciduous woodland
 - Mudflats
 - No main habitat but additional habitats present



Client	Trium Environmental Consulting LLP
Project	TRI044
Title	Constraints Map
Reference	N/A
Drawn	RH
Date	26/05/22

Appendix C Relevant Legislation

C.1 The Conservation of Habitats and Species Regulations 2017

- C.1.1 The Conservation of Habitats and Species Regulations 2017 consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. They also transpose elements of the EU Wild Birds Directive in England and Wales. The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.
- C.1.2 Under the Regulations, competent authorities i.e. government departments and public bodies, have a general duty to have regard to the EC Habitats Directive and Wild Birds Directive. The Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species (listed in Annexes I and II of the Habitats Directive respectively) to the European Commission. The Regulations also require the compilation and maintenance of a register of European sites, to include SACs and Special Protection Areas (SPAs) classified under Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive). These sites form a network termed Natura 2000. The Regulations enable the country agencies to enter into management agreements on land within or adjacent to a European site, in order to secure its conservation. The Regulations also provide for the control of potentially damaging operations, whereby consent from the country agency may only be granted once it has been shown through appropriate assessment that the proposed operation will not adversely affect the integrity of the site. When considering potentially damaging operations, the precautionary principle applies i.e. consent cannot be given unless it is ascertained that there will be no adverse effect on the integrity of the site.
- C.1.3 The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4. However, these actions can be made lawful through the granting of licenses by the appropriate authorities. Licenses may be granted for a few purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on wild population of the species concerned.

C.2 The Wildlife and Countryside Act (WCA) 1981 (as amended)

- C.2.1 The WCA, as amended, consolidates and amends pre-existing national wildlife legislation in order to implement the Bern Convention and the Birds Directive. It complements the Habitat Regulations 2010 (as amended), offering protection to a wider range of species. The Act also provides for the designation and protection of national conservation sites of value for their floral, faunal or geological features, termed Sites of Special Scientific Interest (SSSIs).
- C.2.2 Schedules of the act provide lists of protected species, both flora and fauna, and detail the possible offences that apply to these species. All relevant species-specific legislation is detailed later in this Appendix.
- C.2.3 Schedule 1 – Part 1 relates to birds and their young, for which it is an offence to intentionally or recklessly disturb at, on or near an 'active' nest. Schedule 1 – Part 2 relates to birds afforded

special protection during the close season which is 1 February to 31 August (21 February to 31 August below high-water mark), but which may be killed or taken outside this period.

C.3 The Countryside and Rights of Way (CROW) Act 2000

- C.3.1 The CROW Act, introduced in England and Wales in 2000, amends and strengthens existing wildlife.
- C.3.2 Legislation detailed in the WCA places a duty on government departments and the National Assembly for Wales to have regard for biodiversity and provides increased powers for the protection and maintenance of SSSIs. The Act also contains lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.

C.4 The Natural Environment and Rural Communities (NERC) Act 2006

- C.4.1 Section 40 of the NERC Act places a duty upon all local authorities and public bodies in England and Wales to promote and enhance biodiversity in all their functions. Sections 41 (England) and 42 (Wales) list habitats and species of principal importance to the conservation of biodiversity. These lists superseded Section 74 of the CROW Act 2000.

C.5 UK Biodiversity Action Plan

- C.5.1 The United Kingdom Biodiversity Action Plan (UK BAP), first published in 1994 and updated in 2007, was a government initiative designed to implement the requirements of the Convention of Biological Diversity to conserve and enhance species and habitats. The UK BAP contained a list of priority habitats and species of conservation concern in the UK and outlined biodiversity initiatives designed to enhance their conservation status. Lists of Broad and Local habitats were also included. The priority habitats and species correlated with those listed on Section 41 and 42 of the NERC Act.
- C.5.2 The UK BAP required that conservation of biodiversity be addressed at a County level through the production of Local BAPs. These were complementary to the UK BAP, however, were targeted towards species of conservation concern characteristic of each area. In addition, several local authorities and large organisations have produced their own BAPs.

C.6 Species and Habitats of Material Consideration for Planning in England

- C.6.1 In 2011, the government published the 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services' to replace the previous England Biodiversity Strategy. In 2012 the UK BAP was replaced by the UK Post-2010 Biodiversity Framework.
- C.6.2 Previous planning policy (and some supporting guidance which is still current, e.g. ODPM Circular 06/2005, now under revision), refers to UK BAP habitats and species as being a material consideration in the planning process. Equally many local plans still refer to BAP priority habitats and species. Both remain as material considerations in the planning process, although such habitats and species may now also be described as Species and Habitats of Principal Importance for Conservation in England, or simply priority habitats and priority species under the UK Post-2010 Biodiversity Framework. The list of habitats and species remains unchanged and is still derived from Section 41 list of the Natural Environment and Rural Communities (NERC) Act 2006. As was previously the case when it was a BAP priority species hen harrier continues to be regarded as a priority species although it does not appear on the Section 41 list.

C.7 Birds of Conservation Concern 4: the Red List for Birds

- C.7.1 Birds of Conservation Concern 4: the Red List for Birds was published in December 2015.
- C.7.2 Commonly referred to as the UK Red List for birds, this is the fourth review of the status of birds in the UK, Channel Islands and Isle of Man, and updates the last assessment in 2009. Using standardised criteria, 244 species with breeding, passage or wintering populations in the UK were assessed by experts from a range of bird NGOs and assigned to the Red, Amber or Green lists of conservation concern.

C.8 Protection of Badgers Act 1992

- C.8.1 Under the Protection of Badgers Act 1992, it is an offence to disturb a badger in its sett or damage, destroy or obstruct access to a badger sett. If the proposed work will involve works coming within 30m of an active badger sett Natural England's standing advice will need to be consulted and a mitigation plan drawn up. After which a licence will need to be applied for from Natural England to undertake any works. It should be noted that badgers cannot be captured and moved purely for development purposes.

Appendix D About Schofield Lothian

- D.1.1 Schofield Lothian is an infrastructure consultancy delivering added value professional services to Clients.
- D.1.2 Combining over 40 years of expertise in infrastructure with Assystem's 'Engineering Powered by Digital' approach for truly unparalleled added value professional services
- D.1.3 We have in-depth expertise in these service areas:
- Consents & Engagement Services
 - Environment & Sustainability Services
 - Project Management Services
 - Commercial Management Services (Quantity Surveying, Estimating & Contracts)
- D.1.4 Our customised Client Teams bring Client's expertise and experience to deliver an effective and sustainable solution for your project (via secondment, service teams or advisory).
- D.1.5 Through our values we have a vibrant and successful company, where people can thrive, and Clients prosper.
- D.1.6 We believe passionately in delivering added value through a collaborative approach and have the flexibility to respond quickly to facilitate the client's requirements.

D.2 Values

- D.2.1 Our values are part of our DNA. They guide the way we work with each other, with our clients, and within our communities. Our values are:
- Honesty – we tell the truth, we will be sincere and fair
 - Respect – we show regard and consideration for the opinions of other
 - Integrity & Trust – we demonstrate strong moral principles and are trustworthy
 - Collaboration – we work to achieve shared goals
 - Accountable – we are accountable and responsible for our actions and results
- D.2.2 Through these values we have a vibrant and successful company where people can thrive, and clients prosper. They define our culture.

D.3 Accreditations

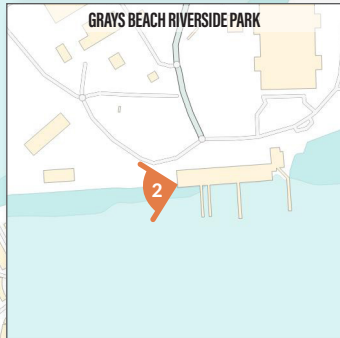
- D.3.1 Quality processes are very important to us especially in delivering our professional services to Clients. In addition to our in-house Business System (SBS), which outlines the processes and procedures within the company, we are accredited to these international recognised standards:
- ISO 9001 Quality Management System
 - ISO 14001 Environmental Management System
 - BS OHSAS 18001 Health & Safety Management System
 - IIP Investors in People
- D.3.2 We are also accredited to the following industry standards: RISQS Railway Industry Supplier Qualification Scheme, UDVB Utilities and ConstructionOnline.

Schofield Lothian Limited
20 Old Bailey
London EC4M 7AN

www.schofieldlothian.com
LinkedIn
[@schofieldlothia](#)

Annex D: TVIA Supporting Maps⁸⁴

⁸⁴ Indicative site boundary shown in figures.



VIEW LOCATION PLAN

Application Site (indicative)

LOCATION:
Northfleet Central

DATE:
June 2022

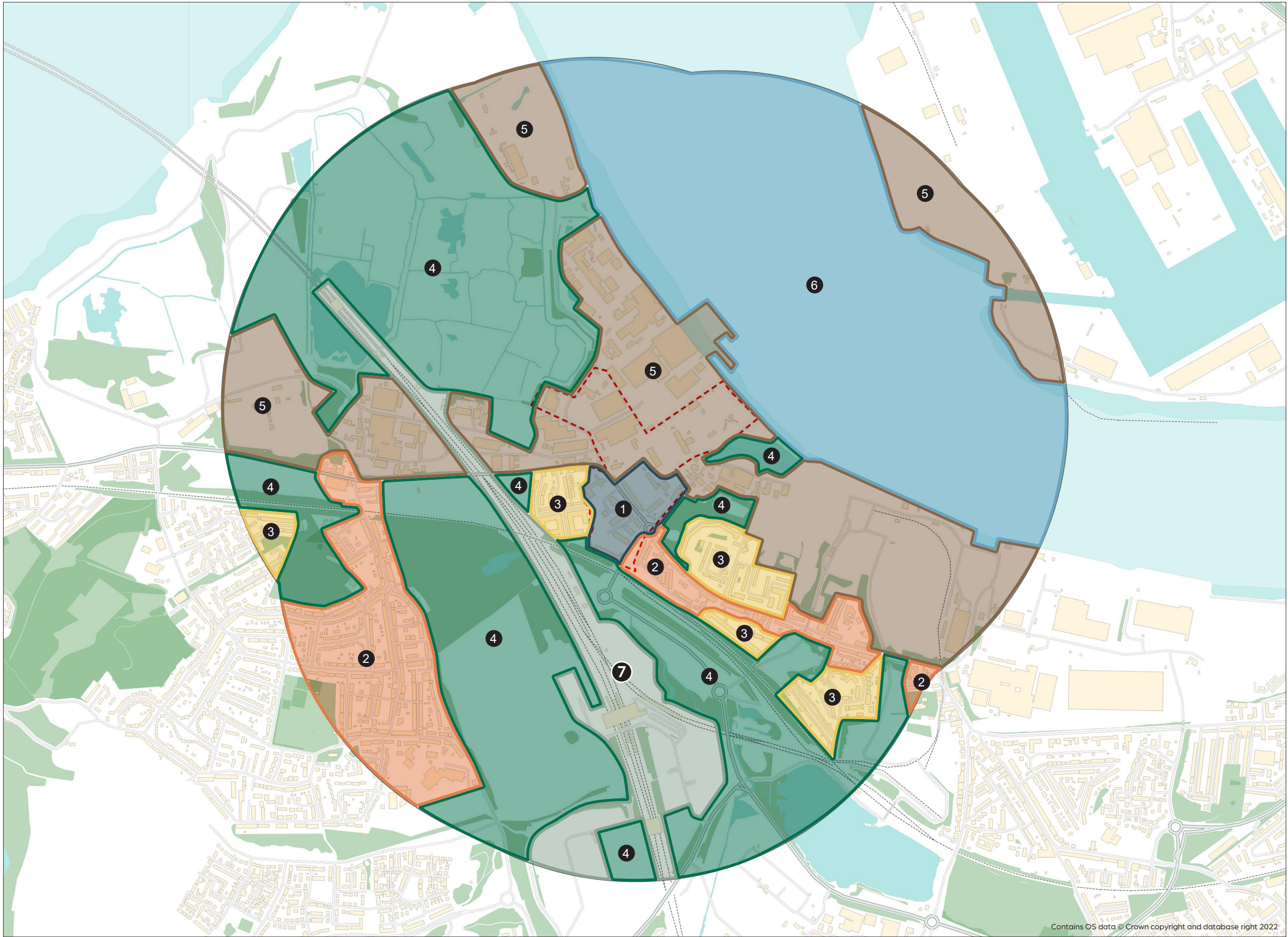
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FIGURE:

NORTH



MONTAGU EVANS
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70 ST MARY AXE,
LONDON, EC3A 8BE
T: +44 (0)20 7493 4002
WWW.MONTAGU-EVANS.CO.UK



TOWNSCAPE CHARACTER AREA PLAN

- Application Site (indicative)
- 1 Mixed-use/commercial estate
- 2 Historic town centre
- 3 20th century housing
- 4 Green Space
- 5 Industrial
- 6 River Thames
- 7 Transport infrastructure

LOCATION:
Northfleet Central

DATE:
June 2022

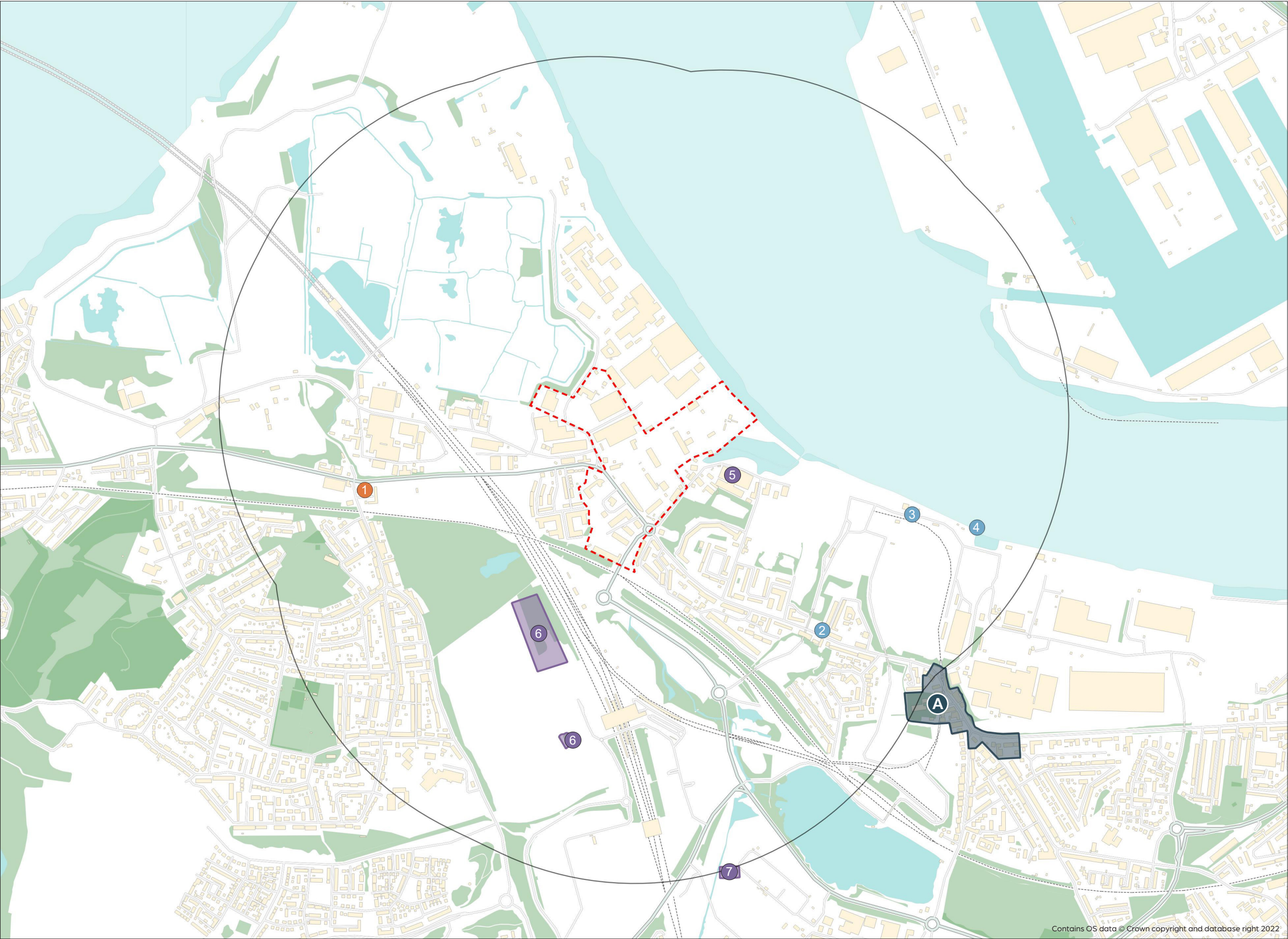
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1:12,500 @ A3

FIGURE:

▲ NORTH



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LONDON, EC3A 8BE
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WWW.MONTAGU-EVANS.CO.UK



HERITAGE ASSET PLAN

Application Site (indicative)

Conservation Areas

A. The Hill Northfleet CA

Listed Buildings

Grade II*

1. Church of All Saints

Grade II

2. The Factory Club

3. Bevan's War Memorial in Northfleet Cement Works

4. Northfleet Lower Lighthouse

Scheduled Monuments

5. Aspdin's kiln

6. Palaeolithic sites near Baker's Hole

7. Neolithic sites near Ebbsfleet

LOCATION:
Northfleet Central

DATE:
June 2022

SCALE:
1:12,500 @ A3

FIGURE:

▲ NORTH



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