

Chapter Fourteen ♦ Cultural heritage and archaeology

INTRODUCTION

- 14.1 This chapter presents a preliminary assessment of the likely significant effects of the Proposed Development on cultural heritage and archaeology. The assessment identifies and evaluates heritage and archaeological assets in and around the Project Site and makes a preliminary assessment, based on the information available at the time of writing, of how the Proposed Development may potentially affect these heritage and archaeological assets.
- 14.2 This chapter is supported by the following data and assessments:
- Gazetteer of Updated Historic Environment Record Data (HER) (accessed June 2020) (Appendix 14.1)
 - Desk-Based Assessment, 2015 (Appendix 14.2)
 - Archaeological Deposit Model and Characterisation, 2015 (Appendix 14.3)
 - Historic Landscape Characterisation, 2015 (Appendix 14.4)
 - Desk-Based Assessment and Statement of Archaeological Significance (Palaeolithic) for main access road (eastern route), and people mover/cycle route options, 2017 (Appendix 14.5)
 - Detailed Gradiometer Survey Report, South of A2(T), 2017 (Appendix 14.6)
 - Earth Resistivity Tomography and Electromagnetic Induction Survey Report, Swanscombe Peninsula, 2017 (Appendix 14.7)
- 14.3 The baseline assessments above were undertaken as part of the previous iteration of this project. Baseline survey updates as well as further additional desk-based assessment will be undertaken to inform the cultural heritage and archaeology chapter of the ES. In addition, archaeological fieldwork investigations are planned to be undertaken in support of the EIA and as such, all assessment of effects, significance ratings and conclusions in this PEIR chapter are preliminary and subject to change prior to the completion of the ES.

RELEVANT LAW, POLICY AND GUIDANCE

National legislation

14.51 There is a significant body of statute law dealing with the historic environment (primary legislation). Heritage assets that are deemed to be of particular importance are given legal protection through the following national legislation:

- Ancient Monuments and Archaeological Areas Act 1979;
- Infrastructure Planning (Decision) Regulations 2010;
- The Planning (Listed Buildings and Conservation Areas) Act 1990;
- National Heritage Act 1983;
- Protection of Wrecks Act 1973;
- Protection of Military Remains Act 1986;
- Burial Act 1997;
- Treasure Act 1996; and
- The Hedgerow Regulations 1997 (as amended 2002).

National policy

14.52 The principal national guidance on the importance, management and safeguarding of the historic environment resource is the National Planning Policy Framework (NPPF) Section 16: *Conserving and Enhancing the Historic Environment* (February 2019), which sets out the national guidance on the importance, management and safeguarding of heritage assets within the planning process. The aims of NPPF Section 16 are to ensure that Local Planning Authorities, developers and owners of heritage assets adopt a consistent and holistic approach to their conservation and to reduce complexity in planning policy relating to proposals that affect those assets. It should be added that the NPPF does not set criteria for determining the acceptability of NSIPs, such as the London Resort, but it is a relevant consideration..

14.53 On 6 March 2014 the Department for Communities and Local Government (DCLG) published the National Planning Practice Guidance (NPPG) web-based resource, which has been updated on a regular basis since then to, amongst other things, reflect the changes to the NPPF since the guidance was first published. The resource includes a section entitled '*Conserving and enhancing the historic environment*' (ID:18a), which expands upon the corresponding sections of the NPPF.

14.54 Under the Marine and Coastal Areas Act 2019, the UK is divided into marine policy regions, with an associated planning authority responsible for preparing a marine plan for that area. The *Marine Policy Statement* (Department for Environment, Food and Rural Affairs, 2011) sets out the framework for preparing Marine Plans and taking decisions affecting the marine environment. In England, marine licensing and marine planning was made the responsibility of the Marine Management Organisation (MMO), and inshore and offshore waters have been divided into eleven plan area. The intertidal and marine parts of project study area are in the South East Marine Plan, which underwent a statutory public consultation between 14 January and 20 April 2020.

Port of London Authority

14.55 Under the Port of London Act 1968 the Port of London Authority (PLA) has jurisdiction over the tidal Thames from Teddington to the outer limits of the Thames estuary up to the High Water Mark. The Proposed Development falls within this jurisdiction of the PLA.

Local policy

14.56 The Project Site falls partly within two local planning authority areas in north Kent - Dartford Borough Council and Gravesham Borough Council - and one local planning authority in south Essex, Thurrock Council. Relevant local planning documents from a cultural heritage and archaeology perspective comprise:

- Dartford Local Plan Core Strategy (adopted September 2011);
- Dartford Development Policies Plan (adopted July 2017);
- Gravesham Local Plan Core Strategy (adopted September 2014);
- Gravesham Local Plan First Review Saved and Deleted Policies (2007);
- Thurrock Local Development Framework, Core Strategy and Policies for Management of Development (as amended) (adopted January 2015).

Relevant guidance

14.57 In addition to relevant planning policy, a number of guidance documents are relevant to the current study:

- Design Manual for Roads and Bridges (DMRB), 'LA 104 Environmental Assessment and Monitoring' and 'LA 106 Cultural Heritage Assessment' (January 2020);
- Standard and Guidance for Historic Environment Desk-Based Assessment (Chartered

Institute for Archaeologists 2014; revised 2017);

- Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (Historic England 2008);
- Heritage 2020 Framework, Strategic Priorities for England's Historic Environment 2015-2020 (Historic Environment Forum 2015);
- The Setting of Heritage Assets, Historic Environment Good Practice Advice in Planning Note 3 (Second Edition) (Historic England 2017);
- Planarch: Evaluation of Archaeological Decision-making processes and Sampling Strategies (Oxford Archaeology 2001);
- Planarch 2: Review of Cultural Heritage Covering in Environmental Impact Assessments (Oxford Archaeology 2005);
- Kent Farmsteads Guidance (Kent County Council and English Heritage 2014)
- South East Research Framework (Kent County Council 2019);
- People and the Sea: A Maritime Archaeological Research Agenda for England (Sturt et. al. 2013);
- North Sea Prehistory Research and Management Framework (Peeters et al. 2009);
- Assessment of Settings, Thurrock Scheduled Ancient Monuments (Place Services 2019);
- Tilbury Fort, Conservation Plan, Draft V1 (Alan Baxter Associates 2018);
- Scheduled Monuments and Nationally Important Non-Scheduled Monuments (DCMS 2013).
- JNAPC Code of Practice for Seabed Development (Joint Nautical Archaeology Policy Committee and The Crown Estate 2008);
- The Assessment and Management of Marine Archaeology in Port and Harbour Development (Historic England 2016);
- Ships and Boats: Prehistory to Present: Designation Selection Guide (English Heritage 2012);
- Marine Geophysics Data Acquisition, Processing and Interpretation (Plets et. al. 2013)

METHODOLOGY AND DATA SOURCES

Consultation

- 14.4 Consultation with prescribed statutory consultees resumed in June 2020, with a preliminary project re-start meeting to introduce the updated master plan. This was also an opportunity to involve consultees with an interest in the Essex Project Site who had previously not been involved with the project.
- 14.5 In June 2020, a scoping report was submitted to PINS and subsequently issued to both statutory and non-statutory consultees. The Secretary of State's EIA scoping opinion is due at the end of July 2020 and will guide the further assessment of the Proposed Development's environmental effects.

Study area

- 14.6 The archaeological and cultural heritage resource (a term which is synonymous with 'historic environment resource') comprises a diverse range of heritage assets comprising archaeological remains, built heritage and historic landscapes. In order to aid the exposition of this chapter of the PEIR, the archaeological and cultural heritage resource has been split into three sub-sections; archaeology, built heritage and historic landscape. Archaeology has been subdivided further into terrestrial and marine.
- 14.7 The principal study area established for the preliminary assessment of known and potential archaeological and cultural heritage receptors encompasses a 1km radius around the Project Site. The marine study area comprises the mean high watermark (MHW) area of the Thames, from the western-most boundary of the principal study area to the eastern-most boundary.
- 14.8 A wider 5km study area was established for the preliminary assessment of indirect effects. Within this area a Zone of Theoretical Visibility (ZTV) model has been created by the project's landscape and visual consultant. It should be noted that the ZTV is a 'bare earth' model and does not take into account any screening afforded by vegetation, buildings, etc, which might prevent or reduce actual visibility. The ZTV does not reflect the degree to which visibility can decrease with distance; the nature of what is visible at 1km will differ considerably from 5km, although both are indicated by the ZTV to have the same level of visibility. This will be used to aid the assessment of the likelihood of any significant effects that would reduce the significance of heritage assets or the ability to appreciate that significance, through change to setting, in the ES Chapter.

Data sources

- 14.9 For the purposes of this PEIR up to date information was gathered from the Kent Historic Environment Record and Essex Historic Environment Record in June 2020, which has

been used to inform the preliminary assessment of effects. This will be incorporated into the updated Desk-Based Assessment. A number of publicly accessible sources of primary and synthesised information were consulted for the purposes of this assessment and the previous baseline;

- Kent Historic Environment Record (KHER) and Essex Historic Environment Record (EHER), comprising a database of all recorded archaeological sites, find spots and archaeological events in the counties (accessed June 2020).
- The National Record for the Historic Environment (NRHE) for maritime data including known wrecks, obstructions and recorded losses.
- The UK Hydrographic Office (UKHO) for maritime data including known wrecks and obstructions.
- National heritage datasets including National Heritage List for England (NHLE), Images of England, NMR excavation Index, and Parks and Gardens UK.
- LiDAR data (Environment Agency) and Aerial Photographs.
- Historic manuscripts, surveyed maps, and Ordnance Survey maps held at the National Archives (Kew) and Kent History and Library Centre. As the PEIR has been prepared during the COVID-19 outbreak, access to the Essex Record Office was not available for access due to closure at the time of writing.
- Relevant primary and secondary sources held at the National Archives, Kent Historic and Library Centre and in Wessex Archaeology's own library. Both published and unpublished archaeological reports relating to excavations and observations in the area around the Project Site were studied.

Proposed surveys

- 14.10 For the purposes of the final ES, the desk-based assessments (Appendix 14.2-14.4) will be updated to reflect the inclusion of the Essex Project Site, alterations to the Kent Project Site boundary, new archaeological information available since 2015, marine archaeological data and changes to the master plan for the Proposed Development. In addition to the existing baseline assessments, additional desk-based studies will include a Heritage Statement to assess the effects to significance of heritage assets caused by change to setting, and a Historic Environment Framework/Mitigation Strategy that will draw together all the data collected for archaeology and cultural heritage and set out a strategy for future work, mitigation and interpretation.
- 14.11 For the ES, additional archaeological surveys and fieldwork will be necessary, for both terrestrial and marine areas. In the first instance this is expected to comprise the archaeological evaluation at Palaeolithic Scheduled Monument at Baker's Hole, and the

completion of a geophysical survey that was started in 2017 (Appendix 14.7). Further archaeological evaluation is likely to be necessary in both the Kent and Essex Project Sites. The nature and scope of these works will be devised through consultation with the archaeological advisors at Essex Place Services, Kent County Council and Historic England.

Methodology

Assessment of effects

14.12 The following sections describe the methods used to determine the significance of effects during the construction and operational phases associated with the Proposed Development on archaeological and cultural heritage receptors. The preliminary assessment considered the following;

- the importance/value of a receptor to an effect;
- magnitude of effect; and
- the significance of effect upon receptors.

14.13 The PEIR identifies and assesses potential direct and indirect effects upon the significance of both potential archaeological and cultural heritage receptors. Potential effects upon archaeological and cultural heritage receptors due to the Proposed Development can be adverse or beneficial; direct or indirect; temporary or permanent and cumulative.

14.14 The significance of the effects of the scheme on baseline conditions will be assessed through a process of combining an evaluation of the importance of the cultural heritage resource and the scale of the impact (magnitude of change) that would arise due to the construction and operation of the scheme, taking into account mitigation measures incorporated into the design (embedded mitigation) or delivered during the construction and operation stages.

14.15 The heritage significance of cultural heritage assets is analogous to importance/value and is considered in relation to statutory designations, and priorities or recommendations set out in national research agenda. The National Planning Policy Framework's Heritage Values along with professional judgement are used to determine the importance/value of the resource. This will involve the assessment of the specific heritage value of each heritage asset to be affected by the development. This will require careful analysis of certain aspects of heritage significance of an asset that will be affected in order to appreciate the overall effect of a change to setting. All assessment work undertaken for this PEIR has been undertaken in the absence of up to date baseline surveys and as such are preliminary assessments that will be subject to change as further assessment work takes place.

Direct (physical) effects

- 14.16 The assessment of physical effects will consider direct effects upon features of cultural heritage interest, where sites or potential sites and any buried archaeological remains are at risk of being disturbed or destroyed. Physical effects to buried archaeological remains are likely to occur during below-ground works associated with the Proposed Development.
- 14.17 Physical effects to built heritage assets will also occur where changes to the fabric of historic structures are proposed. As cultural heritage is a non-renewable resource, physical effects to heritage assets (either buried or upstanding) are permanent and irreversible.

Indirect effects

- 14.18 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. The assessment of indirect effects will consider whether the significance of a heritage asset is (adversely) affected by a reduction in the contribution to significance made by the asset's setting resulting from changes to that setting caused by the Proposed Development.
- 14.19 In terms of the NPPF, the setting consists of the surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral. Therefore the importance of 'setting' is in what it contributes to the significance of an asset; simple intervisibility is not in and of itself considered to be harmful, and 'setting' itself is not a designation (see paragraph 9 of *'The Setting of Heritage Assets'* (Historic England, 2017)).
- 14.20 Setting can therefore be tangible, such as a defined boundary, or intangible, such as an atmosphere or ambience. Setting is not simply identified within a visual envelope but can include an archaeological or historic context, which may not be visually apparent. The main concern for visual effects on a cultural heritage setting is the potential for the Proposed Development to fragment the historic landscape, separate connectivity between historic sites and impinge on views to and from sites with important landscape settings.
- 14.21 Nevertheless, as noted above, for the purpose of this assessment and reflecting the requirements of the NPPF (to the extent that they are relevant to the Proposed Development), setting is only one attribute contributing to the significance of a specific heritage asset. Whilst a change in setting may occur, the setting may make little or no contribution to the significance of an asset or a change in setting may not be considered to lead to any loss of significance to an asset.
- 14.22 Assessment of settings is primarily associated with designated heritage assets or non-

designated heritage assets of equivalent heritage significance (where such assets are identified). The scope of the assessment criteria for the forthcoming ES Chapter will be confirmed with the consultees, having regard to the Secretary of State's EIA scoping opinion, as well as applying desk-based research, results of site visits and a ZTV. This process of appraisal will follow Step 1 of the five step sequential process set out in the Historic England (2017) guidance, as follows.

- **Step 1:** Identifying the heritage assets affected and their settings;
- **Step 2:** Assessing whether, how and to what degree these settings make a contribution to the significance of heritage asset(s);
- **Step 3:** Assessing the effect of the proposed development on the significance of the asset(s);
- **Step 4:** Maximising enhancement and minimising harm; and
- **Step 5:** Making and documenting the decision and monitoring the outcomes.

14.23 When considering indirect effects in the wider Study Area, a ZTV model has, as noted, been prepared by the Project's landscape and visual consultants. The ZTV model is based upon indicative broad height parameters for the Proposed Development. This will be revised for the ES once the development heights have been fixed. For the purpose of this assessment the indicative maximum parameters are building heights (32m), structures/themed mountain (60m), rollercoasters and rides (40m) and hotels, staff accommodation and multi-storey car park (32m). For road infrastructure, including assumed improvements to the A2(T) and introduction of link road to the Resort, a figure of 25m has been used (EDP 2020). Further details on the methodology used to create the ZTV are included in Chapter 11. As explained, the ZTV is a bare earth model and does not take into account any screening afforded by vegetation, buildings, etc, which might prevent or reduce actual visibility. The ZTV does not reflect the degree to which visibility can decrease with distance; the nature of what is visible at 1km will differ considerably from 5km, although both are indicated by the ZTV to have the same level of visibility. .

14.24 At this stage, the assessment is preliminary only and is not exhaustive; other effects and mitigation requirements may be identified in light of on-going baseline studies and survey work, consultation and evolution of the project design. A full assessment will be presented in the ES and supporting Heritage Statement which will accompany the application for the Proposed Development.

Indirect effects on marine archaeological assets

14.25 For marine archaeological assets, indirect effects comprise changes to the marine environment caused by the Proposed Development, such as increases in erosion that exposes assets, possibly leading to their damage or destruction, or increases in sedimentation, which could bury assets, leading to their protection. The assessment of

indirect effects will consider whether the significance of a heritage asset is adversely or beneficially affected by the changes to the environment resulting from the Proposed Development.

Assessment criteria and assignment of significance

Methodology for prediction of effects

14.26 To understand the significance of direct effects, previous baseline data have been reviewed to:

- identify known or suspected archaeological sites within the Project Site boundaries; and
- characterise the heritage resource from the Study Areas.

14.27 Comparison of the distribution of known and potential archaeological features with the extent of the proposed construction works allows the potential extent and nature of any direct disturbance to be characterised. Results of the assessment described in this PEIR should be considered to be preliminary and subject to change.

14.28 The assessment of effects arising from change in setting follows the approach set out by Historic England. In this case, the potential for loss of heritage significance is most likely to occur as a result of intervisibility or direct views between a heritage asset and the development. Change to views of an asset from a third viewpoint, even where there is no direct intervisibility between development and asset, might also be relevant as may non-tangible historic or other associations. However, it is important to consider that simple intervisibility between and asset and the Proposed Development, or presence in views, is not in and of itself an adverse effect. There has to be specific 'harm' to the significance of the asset.

14.29 In addition to purely visual considerations, other effects of the Proposed Development, such as noise, might also have an effect. This will be assessed in the ES once the results of the noise assessment are available (preliminary findings are presented in chapter 15 of the PEIR). These effects are understood in terms of the relationship of the asset with its current setting and may be positive, enhancing the heritage significance of the asset; or value-neutral or harmful, depending on the nature of the change, the character of the setting and its contribution to the heritage significance of the asset.

Significance evaluation methodology

14.30 The assessment of the significance of any effect on a heritage asset is largely a product of the heritage significance of an asset and the magnitude of the effect that might give rise to harm, qualified by professional judgement. An assessment of effects on a heritage asset involves an understanding of the heritage significance of the asset and in the case of an indirect effect, the contribution of the setting to the heritage significance of the

asset. The effect being assessed is whether the asset loses significance due to a reduction in the contribution that its setting makes to that significance, as a result of development within that setting. The National Planning Policy Framework (NPPF, section 16; para. 189) advises that the level of detail should be proportionate to the heritage significance of the heritage asset and no more than is sufficient to understand the potential impact of the proposal.

- 14.31 Guidance discusses the conservation of the heritage significance of heritage assets, as change is an inevitable process, but one that can be managed. Heritage significance is not necessarily dependent on the preservation of a feature as it can be enhanced through sensitive management (English Heritage/Historic England, 2008; Conservation Principles, Policies and Guidance).
- 14.32 Rather than just characterising the potential physical effects of development, any assessment therefore needs to understand the effects on the heritage significance of heritage assets and/ or significant places. This assessment uses the definition of value provided in the NPPF, *'The value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting'* (NPPF Glossary, Annex 2 - Heritage Significance).
- 14.33 Effectively, the designation of an asset is a recognition of the heritage interests and value inherent in that asset that are deemed worthy of statutory protection. These assets are therefore typically regarded as more important than non-designated heritage assets. However, where non-designated heritage assets are deemed to be of equivalent significance to designated heritage assets they should be treated as such (DCMS 2013). The significance of identified heritage assets is defined in Table 14.1 below.

Table 14.1: Importance/sensitivity of archaeological and cultural heritage receptors

Importance/ Sensitivity	Criteria
Very High	- World Heritage Sites, which are internationally important - Assets of acknowledged international importance - Assets that can contribute significantly to acknowledged international research objectives - Historic landscapes of international value (designated or not)
High	- Scheduled Monuments and undesignated assets of schedulable quality and importance. - Listed Buildings - Archaeological assets that can contribute significantly to acknowledged national research objectives - Designated and undesignated historic landscapes of outstanding interest (including Grade I and Grade II* Registered Historic Parks and Gardens)

Importance/ Sensitivity	Criteria
	• Non-designated landscapes of high quality and importance and of demonstrable national value • Wrecked ships and aircraft that are protected under the Protection of Wrecks Act 1973, Ancient Monuments and Archaeological Areas Act 1979 or Protection of Military Remains Act 1986 with an international dimension to their importance, plus as-yet undesignated sites that are demonstrably of equivalent archaeological value. • Known submerged prehistoric sites and landscapes with the confirmed presence of largely <i>in situ</i> artefactual material. Palaeogeographic features with demonstrable potential to include artefactual and/or palaeoenvironmental material, possibly as part of a prehistoric site or landscape.
Moderate	• Designated or undesignated archaeological assets that contribute to regional research objectives • Conservation Areas • Designated special historic landscapes of special historic interest (including Grade II Registered Historic Parks and Gardens) • Wrecks of ships and aircraft that do not have statutory protection or equivalent significance, but have moderate potential based on a formal assessment of their importance in terms of build, use, loss, survival and investigation. • Prehistoric deposits with moderate potential to contribute to an understanding of the palaeoenvironment.
Low	• Non-designated Heritage assets, including locally listed buildings, other buildings, and wrecks that are considered to be of local interest • Archaeological assets of limited value, but with potential to contribute to local research objectives
Negligible	• Assets with very little or no surviving archaeological interest/buildings with little or no value at local or other scale • Landscapes with little or no significant historical interest
Unknown	• The importance of the 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. • Buildings with some hidden (i.e. inaccessible) potential for heritage significance. • The importance of the resource cannot be ascertained due to limited existing information; therefore the value of the resource is classified as ranging from High to Low sensitivity.

14.34 In consideration of sensitivity and importance, designation status (and its implicit recognition of the value of heritage interest within an asset deserving of such protection)

is a starting point. However, some assets may be more or less sensitive to the anticipated changes from the Proposed Development, whatever their grading. The assignation of an asset to a particular level of sensitivity or importance is based in part on designation and in part on professional judgement on the degree to which an asset is sensitive to the type of change expected. The preliminary assessments below take this into account.

- 14.35 Direct effects are qualified by the extent and nature of remains associated with an asset which would be disturbed or lost, and the effect of this loss on the heritage interests (heritage significance) of the asset. In respect of buried archaeological remains with no visible above ground remains, this would normally result in the loss of archaeological interest, but elements of architectural and historic interest can also be affected.
- 14.36 In this context, the effects of change to the setting of a heritage asset may depend on individual aspects of that setting, and assessments must be, by their nature, specific to the individual assets being considered. Historic England guidance (2017) advises that the following aspects of setting should be considered in addition to any identified key attributes:
- the physical surroundings of the asset, including its relationship with other assets;
 - the way the asset is appreciated; and
 - the assets associations and patterns of use.
- 14.37 It should also be noted that not all change necessarily detracts from the heritage significance of the asset. In the assessment of effects on the setting of heritage assets, the nature of the effect, of development is a subjective matter. Change is usually taken to constitute a negative effect where it will introduce new and different elements to the setting of designated features, either to an imagined contemporary setting or to their existing setting. However, this change will only be assessed as generating a significant (adverse) effect where it reduces the contribution made by the setting of an asset to such a degree (magnitude) that the overall significance of the asset is diminished or otherwise harmed. The degree to which this overall significance is affected is what is being assessed and is reflected in the final assessed significance score.

Assessment of magnitude of impact

- 14.38 The assessment of the magnitude of impact is the identification of the degree of the effect of the scheme upon the heritage resource. The magnitude of impact can be positive or negative and is ranked without regard to the importance/sensitivity of the asset. The table below provides a guide for assessing the magnitude of impact in respect of the cultural heritage resource.

Table 14.2: Assessment criteria for determining the magnitude of impact

Criteria	
Very High	• Total loss of or major alteration to a site, building or other feature (e.g., destruction of archaeological feature, demolition of a building). • Fundamental change in setting and/or disassociation of asset from its setting, such as by blocking or severance of key views so as to cause a wholesale reduction in the contribution of that setting to the significance of that asset, and hence a significant loss of the asset's overall significance.
High	• Major physical damage to or significant alteration to a site, building or other feature. • Extensive change (e.g., loss of dominance, intrusion on key view or sightline) to the setting of a Scheduled Monument, Listed Building or other feature registered as nationally important, which may lead to a major reduction in the contribution of that setting to the significance of the heritage asset itself, and hence a loss of overall significance for that asset.
Medium	• Damage or alteration to a site, building or other feature. Encroachment on an area considered to have a high archaeological potential. • Change in setting (e.g., intrusion on designed sight-lines and vistas) to monuments / buildings and other features, which may lead to a moderate reduction in the contribution of that setting to the significance of the heritage asset, and hence a reduction in the asset's overall significance.
Low	• Minor damage or alteration to a site, building or other feature. Encroachment on an area where it is considered that low archaeological potential exists. • Minor change in setting (e.g., above historic skylines or in designed vistas) of Monuments, Listed Buildings, sites and other features, which may lead to a small reduction in the contribution the setting makes to the significance of the heritage asset, with an appreciable loss in the assets' overall significance.
Negligible	• No physical effect. • Slight or no change in setting, with no or very limited change in the contribution that setting makes to the significance of the asset, and no loss of overall significance.

Determination of significance of effects

14.39 Table 14.3 (overleaf) illustrates how the sensitivity of the asset and the magnitude of the impact are combined to produce an assessment of the significance of effect.

14.40 Effects are considered to be significant or not significant in EIA terms according to the matrix in Table 14.3. For this assessment, a Moderate or Major effect would be considered to be significant in EIA terms, depending on the heritage significance of the asset (above) and the exercise of professional judgement. .

Table 14.3: Significance of potential effects

		Magnitude of Impact				
		Very High	High	Medium	Low	Negligible
Importance/ Sensitivity (Heritage Significance)	Very High	Major	Major	Moderate	Minor	Not significant
	High	Major	Major	Moderate	Minor	Not significant
	Medium	Moderate	Moderate	Moderate	Minor	Not significant
	Low	Minor	Minor	Minor	Not significant	Not significant
	Negligible	Minor	Not significant	Not significant	Not significant	Not significant

14.41 In making the final judgement on the significance of an effect, consideration is given not only to the importance of an asset in terms of its designation, but also to the sensitivity of an asset to the type of change or impact anticipated, as well as the magnitude of that change. For example, a highly graded Listed Building may have a high level of importance by virtue of its designation, but may be less susceptible to a change in setting (and hence potential reduction in significance) arising from the development proposals. This might be due to the asset's form or location or because its heritage interests are not such that its significance relies on a visual contribution from setting, so that its heritage interests and hence overall significance is not harmed. Conversely, if an asset's significance is entirely derived from a visual contribution from its setting, then a higher level of significance may be accorded to the effect on the asset's significance from the anticipated impact, whatever the level of grading of the asset. The final score of the significance of any effect is informed by professional judgement and based on consideration of all of these factors. This will be explored further in the Heritage Statement and ES chapter for the London Resort, following the completion of the baseline and evolution of the design. For the avoidance of doubt the assessment below is preliminary and subject to change.

14.42 The assessment considers the significance of any effects both in terms of the EIA terminology and in respect of the potential for loss of significance ('harm') to occur in terms of the NPPF. Where insufficient information is available in order to establish the potential significance of effect on a receptor, such as where the sensitivity of archaeological and cultural heritage receptors could not be determined on the basis of the available information, the descriptor 'unknown' has been assigned.

- 14.43 The assessment undertaken for this PEIR is preliminary and based on a limited baseline. A full assessment of heritage significance and predicted effects will be provided in the final ES and as such all conclusions, assessment of effects and significance ratings are preliminary and subject to change.

Cumulative and in-combination effects

- 14.44 The cumulative impact assessment identifies the significant effects of the Proposed Development that have the potential to overlap with similar effects arising as a result of other projects or activities. Cumulative impacts are defined as those that result from additive impacts caused by other past, present and reasonably foreseeable actions together with the plan, programme and project itself and in-combination effects that arise from the culmination of the environmental effects of the development as a whole when all disciplines are considered together, including proposed mitigation measures.
- 14.45 Cumulative impacts may therefore occur to archaeological and cultural heritage receptors that have the potential to be incrementally affected by other consented and/or proposed development activities. These impacts might be individually minor but collectively assessed as significant.
- 14.46 Potential cumulative effects incorporated into the assessment include direct and indirect effects upon archaeological and cultural heritage receptors. For the ES all impacts will be identified and assessed in terms of significance and magnitude using the same methodology outlined above, where sufficient information is available in order to make an informed assessment.

Assumptions, limitations and uncertainties

- 14.47 There are two principal areas of uncertainty in this chapter of the PEIR. The first relates to the nature of the archaeological baseline. The desk-based studies on which this assessment has been based are predictive and do not provide a definitive understanding of as-yet unrecorded archaeological heritage assets that may be affected by the Proposed Development. The second area of uncertainty relates to detail of the Proposed Development which is currently at an early stage. Exact details on construction methodology and the final heights and design of buildings and structures are currently unknown and as such broad parameters have been used, with a worst case scenario adopted where information is currently unavailable. The EIA for the London Resort is applying the Rochdale Envelope approach explained in chapter one of this PEIR, and as such will retain a degree of flexibility. Subsequent iterations of the master plan are likely to change the assessment of effects in this PEIR. The full assessment of effects will be undertaken for the ES based on the final development proposals, informed by further baseline surveys.
- 14.48 The UKHO and NRHE datasets do not provide a record of all surviving marine heritage assets, but a record of known shipwrecks, aircraft crash sites, obstructions and recorded

losses. The information held is not complete and is generally biased towards 19th century to modern shipwrecks, particularly those that pose navigational hazards. Additionally, positional information associated with recorded losses are generally vague and do not, except by chance, correlate to material on the seabed. Therefore the existing data does not preclude the subsequent discovery of further elements of the historic environment that are, at present, unknown.

- 14.49 The archaeological work currently is ongoing and it might be that the proposed surveys and assessment need to be adjusted or refined on the basis of new information that arises or other matters that become apparent. This PEIR reports work in progress and is based upon an incomplete baseline. As such, all assessments of the heritage significance of heritage assets and the assessment of effects are preliminary and subject to change. The final ES will take into account all information from the baseline surveys.
- 14.50 The ZTV is based upon indicative worst-case parameters in order to gain an understanding of the likely spread of intervisibility across the Project Sites and Study Area. These parameters will be refined as work on the outline design of the London Resort progresses. It is noted that the ZTV is a bare earth model and does not take into account any screening afforded by vegetation, buildings etc, which may prevent or reduce actual visibility. The ZTV does not reflect the degree to which visibility can decrease with distance; the nature of what is visible at 1km will differ considerably from 5km, although both are indicated by the ZTV to have the same level of visibility.

BASELINE CONDITIONS

Introduction

- 14.58 The assessment of the baseline resource will follow a staged approach. A desk-based assessment was undertaken for the Kent Project Site in 2015. This identified a number of designated and undesignated heritage assets within and surrounding the Project Site which had the potential to be affected by the Proposed Development. The desk-based assessment informed the need for further desk-based, non-intrusive and intrusive fieldwork. Before the completion of the project ES the desk-based assessment will be fully revised and updated to include new discoveries since 2015, and will include an assessment of the Essex Project Site. In the absence of a complete and up to date baseline, this assessment has been based on an updated Historic Environment Record Search (accessed June 2020). Following the completion of the baseline assessments, the assignment of heritage significance and effects may be subject to change.

Previous archaeological assessment for the London Resort Project

- 14.59 A number of archaeological investigations and surveys have been undertaken to date for the London Resort Project. These comprise:

- Desk-based assessment (April 2015);
- Historic Landscape Characterisation (July 2015);
- Archaeological Deposit Model and Characterisation (March 2015);
- Geophysical Survey, Land South of A2(T) (Detailed Gradiometer Survey; September 2016);
- Archaeological Evaluation (trial trenches and test pitting), Land North of Springhead Nursery (forthcoming);
- Desk-based Assessment and Statement of Archaeological Significance (Palaeolithic) for main access road (eastern route), and people-mover tram/cycle route options (July 2017);
- Geophysical Survey (partial), Swanscombe Peninsula (Electrical Resistivity Tomography (ERT) and Electromagnetic Induction (EMI) Survey; September 2017).

Designated heritage assets

14.60 A total of 685 designated heritage assets were identified within the defined Study Areas and are summarised in the table below.

Table 14.4: Designated Heritage Assets within the Site and Study Areas (Figure 14.1 - 14.3)

Type of Designated Heritage Asset		Distance			Total
		Within Project Site	0-1km	1-5km	
Scheduled Monuments		4	5	24	33
Listed Buildings	Grade I	0	2	19	21
	Grade II*	1	12	444	457
	Grade II	2	118	26	146
Registered Parks and Gardens	Grade I	0	0	0	0
	Grade II*	0	0	2	2
	Grade II	0	0	2	2
Conservation Areas		0	10	14	24
Registered Battlefields		0	0	0	0
World Heritage Sites		0	0	0	0
Protected Wrecks		0	0	0	0

14.61 Within the Project Site boundary are four Scheduled Monuments:

- Palaeolithic sites near Baker's Hole, National Heritage List for England (NHLE) No. 1003557 and Site of Special Scientific Interest (SSSI). The Scheduled Monument consists of two areas within the Kent Project Site. One was subject to partial excavation in 1970-71 and revealed rich deposits and artefacts (dated to c.250,000-150,000 Before Present (BP)). The second area was excavated in the 1930s and 1970s. The overlapping SSSI designation of Baker's Hole covers a larger area than the Scheduling and has been classified as 'unfavourable declining' by Natural England;
- Neolithic sites near Ebbsfleet, NHLE no. 1004206. The Scheduled Monument consists of two areas in the Kent Project Site. Site 1 became the type site for Ebbsfleet Ware Neolithic pottery with waterlogged deposits and horizontal timbers found, and Site 2 yielded evidence of two working floors of Mesolithic and Neolithic date;
- Springhead Roman Site, NHLE No. 1005140. Partially within the southern edge of the Site. The initial excavations within this area were thought to have determined the core of a Roman town, including evidence of six temples, a bakery, kilns and corn driers amongst other features. However later investigations determined that the focus of the town and ritual site was actually to the north of the A2(T), outside the scheduled area.
- Medieval Woodland Boundary in Darenth Wood (NHLE No. 1013378). The monument comprises an irregularly shaped earthwork boundary which encloses 35.5ha of woodland, partially within the western edge of the Site. .

14.62 Three Listed Buildings lie within the Project Site (described further in paras. 14.77-14.79 below);

- Grade II* listed Riverside Station, including floating landing stage, Tilbury (NHLE 1111547);
- Grade II listed Swanscombe Cutting Footbridge Crossing A2(T) east of A296 Junction (NHLE No. 1119762);
- Grade II listed Boundary Stone, Ingress Park (NHLE No.1410227).

14.63 There are no World Heritage Sites, Grade I Listed Buildings, Registered Parks and Gardens, Conservation Areas or Registered Battlefields within the Project Site. Designated heritage assets within the Project Site are shown on Figure 14.1 and 14.2 and those within the wider 5km are shown on Figure 14.3. .

Undesignated heritage assets

14.64 The desk-based assessments listed above present a summary of the known heritage assets within the Kent Project Site both designated and undesignated based upon the information held by the Kent Historic Environment Record (HER, consulted in 2015), and intrusive works undertaken for the Project Site to date (Appendix 14.2-14.4). Information obtained from the Essex Historic Environment Record will be incorporated into the updated desk-based assessment for the ES Chapter. A gazetteer of the updated HER search from Essex and Kent Historic Environment Records are provided in Appendix 14.1.

14.65 Tables 14.5 and 14.6 provide a list of the undesignated heritage assets which lie within the Project Site that could be subject to physical impacts as a result of the development, or remains which have been excavated but indicate the potential for further archaeological remains to be discovered within the Project Site. These are illustrated in Figures 14.4-14.9. This list does not include findspots as these are not considered to be 'heritage assets' by themselves, as they indicate the location of artefacts which have been removed. Ongoing assessments (listed above) will characterise the potential and significance of buried deposits within the Project Site, therefore further undesignated but potentially nationally significant archaeological remains could be identified during this work. The potential effects of the Proposed Development upon these remains would be assessed fully within the ES.

Table 14.5: Undesignated heritage assets (terrestrial) within the Kent Project Site (based on current evidence; 2020 HER search; excluding findspots)

Ref no.	Name	Heritage Significance
WA25	Palaeolithic handaxe and flakes from terrace gravels at Galley Hill Pit (aka Higgins' Pit)	Very High
WA06	Numerous Palaeolithic handaxes and other flint artefacts from gravel overlying the Southfleet Road 'Ebbsfleet Elephant' site	Very High
WA01	Palaeolithic artefacts and molluscan remains from Rickson's Pit, AKA Barracks Pit	Very High
WA43	Levalloisian Palaeolithic flakes, cores and animal remains from pit rail cutting to Bevan's (Baker's Hole) Pit	Very High
WA61	Ebbsfleet Site B (Baker's Hole), with Palaeolithic Levalloisian occupation floors, mammalian fossils and other palaeo-environmental remains	Very High
WA78	Palaeolithic features, Ebbsfleet	Very High
WA79	Upper Palaeolithic knapping site, Springhead	Very High
WA82	Late Upper Palaeolithic flints, 'Springhead Lower Floor', Ebbsfleet Valley	Very High
WA07	Palaeolithic (Clactonian) elephant butchery site, Southfleet Road, Ebbsfleet	Very High

Ref no.	Name	Heritage Significance
WA73	Rich vertebrate and other palaeo-environmental remains from the ZR4 pylon, Baker's Hole, Northfleet	Very High
WA110	Later Prehistoric skeleton 'Galley Hill Man', interred in Pleistocene gravels at Galley Hill, Swanscombe	Moderate
WA129	Late Neolithic features, Ebbsfleet	Moderate
WA130	Late Neolithic features, Ebbsfleet	Moderate
WA154	Late Bronze Age activity, Northfleet Water Treatment Works	Low
WA159	Possible Late Bronze Age/Early Iron Age Boundary Features, Springhead	Low
WA163	Later Prehistoric human skull found at Baker's Hole quarry complex	High
WA87	Peat/ organic clay exposure by Swanscombe Marshes	Unknown
WA88	Organic clay exposure by Broadness saltmarsh	Unknown
WA144	Possible Bronze Age Surface, Ebbsfleet Valley	Moderate
WA146	Possible Bronze Age Fence or Fish Trap, Ebbsfleet Valley	Low
WA177	Gully Ditch and Cremation Burial, Ebbsfleet Valley	Moderate
WA178	Early Prehistoric Site, Ebbsfleet Valley Sports Ground	Low
WA145	Two Bell Barrows with cremation, Springhead	Moderate
WA157	Group of Bronze Age Pits , Springhead	Low
WA183	Undated later prehistoric ditch, Ebbsfleet	Low
WA195	Iron Age 'C' cremation	Low
WA212	Iron Age Ditch, Springhead Nursery	Low
WA261	Late Iron Age and Roman features at Station Quarter South, Ebbsfleet, Kent	Moderate
WA262	Possible Prehistoric Pits, Ebbsfleet Valley	Low
WA223	Approximate location of springs and ritual pool in early Roman period, Springhead, Northfleet	High
WA224	Late iron age to early/middle Roman activity west of Northfleet Roman villa, Northfleet	Moderate
WA225	Late iron age to early/middle Roman activity west of Northfleet Roman villa, Northfleet - Iron Age gully	Moderate
WA226	Late iron age to early/middle Roman activity west of Northfleet Roman villa, Northfleet - Iron Age pits	Moderate
WA227	Linear Prehistoric Features, Ebbsfleet Valley	Low
WA188	Northfleet Roman Villa Site, Ebbsfleet Valley	Moderate
WA228	Late iron Age enclosure, Springhead	Moderate
WA229	Late iron Age pit group 1, Springhead	Moderate
WA230	Late iron Age pit group 2, Springhead	Moderate
WA277	Romano-British pottery kiln found AD 1904	Low
WA282	Site of possible Romano-British ritual pit	Moderate
WA286	Romano-British kiln (site of)	Low
WA287	Romano-British burial ground	High
WA296	Possible Defended Roman Enclosure and Road, Springhead	High

Ref no.	Name	Heritage Significance
WA297	Early Roman Quarry Pits, Springhead	Low
WA303	Probable Romano-British surface observed during cabling works in 1992	Moderate
WA307	Large Roman building east of Watling Street, Springhead	High
WA308	Roman building found west of Watling St, Springhead	High
WA309	Two Roman buildings found north of Watling St beneath the A2	High
WA310	Roman shop beneath the A2 at Springhead	High
WA313	Area of probable Romano-British occupation immediately north of Roman Watling St, Springhead	High
WA314	Area of probable Romano-British occupation north of Roman Watling St, Southfleet	High
WA315	Courtyard and well, probably of Romano-British date, at Springhead, Southfleet	High
WA316	Romano-British bath-house found beneath current route of A2 at Springhead	High
WA317	Length of Roman ditch at Springhead, Southfleet	Moderate
WA318	Romano-British ditch discovered during the 1960s at Springhead	Moderate
WA319	Area of probable Romano-British activity at Springhead, Southfleet	High
WA320	Area of Romano-British activity immediately north of the A2 at Springhead	High
WA358	Late Iron Age activity and a Roman water tank, Northfleet Water Treatment Works	Moderate
WA364	Two pits containing Romano-British pottery at Branton's Brickfield	Low
WA372	Six early Roman burials, Springhead, Northfleet	High
WA373	Early Roman pits, ovens, trackway and burials, Springhead, Northfleet	High
WA374	Early Roman cenotaph Springhead, Northfleet	High
WA375	Early Roman building Springhead, Northfleet	High
WA376	Roman road-side shrine, Springhead	High
WA377	Early Roman metalled road west of Northfleet Roman villa, Northfleet	Moderate
WA378	Romano-British trackway discovered during evaluation in 2001.	Moderate
WA379	Early Roman alluvial deposits, peat, pottery, ceramics and coins, Ebbsfleet	Low
WA383	Roman features at Station Quarter South, Ebbsfleet, Kent	High
WA384	Wall structure at Station Quarter South, Ebbsfleet, Kent	High
WA385	Roman cemetery at Station Quarter South, Ebbsfleet, Kent	High
WA390	Neonatal burials within 2nd century Roman Temple at Springhead	High
WA450	Roman road north from Springhead	Moderate
WA451	Watling Street Roman Road	Moderate

Ref no.	Name	Heritage Significance
WA452	Roman road, south from Springhead via Pepper Hill cemetery	Moderate
WA267	Vagniacis (Springhead), Iron Age and Roman religious centre	High
WA396	2nd century Roman temple preserved beneath slip-road, Springhead	High
WA397	Mid-Roman temple building, Springhead, Northfleet	High
WA398	Early Roman trackway Springhead, Northfleet	High
WA399	Mid-Roman wall and possible building, Springhead, Northfleet	High
WA400	Roman pit alignment, Springhead, Northfleet	High
WA401	Roman structure, Springhead, Northfleet	High
WA402	Enclosing ditch to Roman sanctuary complex, Springhead, Northfleet	High
WA403	Junction in Roman Watling Street, Springhead, Northfleet	Moderate
WA404	Roman fence-lines / property boundaries, Springhead	Moderate
WA405	Semi-sunken feature Roman building, Springhead	High
WA406	'Property 1' at Roman settlement, Springhead	High
WA407	'Property 2' at Roman settlement, Springhead	High
WA408	'Property 3' at Roman settlement, Springhead	High
WA409	'Property 4' at Roman settlement, Springhead	High
WA410	'Property 5' at Roman settlement, Springhead	High
WA411	'Property 6' at Roman settlement, Springhead	High
WA412	Romano-British building within 'Property 7' at Roman settlement, Springhead	High
WA413	'Property 8' at Roman settlement, Springhead	High
WA414	'Property 9' at Roman settlement, Springhead	High
WA415	'Property 10' at Roman settlement, Springhead	High
WA416	'Property 11' at Roman settlement, Springhead	High
WA417	'Property 12' at Roman settlement, Springhead	High
WA418	'Property 7' at Roman settlement, Springhead	High
WA419	1st/2nd century aisled barn, Springhead	Moderate
WA423	East range at Northfleet Roman villa	High
WA421	Roman south 'viewing platform', Springhead, Northfleet	High
WA422	Early Roman gully, Ebbsfleet	Low
WA424	Flint wall and remains of furnace and flue of Ebbsfleet Roman Villa Bath-House	High
WA425	Hot room (caldarium) of Ebbsfleet Roman Villa Bath-House	High
WA426	Warm room (tepidarium) of Ebbsfleet Roman Villa Bath-House	High
WA427	Cold room (frigidarium) of Ebbsfleet Roman Villa Bath-House	High
WA428	Bath of Ebbsfleet Roman Villa Bath-House	High
WA429	Gullies to north of Ebbsfleet Roman Villa Bath-House	High
WA430	Room 10509 in the Ebbsfleet Roman Villa Bath-House	High
WA431	Room 10508 and flue in the Ebbsfleet Roman Villa Bath-House	High
WA432	Room 10697 in the Ebbsfleet Roman Villa Bath-House	High

Ref no.	Name	Heritage Significance
WA433	Room 10624 in the Ebbsfleet Roman Villa Bath-House	High
WA434	Room 10563 in the Ebbsfleet Roman Villa Bath-House	High
WA435	Northfleet Roman villa western range aisled barn - external walls	High
WA436	Northfleet Roman villa western range aisled barn - post holes	High
WA437	Earliest Roman building at Northfleet Roman villa site	High
WA438	Late iron age to early/middle Roman activity west of Northfleet Roman villa, Northfleet - Early Roman pits	Moderate
WA439	Early / middle Roman activity west of Northfleet Roman villa, Northfleet	Moderate
WA440	Early Roman metalled road west of Northfleet Roman villa, Northfleet - Road	Moderate
WA441	Early Roman metalled road west of Northfleet Roman villa, Northfleet - Gullies	Moderate
WA442	Early Roman Occupation Site, Ebbsfleet Valley	Low
WA443	Northfleet Roman villa bath-house site	High
WA444	Western Roman Complex, Ebbsfleet Valley Sports Ground	Moderate
WA446	Blacksmiths workshop within Property 10 at Roman Settlement, Springhead	High
WA447	Roman fence-lines/ property boundaries at property 10 in the Roman settlement, Springhead	Moderate
WA448	Northfleet Roman villa western range aisled barn	High
WA449	Possible bath-house, Springhead, Northfleet	High
WA467	Early Anglo-Saxon sunken-feature buildings, Northfleet villa site - SFB 16636	Moderate
WA468	Early Anglo-Saxon sunken-feature buildings, Northfleet villa site - SFB 16638	Moderate
WA490	Medieval site at Northfleet East GIS Substation, Springhead	Low
WA457	Early Medieval Corn Dryers, Springhead	Low
WA461	Early medieval sunken-feature building, Springhead - SFB 5809	Moderate
WA462	Early medieval sunken-feature building, Springhead -SFB20186	Moderate
WA463	Early Anglo-Saxon pit, Springhead	Moderate
WA464	Early Anglo-Saxon pit, Springhead	Moderate
WA566	Medieval Boundary Ditch, Near Springhead Nursery, Springhead	Low
WA567	Medieval tile kiln west of Springhead	Low
WA487	Early Anglo-Saxon sunken-feature buildings, Northfleet villa site - SFB 16635	Moderate
WA488	Early Anglo-Saxon sunken-feature buildings, Northfleet villa site - SFB 16699	Moderate
WA489	Three early medieval sunken-feature buildings, Northfleet - SFB30107	Moderate
WA283	Early Medieval Settlement, Ebbsfleet Valley	Moderate
WA570	Large medieval trackway, Springhead	Low

Ref no.	Name	Heritage Significance
WA653	Ditch at station Quarter South, Ebbsfleet, Kent	Low
WA664	NORTH KENT RAILWAY	Low
WA665	Post-Medieval Timber Revetment, Ebbsfleet Valley	Low
WA669	Branton's Brickfield	Low
WA689	Broadness Lighthouse	Low
WA713	Brick and flint-built 19th century features relating to Ingress Park	Low
WA727	Outfarm north east of Craylands	Low
WA788	FAWKHAM JUNCTION AND GRAVESEND BRANCH RAILWAY	Low
WA789	Gravesend, Rosherville and Northfleet Tramways	Low
WA790	Tramway J. B. White Portland Cement Works, Swanscombe	High
WA768	Watercress beds, Springhead evaluation, Gravesend, Kent	High
WA769	New Barn	Low
WA770	Britannia Cement Works (Site of)	Negligible
WA771	Chalk Pit (South of Galley Hill Road)	Negligible
WA773	Black Duck barge yard, Swanscombe Marshes	Low
WA774	J. B. White Portland Cement Works, Swanscombe	High
WA775	Craylands Lane Pit, Swanscombe	Negligible
WA776	Northfleet Paper Mills, (Kent Kraft Mills) Site of	Low
WA777	Gravel Pit, East of Stanhope Road	Negligible
WA778	Large Gravel Pit, East of Southfleet Road	Negligible
WA779	Site of Small Clay Pit, West of Southfleet Road	Negligible
WA782	Chalk Pit (or Pits), South of The Hill, Northfleet	Negligible
WA786	Watercress Beds at Springhead	High
WA787	Tram Tunnel, Barnfield Pit/Craylands Gorge	Low
WA802	Air raid shelter (industrial), London Rd, Swanscombe	Low
WA832	Pepper Hill Second World War Battle Headquarters, Northfleet	Low
WA875	Springhead Second World War air raid shelter, Dartford, Kent	Low
WA885	Green's Yard Second World War air raid shelter, Swanscombe, Dartford, Kent.	Low
WA887	Swanscombe Urban District Council offices Second World War communications shelter, Swanscombe Cross, Dartford, Kent	Low
WA888	Whiting Works Second World War air raid siren, Swanscombe Cross, Swanscombe, Dartford, Kent	Low
WA890	Ebbsfleet International Station post-Cold War anti-vehicle bomb obstacles, Ebbsfleet, Dartford, Kent	Negligible
WA891	Ebbsfleet International Station Post-Cold War anti-vehicle bomb obstacles, Dartford, Kent	Negligible
WA893	Johnson's cement works Second World War air raid siren, Swanscombe, Dartford, Kent	Low
WA922	B Company 17th Battalion Kent Home Guard Second World War headquarters, London Road, Swanscombe, Dartford, Kent	Low
WA938	Transmission tower, Swanscombe Marshes	High

Ref no.	Name	Heritage Significance
WA970	Thames Tar Distillery, (Kent Kraft Estate) Site of	Low
WA976	Tram Tunnels, Barnfield Pit/Craylands Gorge	Low
WA986	Early / middle Roman activity west of Northfleet Roman villa, Northfleet - Pits	Unknown
WA999	Possible denehole	Unknown
WA1001	Prehistoric feature, Springhead evaluation, Gravesend, Kent	Unknown
WA1026	Former field boundary/drainage pattern	Unknown
WA1027	Rectilinear enclosures	Unknown
WA1035	Animal burrow at station Quarter South, Ebbsfleet, Kent	Unknown
WA1036	Possible linear crop mark	Unknown
WA1037	Cropmark of a possible field system, Springhead	Unknown
WA1038	East range at Northfleet Roman villa - post holes	Unknown
WA1039	Early / middle Roman activity west of Northfleet Roman villa, Northfleet - Ditches	Unknown

14.66 The table above demonstrates the rich archaeological resource in the Kent Project Site. The main archaeological potential of the Kent Project Site can be broadly summarised as follows.

- Palaeolithic potential associated with Baker's Hole and surviving surrounding deposits within the SSSI and surrounding area not previously affected by quarrying activities (very high heritage significance).
- Mesolithic/Neolithic potential associated with the two Scheduled areas and surrounding associated deposits/waterlogged deposits in the Ebbsfleet Valley (high significance).
- Roman remains associated with the scheduled Springhead Roman town and ritual site and its predating Late Iron Age phase discovered to the north of the A2(T), and Roman cemeteries discovered to the north of the A2(T) (high and moderate significance).
- Northfleet Roman villa, as well as pre-dating Iron Age and post-dating Anglo-Saxon archaeology (high and moderate significance).
- Geoarchaeological remains preserved on the peninsula and within the Ebbsfleet Valley (unknown significance).
- Evidence for Bronze Age remains, including funerary monuments and preserved wooden trackway (moderate significance).
- Anglo-Saxon watermill and evidence of Anglo-Saxon and Medieval settlement (high

to low significance).

- Post-medieval rural development (low significance).
- 19th and 20th century industry including important sites of Portland Cement Production and watercress production (high significance).
- Potential for as yet undiscovered archaeological remains of unknown date and significance (unknown significance).

Table 14.6: Undesignated Heritage Assets (terrestrial) within the Essex Project Site (based on current evidence; HER 2020; excluding findspots)

Ref no.	Name	Heritage Significance
WA1086	Tilbury Riverside- Earthworks linear features	Low
WA1088	Site of former buildings near Tilbury junctions	Low
WA1161	WWII anti-aircraft ditches N of Little Thurrock Marshes	Low
WA1158	Six Air-raid shelters (destroyed) between railway and Tilbury Fort	Low

14.67 The heritage assets above relate to the post-medieval to modern periods and are considered to be of low heritage significance. The former buildings, anti-aircraft ditches and air-raid shelters are recorded to have been destroyed and it is unlikely that further remains associated with these would be discovered within the Project Site, unless below ground remains survive.

14.68 Previous investigations undertaken surrounding the Essex Project Site have shown that the Project Site has potential for geoarchaeological remains which have provided evidence of the human interaction with the environment during the Mesolithic, Neolithic and Bronze Age periods preserved within peat and alluvial layers. It is likely that these deposits will continue within the Site. Finds recovered close to the Essex Project Site date to the Palaeolithic, Neolithic and Roman periods and indicate some level of activity within the area and could indicate potential for further remains to be discovered within the Site. Adjacent to the Essex Project Site boundary, was the discovery of an inhumation dating to the Late Mesolithic period found in 1883, at a depth of 10m below ground, thought to have been an intentional human burial. This is of high value due to its age and rarity of deliberate burials of this early date. This is evidence of use of the landscape within and surrounding the Essex Project Site during the Late Mesolithic period. .

Marine and intertidal assets

14.69 Data regarding marine and intertidal assets, such as shipwrecks, aircraft crash sites

obstructions, and recorded losses, have been requested from the HERs, NRHE and UKHO. At the time of writing, data from the NRHE and UKHO have not yet been received, but will be incorporated in the Environmental Statement. The following table provides details from the Kent and Essex HERs regarding intertidal structures and derelict vessels.

Table 14.7: Undesignated Heritage Assets (marine) within the Project Sites (based on current evidence)

Ref no.	Name	Heritage Significance	Easting	Northing
WA162	Wooden stake and brushwood trackway, dating to the Bronze Age to Iron Age, on foreshore near the mouth of Broadness Creek	Moderate	560412	176528
WA647	Wooden stakes and piles in foreshore by Swanscombe Marshes	Low	559613	175616
WA648	Possible wooden vessel, Swanscombe Marshes	Moderate	559648	175665
WA649	Wooden structure by beacon, Broadness	Low	560547	176794
WA676	Wooden structure, possibly the remains of a wharf, on foreshore by Swanscombe Marshes	Low	559537	175552
WA677	Large wooden planks on foreshore by Swanscombe Marshes	Low	559566	175579
WA678	Hard, Swanscombe Marshes	Low	559671	175654
WA682	5 concrete pontoons by Swanscombe Marshes	Low	559841	175732
WA683	Derelict vessel, Broadness	Moderate	560363	176663
WA741	White's Jetty, Broadness	Moderate	559994	176097
WA744	Hard, Broadness	Low	559486	175570
WA747	Derelict vessel by Broadness Creek	Moderate	560207	176411
WA748	Beacon at Broadness	Low	560546	176786
WA874	Bell Wharf Second World War mine watching post, Swanscombe, Kent	Moderate	560046	176235
WA933	Small concrete pier / quay by Broadness saltmarsh	Low	560142	176091
WA934	Abandoned wooden vessel in saltmarsh Broadness Creek	Moderate	560449	176479
WA935	Wooden posts in foreshore, by Broadness	Low	560480	176597
WA936	Anti-tank blocks / sea defences Broadness	Moderate	560533	176699

Ref no.	Name	Heritage Significance	Easting	Northing
WA937	Wooden foundation on foreshore at Botany Salt Marshes	Low	561062	176371
WA940	Derelict sewage works	Low	560486	175666
WA946	Pier at Broadness	Low	560006	176057

- 14.70 Although the data has not yet been received from the NRHE, it has been possible to do a preliminary assessment of data sourced through Heritage Gateway and Pastscape (Appendix 14.1). The assessment revealed that there are no known marine sites within the site boundary of either the Kent or Essex Project Site. Within the Kent Project Site, there is evidence of material that has previously been discovered in the terrestrial zone, comprising a hoard of bronze barbed spearheads, an early Bronze Age flanged axe, and a large quantity of worked flint recovered from the Thames at Broadness in 1892 (NRHE 413528), along with a Roman Tile found in the Thames (NRHE 413529). Within the Essex Project Site there is a findspot of twelve Lower Palaeolithic handaxes and two flakes (NRHE 1081328); a Romano-British settlement site with hut circles, burials, pottery and tiles (NRHE 413519); as well as the riverside train station at Tilbury, part of the London Tilbury and Southend Railway, built in 1854 with a landing stage facility to enable passengers to join ferries or passenger liners (NRHE 502073).
- 14.71 Beyond the Kent and Essex Project Sites, but within the marine study area, the Heritage Gateway data record numerous findspots, with dates from the Palaeolithic to the Romano-British period. While these are no longer *in situ*, they provide an indication of activities within the area over time, and the potential for further discoveries. There is also evidence for modern material discovered at Northfleet Wharf and reported through the Marine Aggregate Industry Archaeological Protocol, although the finds were discovered in aggregate dredged from an unknown aggregate area. Sites from the 19th and 20th centuries include the remains of three to six unidentified barges in Robin's Creek, Gravesend (NRHE 125352, NRHE 1025353, NRHE 1025354, and NRHE 1527138) and the remains of the Gull Lightship adjacent to Thurrock Yacht Club (NRHE 1474355).
- 14.72 There is potential for further archaeological evidence to be discovered in the marine study area. The terrestrial assessment identified Palaeolithic, Mesolithic and Neolithic sites within the Kent Project Site, and the findspots in the marine study area suggest the potential for further discoveries, particularly within peat and alluvial sediments.
- 14.73 The Thames has been used as an important waterway for hundreds, if not thousands, of years. Therefore there is potential for the discovery of boats relating to the local riverside settlements (as evidenced by Roman, Bronze Age, Anglo-Saxon and medieval sites and findspots in the terrestrial zone), as well as vessels lost while en-route to central London, or abandoned as derelict on the side of the river (as evidenced by the examples recorded in the HER and Heritage Gateway data).
- 14.74 The Heritage Gateway data also provide information about recorded losses, totalling 74

vessels which have been lost but whose location is presently unknown (Appendix 14.15). The recorded losses date from 1636 to 1963. The vast majority (31) were lost due to collision, underlining the difficult navigational conditions and the number of vessels using the waterway. Other losses were due to stranding, loss during a storm and sinking at moorings while at anchor. The Society for Sprintsail Barge Research has indicated the last known locations for sprintsail barges, ten of which became hulks in the marine study area, while another 15 were broken up. It is possible that remains of one of these recorded losses could be present within the Kent or Essex Project Sites.

- 14.75 There is also the potential for aircraft remains, particularly in relation to the two World Wars.

Built heritage

- 14.76 The Project Sites contain three designated built heritage assets described briefly below.

Riverside Station including Floating Landing Stage (NHLE 1111547)

- 14.77 Riverside Station and floating landing stage lie within the Essex Project Site. The riverside station was built in the mid-19th century as part of the development of the London Tilbury and Southend Railway, serving as a connecting station to allow passengers to join ferry services to Gravesend and other destinations. After the First World War passenger numbers increased and Tilbury became the centre of passenger operations for London. In 1922 a Bill was passed that allowed the construction of a passenger landing stage and this was opened by Prime Minister Ramsay MacDonald in 1930. The Riverside Station and landing stage are designated for their architectural interest, with the Riverside Station built in the Neo-Georgian style by architect Sir Edwin Cooper, and for their historic interest with the docking of the SS Empire Windrush, which is generally accepted to have been the first ship to bring a large number of migrants from the Caribbean to Britain in the post-war years. .

Boundary Stone at Ingress Park (NHLE 1410237)

- 14.78 The boundary stone at Ingress Park lies at the western boundary on the peninsula of the Kent Project Site. The boundary stone at Ingress Park is thought to be the marker of the eastern extent of the Ingress estate owned by James Harmer in 1833. There has also been a suggestion that it could be a boundary stone between the parishes of Greenhithe and Swanscombe. The stone projects two feet above ground and consists of a square stone with a rounded head. The significance of the asset is derived predominantly from its historic interest as a boundary marker for a 19th century estate and represents the works carried out under the ownership of James Harmer. It is one of only three boundary stones on the eastern side of the estate to survive, and has a group value with other buildings and garden features within the boundary of the estate.

Swanscombe Cutting Footbridge Crossing A2(T) east of A296 Junction (NHLE 1119762)

14.79 The designated footbridge lies in the southern part of the Kent Project Site crossing the A2(T). The Swanscombe Cutting Footbridge was the first of this style of which there are several in Kent. It was built of concrete in 1964 by the county bridge engineer J.S. Bergg. The footbridge derives its significance from its architectural interest as an elegant example of an arch over a dual carriageway road and its historic interest as the first of other examples to be constructed in Kent. .

Undesignated buildings/structures within the Project Site

14.80 A small number of undesignated buildings and structures are recorded in the KHER as lying within the Kent Project Site, which could be affected by direct effects associated with the development. These comprise:

- Possible gatehouse or factory building, located to the north of Galley Hill Road (WA798);
- Milestone on London Road, Dartford (WA674);
- Broadness Lighthouse (WA689)
- George V pillar box, George and Dragon PH, London Road, Swanscombe (WA866)
- Three cement works tunnels under London Road, used as air raid shelters (WA917, WA918, WA919);
- Transmission tower, Swanscombe Marshes (WA938);
- Ebbsfleet International Station - post-Cold-War anti-vehicle bomb obstacles (WA964).

14.81 There are no undesignated built heritage assets located within the Essex Project Site.

Scope of indirect effects assessment

14.82 Table 14.8 below lists the Designated Heritage Assets which have been included for preliminary assessment of indirect effects. This list may extend or contract as the scheme evolves and the effects of the development become known. At present broad worst-case parameters for the height of the Proposed Development have been used to gain an understanding of the likely extent of intervisibility across the area. The indicative height parameters include building heights (32m), structures/themed mountain (60m), rollercoasters and rides (40m) and hotels, staff accommodation and multi-storey car park (32m) and a Resort access road (25m), as employed in the landscape and visual impact assessment (chapter 11 of this PEIR). The broad parameters may be subject to

change as the scheme evolves and a final assessment of effects will be presented within the ES Chapter, supported by a Heritage Statement. .

Table 14.8: Designated heritage assets scoped in for assessment (based on current evidence)

NHLE Ref	Grade	Name
1003557	SM	Palaeolithic Sites near Baker's Hole
1004206	SM	Neolithic Sites near Ebbsfleet
1005140	SM	Springhead Roman Town
1004226	SM	Enclosure SE of Vagniacis (walled cemetery)
1013378	SM	Medieval Wooded Boundary
1021092	SM	Tilbury Fort
1013658/1 261173	SM/II*	New Tavern Fort
1005120	SM	Gravesend Blockhouse
1147660	I	Church of Clement
1054093	I	Church of St Botolph
1085788	I	Parish Church of St Peter and St Paul, Swanscombe
1111547	II*	Riverside Station including floating landing stage
1085781	II*	Church of All Saints
1111543	II*	State Cinema
1081093	II*	Old Rectory House
1111632	II	Worlds End Inn
1147907	II	The Wharf Public House
1410237	II	Boundary Stone, Ingress Park
1410227	II	Garden Bridge, Ingress Park
1085779	II	Ingress Abbey
1427217	II	The White Hart Public House
1111573	II	Church of St Peter and St Paul, Grays
11011524	II	1 Knockhall Road
N/A	N/A	High Street and Queen Street Conservation Area Gravesend
N/A	N/A	Gravesend Riverside Conservation Area
N/A	N/A	Lansdowne Square Conservation Area
N/A	N/A	Greenhithe Conservation Area

Historic landscape character

14.83 The Historic Landscape Characterisation baseline study covered the Kent Project Site and a 1km Study Area surrounding it and will be updated to include the Essex Project Site for the ES chapter.

14.84 The historic landscape characterisation has shown that the overriding historic character of the Kent Project Site and Study Area is one of extensive settlement, industrial and

former extractive areas which, although containing nationally significant archaeological remains and historic buildings of various dates, show only partial or fragmentary historic legibility of previous characters and limited time depth.

- 14.85 The large-scale settlement, industrial and extractive areas of the landscape are generally confined to the area north of the A2(T). The active industrial landscape, as it exists today, has contracted significantly from that which existed at its peak in the mid-20th century. Present-day industry is concentrated along Manor Way on Swanscombe Peninsula and along the banks of the Thames at Northfleet and consists largely of modern shed units. Although an industrial character remains in these areas, the historic legibility of the nationally significant industrial processes and industry which thrived here are limited to scattered evidence such as the remains of tramlines and building platforms on the Swanscombe Peninsula, along with the potential for below ground remains beneath the existing industrial units and yards. The importance of the historic industries on a local level to the surrounding communities of Swanscombe, Northfleet and Gravesham and, on a national level, to the development of the important cement industry, is undoubted. However, the significance of the existing industrial historic landscape (remembering that the historic landscape is characterised as it survives and can be recognised in the present day landscape) is considered to be Low owing to the large-scale and widespread changes that occurred in the later 20th century and the limited historic legibility which can be seen.
- 14.86 The Essex Project Site has yet to form part of the detailed Historic Landscape Characterisation baseline report. However the Essex County Council HER characterises the Site as being 'Industrial'. This character type includes the Essex Project Site, Tilbury Docks to the west and Tilbury Power Station to the east. Other areas of the Study Area surrounding the Essex Project Site are characterised as 'Historic earthworks' (Tilbury Fort), with unimproved intertidal areas and sea defences along the edge of the River. To the north of the Essex Project Site the area is characterised by its modern development with character types described as 'built up areas- urban development' and 'motorways'. However the former rural and marshland character of the area are still legible in this landscape as, in the northern part of the Study Area areas of 'drained reclamation' and agricultural enclosures are also present.

Historic seascape character

- 14.87 The Kent Historic Landscape Characterisation (Croft *et al.* 2001) covers the marine study area. The study area has been divided into three areas to facilitate description: the Kent Project Site, the Essex Project Site and the general Thames Area.
- 14.88 The area around the existing Bell Wharf at the Kent Project Site is characterised as coastal land with mudflats and enclosed land reclaimed from tidal marsh. Previous development is also recorded, such as the Aggregates Quay in Swanscombe Marshes. There are also flood and erosion defences, sea defences, an anchorage, communication cables, a hydrocarbon pipeline, a submarine power cable, and the HS1 Channel Tunnel Rail Link. Palaeochannels have also been recorded. Further along the coast to the north-

east is an area of shingle foreshore.

- 14.89 At the Essex Project Site there is an existing jetty system associated with Tilbury station rail pier and Tilbury Cruise and Ro-Ro Terminal and Jetty, with Tilbury docks immediately to the west, and Tilbury Fort immediately to the east. Evidence in the wider area includes oil and gas pipelines, and a submarine power cable; there are also flood and erosion defences. There is also evidence for palaeochannels.
- 14.90 In the wider area of the Thames there are examples of industry, including industrial production and aggregate; of jetties, wharves, piers, and a freight terminal, indicating the high volume of vessels collecting materials and passengers; anchorages, and beacons and lighthouses to provide safety measures from navigational hazards. There are also known wreck sites, obstructions, and areas of foul ground. There has been dredging associated with navigational channel maintenance, and with berthing pockets. There is further evidence of seabed development, including pipelines and power cables. Along the mudflat shores there are sea and erosion defences. There is also evidence for palaeochannels. On the surface, in addition to vessel traffic related to industry and the commercial shipping route, there is also leisure sailing, a yacht club, and pleasure piers.

POTENTIAL SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROPOSALS

Introduction

- 14.91 The following section presents a preliminary assessment of the environmental effects of the construction and operation of the Proposed Development, as described in chapter five of the PEIR. All sensitivity ratings, predicted impacts and significance of effects ratings are subject to change following the completion of all the additional and updated baseline assessment work and the finalisation of the design.

Preliminary direct effects during construction phase

Archaeological remains - direct effects

Terrestrial

- 14.93 The construction phase of the Proposed Development has the potential to result in direct, permanent adverse impacts on archaeological remains across the Project Site. At present full construction details for the Proposed Development are unknown so this assessment will be subject to change for the ES Chapter.
- 14.94 The position of the resort access road will be outside of the area of the Palaeolithic Sites near Baker's Hole (1003557) Scheduled Monument located to the east but is within the SSSI which has Palaeolithic deposits of equal importance (Very High). The construction of the access road, the construction of a retaining wall, and a 5m working area on the western side of the retaining wall will require excavation into these

deposits, which could also extend within the Scheduled area. This will result in an effect of high magnitude of effect to deposits of very high importance resulting in a preliminary major adverse effect prior to mitigation.

- 14.95 The people mover route is aligned over the Palaeolithic Scheduled Monument. However, it is proposed that the people mover route and cycle way will be raised on a polystyrene embankment in order to minimise physical effects. At present it is assumed that limited ground removal will take place for the embankment and that Palaeolithic remains will be preserved *in situ* beneath the route. At present this is considered to have no physical impact to the Palaeolithic deposits as part of the Scheduled Monument but will restrict access to this part of the SSSI from any future investigation. This results in a high magnitude of effect to deposits of very high importance resulting in a major adverse effect prior to mitigation.
- 14.96 The Palaeolithic Desk-Based Assessment (Appendix 14.5) identified other areas as being of equivalent Palaeolithic potential and importance which also lie within the route of the A2(T) junction and access road. These deposits are considered to be of very high importance and the construction of the resort access road and junction will result in a high magnitude of effect, which will result in a major adverse effect prior to mitigation.
- 14.97 Current design proposals indicate that the resort access road is aligned through one of the two parts of the Scheduled Monument, Neolithic Sites at Ebbsfleet. This monument is of high importance and as such embedded mitigation is currently proposed which will involve raising this section of the road over the monument on a lightweight polystyrene embankment. This will reduce physical impacts to the monument during construction. The nature of any ground removal is currently unknown. As a worst case scenario a high magnitude of effect is possible which would result in a major adverse effect. The assessment of effects will be revisited in the ES as more information becomes available on the construction methods and below ground impacts.
- 14.98 Two other Scheduled Monuments of high importance are located within the Kent Project Site (Springhead Roman Site and Medieval woodland boundary in Darenth Wood); however based on the current masterplan there will be no direct physical impacts to these monuments. As such there is not expected to be any direct effects to these two Scheduled Monuments as a result of the Proposed Development. Changes to the development proposals within this area would require a review of the assessment of effects.
- 14.99 The area around Ebbsfleet International Station has previously yielded evidence of prehistoric archaeological features and it is possible that additional remains could exist within the area for the Resort access road and the transport interchange. Should associated remains exist these would be expected to be of moderate value. The damage or removal of these deposits would result in a high magnitude of effect resulting in a preliminary moderate adverse effect, prior to mitigation.

- 14.100 The remains of J.B White Portland Cement Works and the associated tramway (WA774 and WA790) are recorded as being located at Swanscombe within the proposed leisure core and car parking area and are of high importance. The construction of the leisure core is planned to take place within the area of the cement works which is expected to result in the destruction/removal of archaeological remains. The magnitude of impact is expected to be high, upon a heritage asset of high importance, which would result in a major adverse effect prior to mitigation.
- 14.101 Within the area proposed for the leisure core a 19th century outfarm east of Craylands Lane is recorded (WA727). An outfarm being a separate farm or holding managed by a manager or tenant and remote from the main farm or owner's establishment. These are considered to be of low importance. The magnitude of impact is expected to be high, upon a heritage asset of low importance, resulting in a preliminary minor adverse significant effect prior to mitigation.
- 14.102 Modern remains are also recorded within the area proposed for the leisure core upon the peninsula, which include air raid sirens, communication shelter, air raid shelter and the Thames Tar distillery works. All of these heritage assets are recorded as being demolished and as such there is unlikely to be any below-ground survival, and these are considered to be of negligible importance. Should below-ground remains survive these would be subject to a high magnitude of effect. However, due to their negligible heritage value, the effect to heritage significance is considered to be 'not significant'.
- 14.103 Partial remains of a derelict sewage works exist within the area for the leisure core on the peninsula (WA940), which is considered to be of negligible heritage value. Construction activities within the area are expected to will have a high magnitude of effect. However, due to the negligible importance of the sewage works the predicted effect to heritage significance is considered to be 'not significant'.
- 14.104 The Galley Hill Skull and Roman Tile kiln was found to the north of London Road during quarrying activities in 1888 and 1904. The remains were excavated and removed so there is no impact to this heritage asset as a result of the development (WA110, WA277).
- 14.105 Craylands Lane Pit (WA775) is a former chalk quarry located to the south of London Road, which has been partially infilled. Development proposals within the pit involve the construction of 500 apartments. Whilst this will be a physical impact, it is not expected to destroy any archaeological remains or affect the pit itself, and as such this would have a preliminary negligible magnitude of effect to heritage significance and is 'not significant' in EIA terms.
- 14.106 Other 19th century remains are recorded within the area proposed for the back of house area in the south-eastern part of the peninsula, such as Northfleet Papermills (WA776) and Britannia Cement Works (WA770). These are considered to be of low importance. The construction of the Resort's back of house area would result in a high magnitude of effect to heritage significance, resulting in a preliminary minor adverse

effect prior to mitigation.

- 14.107 Post-medieval records including earthworks of linear features and the site of former buildings are recorded within the Essex Project Site (WA1086 and WA1088). Based on the current master plan, these are not within the area to be developed and as such are not currently expected to be affected by the development proposals. If proposals within this area changed this will be reassessed as part of the ES.
- 14.108 A rectilinear enclosure of unknown date is recorded on the peninsula within the area for the Leisure Core. The cropmark has not been verified by any intrusive investigation and is currently of an unknown date and importance. Should this feature exist as an archaeological feature the effect of the construction of the leisure core would have been a high magnitude of effect. However, as the importance of the asset is unknown the significance of the effect is also unknown (WA1027).
- 14.109 The peninsula holds potential for geoarchaeological remains, waterlogged remains and/or other archaeological remains which are presently undiscovered, the extent and significance of which are currently unknown. These deposits/remains are predicted to be subject to a high magnitude impact as a result of the development within the leisure core. As the importance of these remains is unknown the significance of effect also unknown. A geophysical survey and borehole survey are proposed to be undertaken upon the peninsula and the results of these investigations will inform a full assessment of the effects in the ES.
- 14.110 The remaining heritage assets on the peninsula lie at the edge of the Project Site in the inter-tidal and marine area, so are considered as marine assets below (para 14.122-14.125).
- 14.111 A ditch of post-medieval date was recorded during excavations at Station Quarter South (WA653). It is possible that additional associated remains or a continuation of this or similar features of a similar date and importance could be found within the area for the A2(T) junction. The continuation of similar post-medieval remains would be expected to be of low importance. The construction activity is expected to have a high magnitude of effect upon a heritage asset of low value, which would result in a preliminary minor adverse effect prior to mitigation.
- 14.112 A medieval ditch (WA566) and trackway (WA570) were previously discovered at Springhead Nursery adjacent to the area for the A2(T) junction and was excavated and recorded at the time. It is possible that continuation of these features or associated features could be found within the area for the A2(T) junction, which would be subject to a high magnitude of effect as a result of the development. As these heritage assets are of low importance this would result in a preliminary minor adverse effect prior to mitigation.
- 14.113 The area for the proposed A2(T) junction lies within and adjacent to the expected extent of the Springhead Roman Town and a wealth of archaeological finds, features and structure of high value have been discovered within this area which were

excavated for the construction of High Speed 1 (HS1) and preserved by record. This includes Roman roads and a roadside settlement as well as a ritual site. These remains are of high significance and are known to continue within the area for the proposed A2(T) junction and as such would be subject to a high magnitude of effect as a result of the construction of the A2(T) junction. This would result in a preliminary major adverse effect prior to mitigation.

- 14.114 Adjacent to the exit from the proposed junction towards the A2(T) is a Roman temple which was previously investigated, recorded and preserved *in situ*. It is likely that this will be within the area of the proposed A2(T) exit slip-road. As a worst case scenario this will be subject to a high magnitude of effect and is considered to be of high importance, resulting in a preliminary major adverse effect.
- 14.115 To the north of Springhead Roman town the postulated route of a Roman road extends to the north within the area for the A2(T) junction and a Roman cemetery has also been found within the area for the exit of the junction and the Resort access road. It is expected that the road could exist within the A2(T) junction and that the cemetery site could extend within the area for the junction. Due to their association with the Roman town these are also considered to be of high importance. These would be subject to a high magnitude of effect as a result of the development, which would result in a preliminary major adverse significant effect.
- 14.116 Roman settlement at Springhead was predated by late-Iron Age activity, which is thought to have been the origins of the Roman ritual site established later. This included a processional way, viewing platform, ritual pits and large enclosures within the area surrounding the Ebbsfleet river, which were excavated and recorded during the archaeological works associated with HS1 and were considered to be of high value/importance. It is possible that associated remains of high importance could continue within the area for the A2(T) junction. This would be subject to a high magnitude of effect as a result of the development resulting in a preliminary major adverse significant effect prior to mitigation.
- 14.117 A cropmark of unknown date is recorded within the area for the proposed A2(T) junction (WA1037). The cropmark has not been verified by any intrusive investigation and is currently of an unknown date and importance. Should this feature exist as an archaeological feature the magnitude of effect would be high. However, as the importance of the assets is currently unknown the significance of the effect is also unknown.
- 14.118 Springhead is considered to be the birthplace of the cultivated watercress industry which later developed into a tourist attraction (WA786 & WA768). Remains associated with watercress production could be found within the area for the A2(T) junction, which would be considered to be of high importance. The construction for the junction would cause an effect of high magnitude, which would result in a major adverse effect prior to mitigation.

- 14.119 The Essex Project Site holds potential for geoarchaeological deposits to exist beneath the area for the proposed car park. These remains are of unknown importance as this has not yet been investigated or verified by any intrusive investigation. The magnitude of the effect is dependent upon the depth of deposits and the depth of the proposals in this area which are both currently unknown. As a worst case scenario a high magnitude of effect is assumed. The presence/absence and importance of these deposits would be clarified following the additional baseline surveys and will be assessed further and presented within the ES.
- 14.120 It is likely that unknown archaeological remains will exist within the area for the Proposed Development within both the Kent and Essex Project Sites. The significance of these archaeological remains is currently unknown. A high magnitude of the effect would be caused by the construction works (particularly where these involve excavation or any earth-moving activities). As the significance of these assets is currently unknown the significance of the effect remains unknown.
- 14.121 Other heritage assets are recorded within the Project Site limits however they are currently outside of the area for the Proposed Development. Details of activities such as landscaping, utilities, flood defence works, habitat creation and enhancement are currently unknown. Below ground effects of these activities will be considered within the ES chapter once this information becomes available and it is possible that heritage assets currently considered to be unaffected could be affected by the development proposals. This would be reviewed and assessed fully in the ES Chapter where necessary. .

Marine

- 14.122 The construction phase on both sides of the Thames has the potential to result in direct, permanent adverse impacts on marine archaeological remains within the footprint of these works.
- 14.123 The river transport infrastructure, relating to a floating jetty, ferry terminals and the repair or replacement of White's Jetty has the potential for impact, through piling, jack up legs or anchors of construction vessels, and possible associated dredging, to impact sites in the vicinity. In addition, flood defence and drainage works around the coast of the Kent Project Site has the potential to impact undesignated intertidal sites.
- 14.124 There are no Protected Wrecks in the study area, and the data are currently being sought from the NRHE and UKHO to confirm the presence or absence of known shipwreck or obstruction material. There is potential for previously unrecorded sites and material. As with the terrestrial area, there is potential for geoarchaeological remains and waterlogged remains, the extent and significance of which are currently unknown. They will likely be subject to high magnitude of effect as the result of jetty development. The significance of these remains is currently unknown and therefore the significance of effect also remains unknown. Marine geophysical and geotechnical surveys of the Proposed Development areas would allow a more complete assessment

of the effects within the Environmental Statement.

- 14.125 Intertidal sites identified through the Historic Environment Records, including derelict vessels and a prehistoric trackway, are considered to be of Moderate to Low importance. Any impact to these would be permanent and non-reversible, and therefore it would be of medium to high magnitude, leading to minor to moderate significance of effect.

Built heritage - direct effects

- 14.126 The Grade II* Riverside Station and Landing Stage lies within the Essex Project Site and a description of the asset is provided in paragraph 14.77 above. The Riverside Station is currently unused and the Proposed Development offers the opportunity to re-use and ensure the long term use and upkeep of this heritage asset of high importance. Proposals for the re-use of the building are currently at an early stage, although it is anticipated that this will be used for passenger facilities for the ferry terminal. The development proposals will be assessed within the Heritage Statement and ES Chapter as they evolve in terms of the effects of the proposals upon the historic fabric of the building.
- 14.127 Two built heritage assets lie along London Road and have been considered here as part of the direct effects of the Proposed Development, predominantly associated with the Leisure Core. The Milestone off of London Road (WA674) is of post-medieval date and is considered to be of low importance. This asset lies outside of the main development area beside an existing road and, based upon the emerging London Resort master plan, it is likely that this heritage asset will be retained as part of the development proposals and as such there is expected to be no direct effects to this heritage asset. Should development proposals change this assessment of effects would be reviewed. .
- 14.128 Similarly, a George V pillar box is on London Road is of negligible importance. Based upon the emerging London Resort master plan, it is predicted that this will be retained as part of the development proposals and as such there is expected to be no direct effects to this heritage asset. Should development proposals change this assessment of effects would be reviewed.
- 14.129 Broadness Lighthouse (WA689), is considered to be of low importance. It is anticipated that this will be retained as part of the development proposals and as such there are expected to be no direct effects to this heritage asset. Should development proposals change this assessment of effects would be reviewed.
- 14.130 Three Tramway Tunnels are located within the Kent Project Site (WA917, WA918, WA919) which extend beneath London Road within the northern part of the Kent Project Site, considered to be of low importance. To the south of London Road the current proposals are for housing in this area. At present the effects of the development proposals upon the tramway tunnels are unknown so the significance of the effect upon this heritage asset is unknown.

- 14.131 The Possible gatehouse or Factory building (WA798) located to the north of Galley Hill Road is likely to be of early 20th century origin and is considered to be of negligible importance. It is likely that this building will be demolished as part of the development proposals which would be a high magnitude of effect. Preliminary assessment considers the magnitude of this effect to be 'not significant' in EIA terms, due to the negligible importance of the asset.
- 14.132 Two Cold War anti-vehicle bomb obstacles are recorded at Ebbsfleet International Station (WA890 & WA964). It is anticipated that these will be retained as part of the development proposals and that there will be no change to these heritage assets.

Preliminary indirect effects during construction phase

- 14.133 Indirect effects during the construction phase could arise from activities involving the presence of cranes, flashing lights on moving vehicles and noise and dust created by construction activities. These would be localised, short term, temporary effects that would be fully reversible and are not considered to harm the significance of designated or undesignated assets. The full assessment of indirect effects is provided in relation to the operational development, as this is where the maximum effects are predicted. This preliminary assessment will be kept under review as further details of construction activities become available.
- 14.134 The assets included below are those that derive some of their significance from associated deposits/assets that would be subject to physical effects during the construction phase. An assessment is made of the effect of the loss of these associated deposits/assets on the significance of the designated heritage assets through change to setting.

Archaeological remains - indirect effects

Springhead Roman Site (1005140) and Roman Enclosure SE of Vagniacis (1004226)

- 14.135 The scheduled remains of the Springhead Roman Site are located to the south of the A2(T) and the Roman walled cemetery lies to the south-east of the Site. These monuments derive their significance from their archaeological interest. Excavations in the mid-20th century identified structures relating to both the domestic occupation of the town (shops, bakery, road surface) and evidence relating to its religious focus (temples) within the Springhead Roman Site. The initial excavations were undertaken on the southern side of the A2(T) and as such the scheduled area just covers this part of the Roman town. During excavations for HS1 extensive remains relating to the Roman town and religious centre were discovered outside of the scheduled area of equivalent significance. The monument is not considered to have any architectural/artistic or historic interest.
- 14.136 The monuments derive a small part of their significance from their setting. Their

setting is comprised of its position within the landscape and extensive surviving associated remains that have been discovered from outside of the scheduled areas. The route of the Roman road is reflected through the route of the modern A2(T) and whilst the course of the Ebbsfleet has been modified since the Roman times it is still present within the landscape. The presence of the additional remains associated with the town and of a contrasting rural Roman villa to the north help to build a picture of the scheduled monument within its contemporary landscape, and it is the archaeological context of its setting which makes a contribution to significance.

- 14.137 The introduction of the new A2(T) junction and the Resort access road within the setting of the monuments will result in a minor change within the setting of the monument as there is an existing junction at this location. As the monuments derive much of their significance from their archaeological interest and not from setting, this is considered to have a negligible magnitude of effect to the significance of the assets and is considered to be 'not significant' in EIA terms.

[Aspidin's Kiln (1004227)]

- 14.138 Aspidin's Kiln is located at Northfleet and derives most of its significance from its historic and archaeological interest. It derives historic interest as a well preserved example of downdraught kiln used in the production of cement and is thought to be the oldest Portland Cement kiln in the world. The monument has archaeological interest relating to its construction and deposits of material it produced.
- 14.139 Whilst the immediate setting of the monument has changed over time, the monument does derive some significance from its wider setting, including the chalk quarry pits used for cement working that are still evident across the landscape. The Kent Project Site contains some areas of former quarries and is also the site of the Portland Cement Works, which has some surface expression through foundation pads and tramlines embedded in hardstanding. It is anticipated that the physical impacts during the construction phase to the Portland Cement Works will result in a change to the wider setting of Aspidin's Kiln. The below-ground remains of the associated Portland Cement Works will be preserved by record, and this change to setting is expected to have a negligible magnitude of effect to the significance of Aspidin's kiln through change to setting which is considered to be 'not significant' in EIA terms. .]

Palaeolithic Sites near Baker's Hole (1003557)

- 14.140 As described above, the monument derives a small part of its significance from its setting, as it does have some connection to the surrounding landscape to sites of other similar preserved deposits. The Proposed Development is expected to result in the preservation of the deposits within the Scheduled Monument but will result in the destruction of some of the deposits within the SSSI and the associated deposits of similar value which lie within the surrounding area. It is the archaeological context of its setting that contributes to its significance. The loss of the associated deposits would affect the

contribution that setting makes to the significance of the asset. This is expected to be a low magnitude of effect upon an asset of very high importance, resulting in a preliminary minor adverse effect. .

Built heritage - indirect effects

Grade II* Riverside Station and Landing Stage, Tilbury (1111547)

- 14.141 The significance of the Grade II* listed Riverside Station and Landing Stage is described above. The associated development will involve the construction of the multi-storey car park within the Essex Project Site, within the immediate setting of the Riverside Station. The station derives part of its significance from the previously associated railway line which has now been removed and resurfaced to make way for the new car park building. The removal of this the railway to make way for the car park building resulted in a change to setting which leading to a reduction in the contribution of setting to significance. This is considered to be a low magnitude of effect as the asset also derives significance from its architectural and historic interests and not only from its setting. These interests remain unaffected by the removal of the railway. A preliminary low magnitude of effect upon an asset of high importance would result in a minor adverse effect to heritage significance.

Historic seascape character

- 14.142 The Historic Seascape Character assessment indicates an area of industrial, commercial and leisure use, with jetties, piers and other transport infrastructure already present. Therefore, the development of a new floating jetty or repair or replacement of White's Jetty will have a negligible impact. Additionally, there is already considerable vessel traffic on this section of the Thames, for a wide variety of purposes, and construction traffic will have a short temporary impact.

Preliminary direct effects during operational phase

Archaeological remains- direct effects

Terrestrial

- 14.143 A programme of mitigation will be carried out prior to the operation of the Proposed Development which will result in a large corpus of archaeological information being gathered. The nature of the use, display and interpretation of the archaeological evidence is currently under discussion and will be more fully addressed in the Environmental Statement and supporting appendices.
- 14.144 It is not currently believed that the operational phase will have any direct physical impacts on any of the Scheduled Monuments or undesignated archaeological remains within the Project Sites. The effects on archaeological sites identified as sensitive receptors during the construction phase will have been mitigated prior to and during

that phase and no further impacts during the operation phase are envisaged.

Marine

- 14.145 Impacts during the operation of the Proposed Development could include maintenance work on jetties or maintenance dredging (if required). If these are within areas of previous impact, any impact will be of negligible magnitude. In addition, impacts to archaeological sites identified as sensitive receptors during the construction phase will have been mitigated prior to and during that phase, and mitigation measures, such as Protocols, could remain in place. However, if impacts extend beyond the current development area, for example if a wider dredging area is required, then there is potential for impact which should be assessed.
- 14.146 There is potential for direct effects on marine archaeological sites due to changes to erosion and siltation regimes, for example if there is increased scour adjacent to proposed jetty piles or on the edges of proposed dredging. Increased erosion could result in exposing currently buried features, and their resulting damage or destruction, whereas increased siltation could lead to their protection. As the area to be impacted is relatively small, and there are already existing standing features associated with the jetties, the effects are likely to be minor, however this should be reviewed in the Environmental Statement if further studies relating to physical processes are undertaken.

Built heritage - direct effects

- 14.147 A programme of mitigation will be carried out prior to the operation of the Proposed Development which would include Historic Building Record, where necessary. The nature of the use, display and interpretation of the record is currently under discussion and will be more fully addressed in the Environmental Statement and supporting appendices.
- 14.148 It is not currently believed that the operational phase will have any direct physical impacts on any of the identified built heritage assets.

Preliminary indirect effects during operational phase

Archaeological remains- indirect effects

- 14.149 During the operational phase it is anticipated that effects to significance could arise through change to the setting of designated archaeological assets. These effects would occur through the permanent presence of the leisure core, landscaping planting, car parks, the Resort access road, related housing, back of house area and the A2(T) junction. Additional effects could occur through changes to lighting and noise associated with the operation of the Resort. Details of the lighting design and noise assessment are currently unavailable however the Resort's Leisure Core will be lit at night. The assessment of the operational effects of the Proposed Development will be

refined prior to the completion of the ES. .

Palaeolithic Sites near Baker's Hole (1003557)

- 14.150 The Palaeolithic Site near Baker's Hole is within the Kent Project Site and is of very high importance for its archaeological interest where most of its significance is derived. The monument consists of below ground archaeological deposits which are considered to be internationally significant. The monument has some historic value through its historical excavations by notable archaeologists during the 19th century and its connections with the chalk extraction industry.
- 14.151 The setting of the monument is comprised of its immediate surroundings and its relationship with other similar surviving deposits in the SSSI and the immediate area beyond. The monument derives a small amount of significance from its setting, as it does have some connection to the surrounding landscape to sites of other similar preserved deposits. The contribution that the setting makes to the significance of the monument is not considered to be reduced by additional noise or lighting as a result of the Leisure Core located to the north, the adjacent people mover and Resort access road or the A2(T) junction to the south. Consequently, there is expected to be a negligible magnitude of effect to heritage significance and the way that significance is appreciated through change to setting, which is considered to be 'not significant' in EIA terms. .

Tilbury Fort (1021092)

- 14.152 Tilbury Fort is situated on low lying ground on the north bank of the River Thames. The monument includes the buried remains of a Tudor blockhouse constructed in 1539, a large and complex fort and battery dating to the 17th century, late 19th and early 20th century alterations and a WWII pillbox. The Fort is of architectural and archaeological interest, relating to both its built and buried remains. The monument derives much of its significance from its historic interest and is considered to be England's best example of a late 17th century coastal fort, designed at a time when artillery had become the dominant feature of warfare. The fort has good survival of original features with most of the main buildings still standing. There is also a large quantity of historical information which adds to the knowledge of its use, development, strategic importance and connections to other associated fortifications. .
- 14.153 The setting of the monument comprises its immediate surroundings as well as its visual relationship with the river and surrounding associated fortifications. The setting of the monument makes an important contribution to the significance of the asset. Its setting comprises the River Thames and the bordering historic grazing marshes. The monument has important views to Gravesend, to Kent and east and west along the river which form part of the setting of the monument. The fort forms a defensive triangle with New Tavern Fort and Shornmead Fort, both located at Gravesend, and the line of sight between these assets makes an important contribution to significance. Another important connection is with Coalhouse Fort located 5km to the east of Tilbury

Fort on the Essex side of the River. During the use of the fort it was a requirement that land between Tilbury and Coalhouse fort was kept free of vegetation.

- 14.154 The proposed Leisure Core will introduce development into the view looking west along the river but is not anticipated to block or completely restrict important views as the leisure core would be at a distance of 4km to the west. However this long distance view does make a contribution to the setting of the monument. The monument is of high importance and the introduction of the leisure core and associated lighting at night is expected to have a preliminary medium magnitude of effect upon a receptor of high value resulting in a moderate adverse effect to heritage significance. .
- 14.155 The proposed multi-storey car park on the Essex Project Site will be introduced close to the Fort within its setting which is considered to contribute to its significance. Currently there are buildings between the Tilbury Fort and the area for the proposed car park structure, however these are approximately two storeys in height but are relatively large industrial style buildings. The proposed car park building is expected to exceed the height of these intervening buildings. Whilst the setting is considered to make an important contribution to the significance of the monument the Essex Project Site is not currently considered to make a positive contribution to its setting. As such the preliminary assessment of the introduction of the car park building is expected be a medium magnitude of effect resulting in a moderate adverse effect. .

Medieval Woodland Boundary in Darenth Wood (1013378)

- 14.156 The medieval woodland boundary survives as an earthwork relating to the management of 35.5 acres of woodland during this period. The significance of the asset is derived from its archaeological interest as it survives well and has been positively dated. The monument now survives within a relatively urban environment and as such most of its original woodland setting has been lost. As such the setting of the asset is considered to make a minimal contribution only to the overall significance of the asset. The works on the A2(T) closest to the monument are likely to comprise additional road signage for the resort. The preliminary assessment of additional signage is not expected to change the setting of the monument, resulting in a negligible magnitude of effect which is 'not significant' in EIA terms.

Springhead Roman Site (1005140) and Roman Enclosure SE of Vagniacis (1004226)

- 14.157 As mentioned above the monuments derive a small part of their significance from their setting. Their setting is comprised of its position within the landscape and extensive surviving associated remains that have been discovered from outside of the scheduled areas. The presence of the additional remains associated with the town, the presence of a contrasting rural roman villa to the north help to build a picture of the scheduled monument within its contemporary landscape and it is the archaeological context of its setting which makes a contribution to significance. The modern A2(T) passes through the centre of the Roman town and has severed this physical connection. The existing A2(T) junction also sits where previous archaeological remains relating to the Roman

town were found.

- 14.158 It is the archaeological context of the surrounding landscape which contributes to the setting of the asset. The physical surroundings of the monuments are not considered to contribute to the setting of the monuments. These monuments derive their significance from their archaeological interest and a small part of its significance from setting. The Proposed Development will involve the construction of the Resort access road and the A2(T) junction which is within the setting of the monument. However the preliminary assessment of the introduction of the resort road and junction within the setting of the monument is not expected to affect their significance overall. The asset is of high value and the predicted magnitude of the effect is expected to be negligible. This assessment concludes that the effect to heritage significance is 'not significant' in EIA terms.

New Tavern Fort (1013658)

- 14.159 New Tavern Fort derives its significance from its historic, architectural and archaeological interests and its setting. New Tavern Fort is an unusually complete example of an 18th century fortification which was of strategic importance to the Thames Estuary. In the north west corner of the fort is Milton Chantry, a 14th century building representing the chapel of a medieval hospital which is well preserved and has many surviving architectural features from the 14th-19th centuries (historic and architectural interests). Archaeological remains relating to the medieval hospital and development of the fort are expected to survive below ground (archaeological interest).
- 14.160 The setting of the asset consists of its relationship with the River Thames and with Tilbury Fort on the opposite side of the River. The main purpose of the fort was to provide a strategic view and defensive position on the southern side of the Thames opposite Tilbury Fort, to be able to provide cross fire with Tilbury Fort during a time of threat from French invasion. Views across the River to Tilbury Fort and in both directions up and down the river are an important aspect of the significance of the monument and it is possible to view a large expanse of the Thames from New Tavern Fort, allowing its significance to be appreciated and understood. Currently there is no intervisibility between Gravesend Blockhouse and New Tavern Fort due to intervening modern development. Development within the Essex Project Site will result in the construction of multi-storey building within the peripheral view looking towards Tilbury Fort, and is not considered to interrupt or affect the appreciation of the view between Tilbury Fort and New Tavern Fort, as they are directly opposite. The building will be introduced into the view looking west along the river, however within this view there are already the industrial building to the east of the Essex Project Site and the industrial buildings located at Tilbury Docks. As such the preliminary assessment of the introduction of the new car parking structure within this view is expected to have an effect of negligible magnitude upon the overall significance of New Tavern Fort. This effect would be 'not significant' in EIA terms.

- 14.161 There are not expected to be any operational effects associated with lighting or noise which could affect the monument during the operational phase.

Gravesend Blockhouse (1005120)

- 14.162 Gravesend Blockhouse derives its significance from its historic and archaeological interests and its setting. The blockhouse was built in 1539 for Henry VIII as part of a chain of coastal defences along the Thames to protect London and the dockyards at Deptford and Woolwich (historic interest). The blockhouse has been partially demolished and there remains potential for archaeological investigation to reveal more information about the structure and its use (archaeological interest).
- 14.163 The setting of the asset is comprised of its relationship with the River Thames and the other coastal defences in the area; Tilbury, Higham, Milton and East Tilbury. The Gravesend Blockhouse crossed fire with the Tilbury Blockhouse and also guarded the ferry crossing between Gravesend and Tilbury. The original location of the ferry crossing is thought to have been slightly further east of the modern ferry terminal closer to Worlds End Public House (formerly known as Ferry House) as this was a shorter crossing distance. As such a large proportion of its setting is related to Tilbury Fort and its immediate surroundings although the views along the view of the Thames in both directions also contribute to its significance. The construction of the car park building within the Essex Project Site will introduce an additional structure within the peripheral view looking west from Gravesend Blockhouse along the river. Whilst this view does contribute positively to the setting of the blockhouse, the building will not restrict the more important view towards Tilbury blockhouse or the river. It will introduce a new building into this view, however, there already exists large industrial buildings within this view associated with Tilbury Docks and large building located adjacent to the Essex Project Site. As such the preliminary assessment expects this to have a negligible magnitude of effect to the significance of the asset overall, and the significance of any impact is assessed as “not significant” in EIA terms.

Marine archaeological features

- 14.164 If there are any indirect effects on marine archaeological features, relating to changes to erosion and sedimentation regimes, they will likely have occurred during the construction phase or immediately after, and any further indirect effects will be of negligible magnitude and ‘not significant’ in EIA terms.

Built heritage- indirect effects

- 14.165 Indirect effects to built heritage during the operational phase of the Proposed Development may arise through the permanent and continual presence of the leisure core, Resort access road and people mover, car parking, hotels and related housing within the setting of built heritage assets. Other effects during the operational phase could arise from an increase in noise and lighting within the surroundings of heritage assets. The preliminary assessment of these operational effects is assessed below. This

assessment will be updated as more information becomes available on the lighting design and noise assessment and presented in the ES.

Grade II listed Boundary Stone, Ingress Park, Lovers Lane (1410237)

- 14.166 The Boundary Stone is located just within the boundary of the Kent Project Site and a description of the asset is provided in Paragraph 14.78. The boundary stone is of high importance by virtue of its national listing. The boundary stone derives the majority of its significance from its historic interest as a marker of the Ingress Estate in 1830 when substantial works were taking place to the estate. Some of its significance is derived from its group value with other designated and non-designated structures and garden features located to the west within the Ingress Abbey designed gardens. Its survival as the only remaining of three boundary stones also contributes to its significance.
- 14.167 The boundary stone derives very little of its significance from its setting. Formerly its setting would have made a much greater contribution due to its relationship with the other structures and gardens of Ingress Abbey. However, recent development has destroyed its former setting and severed this connection through the introduction of a modern residential estate over what would have been the Ingress Abbey Gardens. This former connection is no longer perceptible on the ground. The London Resort's Leisure Core is in the wider setting of the boundary stone but in an area that does not contribute to the significance of the asset or the ability to appreciate or understand that significance. Consequently the preliminary assessment of the introduction of the Proposed Development is expected to have a negligible magnitude of effect upon a heritage asset of high value. This assessment concludes that the effect upon heritage significance is considered to be 'not significant' in EIA terms.
- 14.168 Similar to the above, the additional lighting and noise as a result of the Leisure Core is predicted to have a negligible magnitude of effect to heritage significance which is 'not significant' in EIA terms.

Grade II listed Garden Bridge (1410227)

- 14.169 Garden Bridge at Ingress Abbey is located on the western edge of Kent Project Site and is of high importance by virtue of its national listing. The Garden Bridge derives most of its significance from its architectural interest as a flint and brick garden bridge built as part of a garden walk which had views towards the Thames. Some of its significance is derived from its group value with other undesignated and designated garden structures and features which survive from the former Ingress Abbey Garden. Part of its significance is derived from its intact survival. .
- 14.170 The Garden Bridge derives very little of its significance from its modern setting. Formerly its setting would have made a greater contribution to significance, due to its relationship with the other structures and gardens however this former setting has been destroyed by the recent modern development on the Ingress Abbey Estate. The former relationships between Ingress Abbey and its associated landscape and garden

features are no longer appreciable on the ground. As such the introduction of the London Resort and any associated lighting or noise is not expected to harm the significance of the asset or the ability to appreciate or understand that significance. This preliminary assessment expects that this will have a negligible magnitude of effect to a heritage asset of high value, which is 'not significant' in EIA terms. .

Swanscombe Cutting Footbridge Crossing A2(T) East of A296 (1119762)

- 14.171 The Swanscombe Footbridge derives its significance predominantly from its architectural interest as a footbridge constructed from concrete in the 1960s with a post-tensioned arch. This was the first of several similar bridges built in Kent and is recognised for its elegant arched design over a dual carriageway. The setting of the bridge is comprised of the road that it spans and the areas that it connects on either side and this makes a minor contribution to its significance as the reason for its purpose and function. The western arm of the Kent Project Site which covers the A2(T) and the footbridge is within the setting of the footbridge. The A2(T) Highway Works are expected to comprise additional signage on the A2(T) to the resort. As such the bridge will be retained in an appropriate setting and its significance as an exemplar of concrete architecture will not be affected. The proposals do not change the setting of the asset as it is retained within its urban, roadside environment in which its form and function are readily appreciable, so no potential effect upon heritage significance is assessed.

Grade II* listed Church of All Saints (1085781)

- 14.172 The Grade II* listed church of All Saints is located at the junction of London Road and High Street and was built in 1894 as the parish church for Swanscombe and is of high importance by virtue of its national listing. It was designed by Robert Norman Shaw in the Gothic style, and is finished in knapped flint with stone dressings. The church sits upon a high point in the landscape and close to a sheer chalk cliff leading down to the peninsula. The church was designed to sit on this prominent position at a high point in the landscape overlooking Swanscombe to the west and south and over the peninsula and the Thames beyond. The church derives most of its significance from its historic and architectural interest but has been converted into residential units and as such some of its historic and architectural interest has diminished internally. The setting of the church comprises the settlement which it served (Swanscombe) and the peninsula and River Thames beyond. The church derives some of its significance from its setting, as it was deliberately sited on a high point in the landscape as a local landmark overlooking the Thames and the surrounding settlement. .
- 14.173 The Proposed Development will be introduced within the setting of the converted church. The leisure core will be on lower ground to the north of the church, and as such it is not anticipated that the resort will completely block views towards the Thames. However, it is likely that the taller elements will be introduced into the views looking towards the Thames which will result in a change within the setting of the converted church. Whilst the converted church already sits in a busy urban

environment the introduction of lighting and additional noise upon the peninsula will also result in a change to setting. The preliminary assessment predicts that overall this will result in a medium magnitude of effect, to an asset of high importance, resulting in a moderate adverse effect.

- 14.174 The Proposed Development will involve the construction of 500 apartments located within Craylands pit to the west, the construction of a back of house area to the east principally associated with provision of electricity and energy for the resort. The north of the church upon the peninsula other associated development will include the construction of hotels, conference centre, resort access road and back of house area. As mentioned above the church sits on a high point in the landscape and all of these activities for the associated development will sit at lower levels either within former quarry pits either side of the church or down on the peninsula itself. It is not expected that the apartment buildings will extend above the height of the quarry pit and as such will not be introduced into views to the west. Similarly much of the development within the quarry pit to the west is also expected to sit within the quarry, however there are proposals that some of the buildings will have photo-voltaic panels on the roofs to provide green energy to the resort. The effects of the panels upon Church of All Saints will be assessed within the ES as more information becomes available. It is predicted that some of the taller elements of the associated development such as the hotels will extend above the height of the chalk cliff down to the peninsula and as such could interrupt views from the church looking north towards the river.
- 14.175 Details of the lighting design are being developed and will be considered as part of the ES. However the Leisure Core will be lit at night and there could be new sources of noise within the setting of the church. Whilst the church already sits within an urban environment the introduction of lighting and additional noise from the associated development will result in a change to setting, however this is not expected to affect the heritage significance of the asset. The preliminary assessment predicts that this will result in a negligible magnitude of effect, to an asset of high importance, resulting in a 'not significant' effect.

Grade I Church of St Clement (1147660)

- 14.176 The Church of St Clement lies upon the Essex side of the River Thames opposite the peninsula and is Grade I listed and so is of high importance. The church derives much of its significance from its architectural and historic interests. The church has its origins in the 12th century and some survival of the original fabric is evident in the north and south aisles. The remainder of the church dates to the 13th century with some 14th and 15th century additions. Historic mapping from the 19th century shows that the Church was in an isolated position at the edge of the marshland, with the Thames beyond.
- 14.177 Historically the church would have derived some of its significance from its setting, however this has changed greatly over time. The church is now situated within an industrial estate with large industrial buildings surrounding it on its northern and eastern side which, together with an electricity sub-station to the west and a car park

to the south, have eroded the historical setting of the church. Formerly the wider setting would have comprised its relationship with the Thames overlooking the marshland on all other sides. Its modern industrial setting is not considered to contribute to the church's significance, although its wider setting and its former relationship with the river are still discernible from the church. The preliminary assessment of the introduction of the London Resort into the wider setting of the development is expected to have a low magnitude of effect, to an asset of high value, resulting in a minor adverse effect.

Grade II Wharf Public House (1147907)

14.178 Wharf Public House lies on the Essex side of the Thames opposite the peninsula and is of high importance. It derives its significance from its historic and architectural value with some significance derived from its setting. The Wharf was constructed as a public house in the 18th century on the banks of the River Thames. Its historic and architectural interests are derived from its age and its surviving original features. .

14.179 The public house was constructed with views across the River Thames with its primary façade facing south. Today, a flood defence exist on the banks of the Thames consisting of a bank and wall which restrict views across the river. However, its former relationship with the river can still be appreciated and understood. The northern and western parts of the peninsula closest to the Wharf Public House are to be retained as marshland and as such there will be a buffer between the London Resort and the listed building. The Kent Project Site lies within the wider setting of the asset and due to the height of the development it is likely that the taller Resort elements such as rides and hotels will be introduced into the sight line looking south from the public house. The preliminary assessment expects a low magnitude of effect, upon a heritage asset of high value, resulting in a minor adverse effect.

Grade II The White Hart Public House (1427217)

14.180 The White Hart Public House lies on the Essex side of the Thames in the southern part of Grays and is of high importance. It derives its significance from its architectural and historic interests as well as its completeness and original interior plan. The Public House was built in 1938 and is a well preserved example of an inter-war public house built by Charrington's Brewery. The building replaced an earlier 18th century building and was seen as a conscious effort to maintain continuity of function and presence of the historic riverside community at Grays. .

14.181 The modern setting of the White Hart comprises its immediate surroundings which is formed of modern residential development, its associated car park, the now pedestrianised High Street, and Grays Town Wharf. The building has some connection to its wider surroundings and the riverside as mentioned above. The primary elevation faces west so views towards the river do not appear to have played a role in the design or positioning of the building as this was based upon the replacement of an earlier building with its frontage towards High Street. As the Kent Project Site is not

considered to contribute to the significance of the asset, the preliminary effect of the presence of the London Resort on the significance of the asset and the way that its significance is appreciated is expected to be negligible magnitude of effect which would result in a 'not significant' effect in EIA terms.

- Grade II Church of St Peter and St Paul, Grays (1111573)

14.182 The church of St Peter and St Paul is located on the Essex side of the River at Grays and is of high importance. It has its origins in the 13th century but it was largely rebuilt in the later 19th century. The asset derives much of its significance from its historic and architectural interest. In common with most churches, earlier phases of construction are likely to have left an archaeological trace, often incorporated into the fabric, particularly at foundation level. As such, the church could hold potential for archaeological interest if phases of the 13th century structure exist below ground.

14.183 The church is situated within the urban environment on the southern edge of Grays, within the parish that it serves. Its setting consists of its modern surroundings within the settlement of Grays and it is not considered that the Kent Project Site contributes to the significance of the asset or the appreciation or understanding of that significance. As such there is not expected to be any change to setting of the asset as a result of the London Resort development on the peninsula. The Proposed Development will have a preliminary negligible magnitude of effect to the heritage significance of the church which is 'not significant' in EIA terms.

Grade II* State Cinema (1111543)

14.184 The State Cinema is located on the Essex side of the Thames in Grays was constructed in 1938 and derives most of its significance from its architectural interest, survival and rarity. It is considered to be one of the best preserved 'super cinemas' of the late 1930s which retains a large number of original Art Deco architectural details and is considered to be of high importance. These cinemas were once common however it is now very rare to find one that has remained unaltered. However Listed Building Consent was granted in August 2018 for the conversion of the cinema into a public house, which will involve internal and external alterations to the building. .

14.185 The setting of the State Cinema consists of its urban surroundings in the centre of Grays. The Kent Project Site is not considered to contribute to the setting of the State Cinema, which derives its significance largely from its architectural interest. The London Resort development would not result in any reduction to the contribution that setting makes to significance and as such a preliminary negligible magnitude of effect to the heritage significance of the asset is expected. This is a 'not significant' effect in EIA terms. .

Grade II 1 Knockhall Road (1101524)

14.186 1 Knockhall Road is a mid-19th century lodge at the junction of Knockhall Road and

London Road in Swanscombe which was formerly associated with a large 19th century house located to the north known as *Nelson House* and later, *Riversdale*. The main house had fallen into disrepair by the 1950s and was subsequently demolished and redeveloped. The lodge is the only surviving structure from this former small estate. The lodge derives much of its significance from its architectural interest, being built in a castellated gothic style. .

- 14.187 The setting of the asset has changed over time. Formerly its setting would have comprised the land and gardens of the main estate. However, its setting has been diminished through the loss of its associated house and grounds. The lodge is now isolated in terms of its location, design and former associations. The Kent Project Site lies within the wider surroundings of Knockhall Road but is not considered to contribute to the significance of the asset. The Proposed Development is not expected to cause any reduction in the contribution of setting to significance of the asset or the way in which the asset is appreciated and understood. As such a preliminary negligible magnitude of effect is expected, which would result in a 'not significant' in EIA terms.

Grade II Ingress Abbey (1085779)

- 14.188 Ingress Abbey is located to the west of the Swanscombe Peninsula and is of high importance. Its significance is derived from its historic, archaeological and architectural interests. Ingress Abbey was built in 1833 in the Tudor Gothic Style as a grand house. The house has historic connections with the architect Charles Moreing, who designed the house, and the Victorian poet Eliza Cook who is known to have stayed and written some of her poetry here. It also has archaeological interest as it is thought that this may be the fifth house on this site and as such there is potential for archaeological remains of the former houses to survive. It has some group value with the surviving listed landscape features including a terrace wall to the north of Ingress Abbey, the Monks Well, Lovers Arch, stable block, the grange, tunnels and garden arch, flint walled tunnel, brick lined tunnel, Garden Bridge and boundary stone. .
- 14.189 The former setting of the Ingress Abbey has been lost through the redevelopment of its associated grounds. This was formerly a designed and landscaped garden with follies, bridges, mound, walkways, tunnels, and a well. Some of these features survive and are listed in their own right, although the area of the former gardens has been redeveloped as a residential estate and the relationship between the assets is no longer perceptible on the ground. As such the contribution that the setting makes to the significance of the asset has been very much reduced. The Proposed Development will result in a change within the wider landscape surrounding Ingress Abbey but the wider landscape is not considered to contribute to the significance of the asset. This is not expected to harm the appreciation or understanding of the significance of the asset and as such a preliminary negligible magnitude of effect to heritage significance is expected, which would result in a 'not significant' effect in EIA terms.

Transmission Tower, Swanscombe Marshes (WA938)

- 14.190 The electricity transmission tower on Swanscombe Marshes is undesignated but is considered to be of moderate importance and would be retained as part of the development proposals. The Transmission Tower derives its significance from its historic value and from its setting. The tower is a local landmark at 193m tall and links with another on the northern bank of the river. These are reportedly the tallest electricity pylons in the UK. .
- 14.191 The setting of the asset comprises its relationship with the river that it spans, the opposing pylon and the wider electricity generation and transmission infrastructure that it connects to. The introduction of the London Resort is not considered to harm the setting of the asset in these terms. Whilst the Proposed Development will introduce tall structures within the setting of the asset, at the tallest this is expected to be 60m so will not compete in height with the 193m tall tower. Preliminary effects to the significance of the asset are expected to be a negligible magnitude of effect resulting in a 'not significant' effect in EIA terms.

Grade II* Riverside Station and Landing Stage (1111547)

- 14.192 The Grade II* Riverside Station and Landing Stage is located within the Essex Project Site and a description of the asset provided earlier in this chapter. The Proposed Development will involve the construction of the four storey car park, adjacent to and within the immediate setting of the Riverside Station. Historically this is where passengers would have disembarked from the train to connect to their ongoing ferry service. Presently this area is currently occupied by surface level car parking and a single industrial building, which make a neutral contribution to significance. The introduction of the four storey building will restrict views towards the Riverside Station from the north and will result in the introduction of a large scale building within the immediate setting of the Listed Building, resulting in change to its setting. This change is expected to be a medium magnitude of effect as the asset also derives significance from its architectural and historic interests and not only from its setting. In addition the connection of the Riverside Station to the ferry terminal will also remain intact and will be enhanced by the re-use of the building and the landing stage. Overall a preliminary medium magnitude of effect to significance upon an asset of high importance would result in a moderate adverse effect. .
- 14.193 No additional indirect effects associated with lighting or noise during the operational phase of the development are expected to occur.

Grade I Church of St Botolph (1054093)

- 14.194 The Church of St Botolph is located at Northfleet and derives much of its significance from its historic, archaeological, architectural interests and its setting. The church is known to have had an Anglo-Saxon predecessor on this site on top of 'The Hill', Northfleet, overlooking the river, and as such has archaeological interest for remains of the earlier Saxon Church. The present church dates to the early 14th century but exhibits some 13th century and earlier fabric, however the tower was built after its

collapse in 1717. The historic and architectural interests are derived from the age of the building and the ecclesiastical architecture.

- 14.195 The immediate setting of St Botolph is contained predominantly within the confines of the Conservation Area within which it sits, which covers the historic core of Northfleet. Key views which contribute positively to the conservation area are inward looking with only a key view out of the conservation area across the foreshore at Gravesend and along the River Thames. Whilst Northfleet sits on top of a hill views looking towards the surrounding landscape are relatively restricted by modern development and mature trees and in addition the immediate area to the north east of the church has been altered in the 19th century by quarrying activity. Whilst the development at the transport interchange and the resort road will be within the wider surroundings of the St Botolph's Church, this will be located almost 1km from the church. The areas of the Kent Project Site which are closest to the Church (350m) are not currently proposed for any development activities. As such there is considered to be a negligible magnitude of effect, which would result in a 'not significant' effect in EIA terms.
- 14.196 Other taller elements of the Proposed Development such as the hotels and attractions will be located on the peninsula and are beyond the setting of the Church. As such no effect to significance is expected as a result of this. Due to the distance of almost 1km between the resort road and St Botolph's church there is not expected to be any additional effects relating to noise or lighting during the operational phase.

Grade II* Old Rectory House (1081093)

- 14.197 The Old Rectory House lies to the south of the historic core of Northfleet and derives much of its significance from its historic and architectural interests. The rectory House was constructed in the 16th century as a timber framed hall house. During restoration works in the 19th century details about its original form were revealed such as its unglazed windows and lack of chimney in its original design as well as a date after which it was divided into two storeys. The building has now been converted into offices.
- 14.198 The setting of the asset is considered to make a minimal contribution to the significance of the asset. The Old Rectory House currently sits within a largely industrial area with large business premises within its immediate surroundings and residential housing beyond. Whilst these elements are within the setting of the building they are not considered to contribute positively to that setting. The Kent Project Site boundary lies 270m to the north east of the Old Rectory but there are currently no development activities planned to be undertaken in the area closest to the Rectory. The resort road will be introduced within the wider surroundings of the Rectory this is not considered to affect the overall significance of the asset. As such a preliminary negligible magnitude of effect is anticipated, which would result in a 'not significant' effect in EIA terms.
- 14.199 The Proposed Development is considered to lie outside of the setting of the Grade II*

Old Rectory House and as such no additional indirect effects have been identified during the operational phase of the development associated with lighting or noise.

Grade I Parish Church of St Peter and St Paul, Swanscombe (1085788)

- 14.200 The Grade I listed Parish Church of St Peter and St Paul at Swanscombe, derives much of its significance from its architectural and historic interests. The church has a long history and it is thought that the lower part of the tower is of Saxon origin. Other parts of the surviving fabric date to the 11th and 12th centuries such as parts of the tower and chancel. Much of the remainder dates to the 13th century with 15th century windows and restorations were undertaken in the 19th century and 20th centuries. It is possible that the church has some potential for archaeological interest due to its early origin and potential for remains of early phases of the church to be discovered below ground.
- 14.201 The church derives some of its significance from its setting which comprises the church yard which surrounds it and Swanscombe cemetery on the opposite side of the road and Swanscombe Park. These green spaces are considered to contribute positively to the setting of the asset. The wider setting comprises the settlement at Swanscombe and the community it serves. The Kent Project Site lies within the wider landscape surrounding the church and is not considered to contribute to setting of the asset and the way that the church is appreciated or understood. The introduction of the resort road and the transport interchange hub within the wider surroundings of the church is not considered to result in an effect to the significance of the asset, as such no effect is anticipated.

Grade II World's End Inn (1111632)

- 14.202 The World's End Inn is located on the north bank of the Thames, close to the Essex Project Site, and derives its significance from its architectural interest and its setting. The Inn was constructed in the late 17th or early 18th century as a timber framed house which was altered in the 19th century into an Inn. On early historic maps of the 18th century it is marked as 'Ferry House' at the edge of West Tilbury Marsh. The Inn is likely to have provided facilities and a stopping place for passengers using the ferry crossing. Worlds End Inn is of high value by virtue of its national listing.
- 14.203 The surroundings of the asset have changed over time from its former isolated position at the edge of the marshland to its more industrial surroundings today. Its isolation and desolate nature of its former surroundings contributed to the naming of the Inn as 'Worlds End'. The introduction of the multi-storey car park building within the Essex Project Site will have an effect upon the significance of the asset through change within setting. The preliminary assessment expects a low magnitude of effect resulting in a minor adverse effect.

Greenhithe Conservation Area

- 14.204 Greenhithe is a residential neighbourhood set on the waterfront east of Dartford which

has consistently had a historical relationship with the Thames, firstly as a shipping village, later associated with ship repair and a naval college and finally as a ferry link from both Essex and Gravesend with connections to the Pilgrims Way. Nowadays, views from within the Conservation Area towards the river are relatively restricted, resulting in quite a closed setting in terms of its relationship to the wider area. Glimpses of the river are available from the older part of the Conservation Area. The Conservation Area is of moderate heritage importance/sensitivity in accordance with Table 14.1 above.

- 14.205 The Conservation Area derives its significance from its architectural and historic interest derived predominantly from its Grade II and locally listed buildings. Views out of the Conservation Area towards the Kent Project Site are not considered to contribute to the significance of the Conservation Area. The London Resort and its lighting design are not expected to harm the character or appearance of the Conservation Area. As such preliminary assessment expects a negligible magnitude of effect, which would result in a 'not significant' effect in EIA terms.

High Street and Queen Street Conservation Area, Gravesend

- 14.206 The High Street and Queen Street Conservation Area at Gravesend derives much of its significance from its architectural and historic interests. Queen Street was a back lane to the medieval high street and had a connection to the riverside via Crooked Lane. Queen Street became the market place in the 16th century and but the later 18th and 19th century town grew away from the river. Modern developments within the Conservation Area have altered the appearance of the Conservation Area but it still retains its 19th century character.
- 14.207 The immediate setting of the Conservation Area is comprised of the area within its boundary, but does have some wider setting beyond this, through its connections with the development of the town. The Conservation Area does have some historic connection to the riverside but this became less important over time. However view across to Tilbury area considered to contribute positively to the Conservation Area. The introduction of the four storey car parking building within the Essex Project Site on the northern side of the river will introduce an additional industrial style building into an already predominantly industrial area and as such this not expected to affect the significance of the Conservation Area and as such a preliminary negligible magnitude of effect is predicted, which would result in 'not significant' effect in EIA terms. As the Essex Project Site is to be used for parking and ferry crossing, there are not expected to be any additional impacts from lighting or noise during the operational phase.

Gravesend Riverside Conservation Area

- 14.208 The Gravesend Riverside Conservation Area derives its significance from its historical, architectural interests and from its setting. The Thames is considered to be part of the immediate setting of the Conservation Area and makes a positive contribution to its setting. Principal positive views have been identified looking towards Tilbury and along

the river in both directions. The introduction of the four storey car parking building within the Essex Project Site on the northern side of the river will introduce an additional industrial style building into an already predominantly industrial area. As this does form part of the setting of the Conservation Area this is expected to have a preliminary low magnitude of effect, to an asset of moderate value, resulting in a minor adverse effect. As the Essex Project Site is to be used for parking and ferry crossing, there are not expected to be any additional impacts from lighting or noise during the operational phase, resulting in a continuing neutral effect.

Lansdowne Square Conservation Area, Gravesend

- 14.209 The Lansdowne Square Conservation Area, Gravesend derives much of its significance from its architectural interest and historic interest as a planned prestigious suburb of Gravesend, built by local wealthy landowner Jeremiah Roshier. A small part of its significance is derived from its setting and riverside location as this was how visitors to Rosherville Gardens could visit from London using a private pier. Whilst the River Thames does contribute to the setting it is not considered that the Essex Project Site makes a contribution to the setting of the asset and as such there is expected to be a preliminary negligible magnitude of effect upon the Conservation Area of moderate value, which is a 'not significant' effect in EIA terms. As the Essex Project Site is to be used for parking and ferry crossing, there are not expected to be any additional impacts from lighting or noise during the operational phase.

Historic landscape character

- 14.210 The Proposed Development will be within the geographical area of Swanscombe Peninsula, Darenth and Bean (A2(T) Highway works) and Swanscombe (A2(T) junction) as defined in the Historic Landscape Characterisation. The importance of the historic landscape of this area was considered to be low (Swanscombe and Swanscombe Peninsula) and moderate (Darenth and Bean). The Proposed Development will change the historic landscape character from broadly marshland and industrial to a developed site. This change is expected to have high magnitude of impact resulting in a minor adverse effect. The A2(T) junction will replace an existing junction at this location so is not expected to change the Historic Landscape of this area. The A2(T) Highway works within Darenth and Bean are expected to be minimal and are not expected to change the historic landscape of this area. .

Historic seascape character

- 14.211 The Historic Seascape Character assessment indicates an area of industrial and leisure use along both banks of the Thames, with jetties, piers and other transport infrastructure already present. Therefore, the presence of the Proposed Development's jetty and ferry terminals would be viewed in context and would have negligible impact. Additionally, there is already considerable vessel traffic on this section of the Thames, for a wide variety of purposes, and additional transport of visitors will have a negligible impact.

PROPOSED MITIGATION

Construction phase

14.212 Following the completion of the additional surveys and field investigations as detailed in the Baseline Studies section, a full and appropriate mitigation strategy will be formulated. Mitigation measures may also be required for impacts resulting from other works associated with the development such as the provision of ecological mitigation areas or mitigation measures for flood risk management. Consultation with other disciplines will be carried out throughout the EIA process so that all potential effects can be predicted as far as possible and appropriate mitigation measures formulated and implemented.

14.213 Following statutory consultation, it is anticipated that a Historic Environment Framework will be prepared to inform an appropriate strategy for further evaluation, mitigation and publication for any archaeological resource identified. The following mitigation measures may be included within the Historic Environment Framework and are outline only, subject to consultation and agreement with the statutory authorities and are subject to change. More detail on mitigation measures will be provided within the ES chapter following further baseline assessment and evaluation which will inform the mitigation strategy.

- Preservation *in situ* where possible.
- Excavation and recording of archaeological remains and built heritage.
- A programme of strip, map and record.
- Watching brief during construction.
- Construction Environmental Management Plan (CEMP).
- Consideration of the working areas of large plant and machinery.
- Consideration of the works hours of large plant and machinery.
- Screening of listed building and other heritage assets where appropriate.
- Marine archaeological assessment (for example by diver or ROV survey) of any sites identified through geophysical survey that could be impacted. and
- Implementation of a protocol for unexpected archaeological discoveries in the marine zone.

Operational phase

- 14.214 The mitigation of operational impacts, specifically those relating to effects to significance through change within setting, is difficult given the scale of the Proposed Development project and the nature of the effects. Appropriate sensitive design could help to mitigate indirect effects upon heritage assets. .
- 14.215 Opportunities will be sought to mitigate effects on the historic environment through improving public understanding and engagement with, and protection of, the historic environment. The nature of the use, display and interpretation of the archaeological and built heritage evidence is currently under discussion and will be more fully addressed in the ES and supporting appendices but options include:
- enhancement of the historic environment through improved access to archaeological sites;
 - enhancement of public understanding through the display of artefacts and the results of archaeological excavations; and
 - enhancement of public understanding through display of artefacts and results of archaeological excavations;
 - enhancement of public understanding through open days and events;
 - continued implementation of marine archaeological protocol, if maintenance work is required for jetties or dredging.

RESIDUAL ENVIRONMENTAL EFFECTS

- 14.216 The expected residual effects on heritage assets, based on current understanding of the baseline and the predicted effects of the Proposed Development are presented in the following tables. The proposals and assessment are subject to further work and consultation with statutory consultees and are therefore subject to change in the ES.

Table 14.9 Preliminary summary of impacts, mitigation and residual effects for the construction phase during the London Resort Development

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
Archaeological Remains- Terrestrial							
1003557	Palaeolithic sites near Baker's Hole. Scheduled Monument and SSSI	Very High	SM- possible direct effects to implement lightweight polystyrene embankment and working area for retaining wall associated with the Resort Road	High	Major Adverse	Embedded Mitigation- People mover will be upon a lightweight polystyrene embankment, but is likely that there will be some physical impact to implement this. Further assessment and evaluation is currently being undertaken and is forthcoming, after which appropriate mitigation measures can be formulated. Mitigation may include, but is not limited to, full scale excavation of all Palaeolithic archaeological material which will be physically impacted. Reduction in physical impacts to the monument through avoidance and limiting of the landtake for working areas	Moderate Adverse

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
1003557	Palaeolithic sites near Baker's Hole. Scheduled Monument and SSSI		SSSI-Permanent; Direct; Physical.	High	Major Adverse	Further assessment and evaluation is currently being undertaken and is forthcoming, after which appropriate mitigation measures can be formulated. Mitigation may include, but is not limited to, full scale excavation of all Palaeolithic archaeological material which will be physically impacted. Reduction in physical impacts to the monument through avoidance and limiting of the landtake for working areas	Moderate Adverse
1003557	Palaeolithic sites near Baker's Hole. Scheduled Monument and SSSI		SM-Indirect Effects;	Low	Minor adverse	None Proposed	Minor Adverse
N/A	Undesignated Palaeolithic Deposits near Baker's Hole	Very High	Permanent; Direct; Physical	High	Major Adverse	Further assessment and evaluation is currently being undertaken and is forthcoming, after which appropriate mitigation measures can be formulated. Mitigation may include, but is not limited to, full scale excavation of all Palaeolithic archaeological material which will be physically impacted. Reduction in physical	Moderate Adverse

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
						impacts to the monument through avoidance and limiting of the landtake for working areas	
1004206	Neolithic sites near Ebbsfleet. Scheduled Monument	High	Possible direct effect depending on construction method for embankment (currently unconfirmed)	High (to be confirmed)	Major Adverse	Embedded Mitigation- Resort Access Road will be upon a lightweight polystyrene embankment on top of the Scheduled Area- details of requirement for excavation currently unknown. Archaeological evaluation and mitigation should archaeological remains be affected	Minor Adverse
1005140 1004226	Springhead Roman Site and Roman Enclosure SE of Vagniacis	High	Permanent; Indirect effects	Negligible	Not Significant	None Proposed	Not Significant
1004227	Aspidin's Kiln	High	Permanent; Indirect effects	Negligible	Not Significant	Archaeological evaluation and mitigation of the associated remains at the Portland Cement Works will preserve the associated remains by record	Not Significant
N/A	Continuation or remains associated with prehistoric activity identified around Ebbsfleet Station	Medium	Permanent; Direct Effects	High	Moderate Adverse	Mitigation may include, but is not limited to, full scale excavation of all archaeological material	Minor Adverse

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
WA774	J. B. White Portland Cement Works, Swanscombe	High	Permanent; Direct; Physical.	High	Major Adverse	Mitigation may include, but is not limited to, full scale excavation of all archaeological material and recording of the tram tracks which will be physically impacted.	Minor Adverse
WA790	Tramway J. B. White Portland Cement Works, Swanscombe, 19th century	High	Permanent; Direct; Physical.	High	Major Adverse	Mitigation may include, but is not limited to, full scale excavation of all archaeological material and recording of the tram tracks which will be physically impacted.	Minor Adverse
WA940	Derelict sewage works, modern	Negligible	Permanent; Direct; Physical.	High	Not Significant	None proposed	Not Significant
WA727	Farmstead/Outfarm	Low	Permanent; Direct; Physical	High	Minor Adverse	None proposed	Minor Adverse
WA970	Thames Tar Distillery Works	Negligible	Permanent; Direct; Physical	High	Not Significant	None proposed	Not Significant
N/A	Geoarchaeological or other unknown archaeological remains	Unknown	Permanent; Direct; Physical.	High	Unknown	Mitigation may include, but is not limited to, full scale excavation of all archaeological material	Unknown
WA888 WA802 WA887	Air Raid Siren, Air Raid Shelter, communication shelter	Negligible	Permanent; Direct; Physical	High	Not Significant	None Proposed	Not Significant

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
WA1027	Rectilinear Enclosure	Unknown	Permanent; Direct; Physical	High	Unknown	Mitigation may include, but is not limited to, full scale excavation of all archaeological material	Unknown
WA653	Additional or associated remains of Post-medieval Ditch at Station Quarter South	Low	Permanent; Direct; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, full scale excavation of all archaeological material which will be physically impacted.	Not Significant
WA566 WA570	Additional or associated remains of Medieval Ditch and Trackway at Springhead Nursery	Low	Permanent; Direct	High	Minor Adverse	Mitigation may include, but is not limited to, full scale excavation of all archaeological material which will be physically impacted.	Not significant
WA267	Undesignated Remains relating to Springhead Roman Town	High	Permanent; Physical; Direct	High	Major Adverse	Mitigation may include, but is not limited to, full scale excavation of all archaeological material which will be physically impacted.	Minor Adverse
WA267	Late Iron Age remains associated with Springhead	High	Permanent; Physical; Direct	High	Major Adverse	Mitigation may include, but is not limited to, full scale excavation of all archaeological material which will be physically impacted.	Minor Adverse
WA1037	Cropmark	Unknown	Permanent; Physical; Direct	High	Unknown	Mitigation may include, but is not limited to, full scale excavation of all archaeological material which will be physically impacted.	Unknown

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
WA786 WA768	Watercress Beds/Cultivation	High	Permanent; Physical; Direct	High	Major Adverse	Mitigation may include, but is not limited to, full scale excavation of all archaeological material which will be physically impacted.	Minor Adverse
WA775	Craylands Lane Pit, Swanscombe, 19th century	Low	No physical effect to the chalk pit itself.	Negligible	Not Significant	Craylands pit is partially infilled and residential structures will be constructed within the pit-as such no mitigation measures are proposed.	Not Significant
WA770	Britannia Cement Works	Low	Permanent; Direct; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, full scale excavation of all archaeological material which will be physically impacted.	Not Significant
WA776	Northfleet Papermills	Low	Permanent; Direct; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, full scale excavation of all archaeological material which will be physically impacted.	Not Significant
N/A	Potential geoarchaeological remains within Essex Project Site	Medium	Permanent; Physical; Direct	High	Moderate Adverse	Mitigation may include, but is not limited to, full scale excavation of all archaeological material which will be physically impacted.	Minor Adverse
N/A	Other Archaeological remains currently unknown	Unknown	Permanent; Physical; Direct	High	Unknown	Mitigation may include, but is not limited to, full scale excavation of all archaeological material which will be physically impacted.	Unknown

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
WA1086	Riverside Tilbury-Earthworks Linear Features	Low	No physical effect based upon current design proposals	Negligible	Not Significant	None Proposed	Not Significant
WA1088	Site of former buildings near Tilbury Junctions	Low	No physical effect based upon current design proposals	Negligible	Not Significant	None Proposed	Not Significant
WA1158	Six Air Raid Shelters	Low	No physical effect based upon current design proposals	Negligible	Not Significant	None Proposed	Not Significant
WA1161	WWII Anti-aircraft ditches N of Little Thurrock Marshes	Low	No physical effect based upon current design proposals	Negligible	Not Significant	None Proposed	Not Significant
Built Heritage							
WA674	Milestone off of London Road	Low	No change; assumes no physical impacts as per development drawings	Negligible	Not Significant	None Proposed	Not Significant
WA866	George V Pillar Box	Low	No change; assumes no physical impacts as per development	Negligible	Not Significant	None Proposed	Not Significant

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
			drawings				
WA689	Broadness Lighthouse	Low	No change; assumes no physical impacts as per development drawings	Negligible	Not Significant	None Proposed	Not Significant
1111547	Grade II* Riverside Station and Landing Stage	High	Permanent; Direct; Physical. Development proposals currently unknown assessment of effects to the historic fabric will be assessed within the ES.	Unknown	Unknown	Historic Building Record	Unknown
WA890 WA964	Ebbsfleet International Station post-Cold War anti-vehicle bomb obstacles, Ebbsfleet, Dartford, Kent, modern	Negligible	No physical effects currently proposed	Negligible	Not Significant	None proposed	Not Significant
WA798	Possible gatehouse or Factory Building	Negligible	Permanent; direct	High	Not Significant	None proposed	Not Significant

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
WA917 WA918 WA919	Tramway Tunnels beneath London Road	Low	Unknown	Unknown	Unknown	Unknown	Unknown
Intertidal							
WA162	Wooden stake and brushwood trackway, dating to the Bronze Age to Iron Age, on foreshore near the mouth of Broadness Creek	Moderate	Permanent; Physical	High	Moderate Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA647	Wooden stakes and piles in foreshore by Swanscombe Marshes	Low	Permanent; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA648	Possible wooden vessel, Swanscombe Marshes	Moderate	Permanent; Physical	High	Moderate Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA649	Wooden structure by beacon, Broadness	Low	Permanent; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA676	Wooden structure, possibly the remains of a wharf, on foreshore by Swanscombe Marshes	Low	Permanent; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
WA677	Large wooden planks on foreshore by Swanscombe Marshes	Low	Permanent; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA678	Hard, Swanscombe Marshes	Low	Permanent; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA682	5 concrete pontoons by Swanscombe Marshes	Low	Permanent; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA683	Derelict vessel, Broadness	Moderate	Permanent; Physical	High	Moderate Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA741	White's Jetty, Broadness	Moderate	Permanent; Physical	High	Moderate Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA744	Hard, Broadness	Low	Permanent; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA747	Derelict vessel by Broadness Creek	Moderate	Permanent; Physical	High	Moderate Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
WA748	Beacon at Broadness	Low	Permanent; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA874	Bell Wharf Second World War mine watching post, Swanscombe, Kent	Moderate	Permanent; Physical	High	Moderate Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA933	Small concrete pier / quay by Broadness saltmarsh	Low	Permanent; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA934	Abandoned wooden vessel in saltmarsh Broadness Creek	Moderate	Permanent; Physical	High	Moderate Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA935	Wooden posts in foreshore, by Broadness	Low	Permanent; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA936	Anti-tank blocks / sea defences Broadness	Moderate	Permanent; Physical	High	Moderate Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA937	Wooden foundation on foreshore at Botany Salt Marshes	Low	Permanent; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
WA940	Derelict sewage works	Low	Permanent; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA946	Pier at Broadness	Low	Permanent; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
WA947	Bell Wharf, Broadness	Low	Permanent; Physical	High	Minor Adverse	Mitigation may include, but is not limited to, recording of all heritage assets which will be physically impacted	Minor Adverse
Marine							
N/A	Known marine assets on the seabed	Moderate to Unknown	Permanent; Physical	High	Moderate Adverse	Mitigation may include, but is not limited to, geophysical survey of assets, archaeological recording of all heritage assets which will be physically impacted	Minor Adverse
N/A	Potential marine assets on or under the seabed	Unknown, based on precautionary principle, assume High	Permanent; Physical	High	Major Adverse	Mitigation may include, but is not limited to, geophysical survey of assets, archaeological recording of all heritage assets which will be physically impacted; watching brief during construction works; implementation of archaeological protocol for unexpected discoveries	Minor Adverse

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
N/A	Palaeogeographic receptors	High	Permanent; Physical	High	Major Adverse	Mitigation may include further geotechnical surveys and archaeological assessment; implementation of archaeological protocol for unexpected discoveries	Minor Adverse

Table 14.10 Preliminary summary of impacts, mitigation and residual effects for the operational phase of the London Resort Development

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
Archaeological Remains							
1003557	Palaeolithic sites near Baker's Hole Scheduled Monument and SSSI	Very High	Permanent; indirect	Negligible	Not Significant	None Proposed	Not Significant
1021092	Tilbury Fort	High	Permanent; Indirect	Medium	Moderate Adverse	Mitigation through design Landscape screening may help in reducing effects where appropriate	Moderate adverse
1013378	Medieval woodland boundary in Darenth Wood. Scheduled Monument	High	Permanent; Indirect; Assumes no direct physical impacts as per	Negligible	Not Significant	None Proposed	Not Significant

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
			current design drawings				
1013658	New Tavern Fort	High	Permanent; Indirect	Negligible	Not Significant	None proposed	Not Significant
1005120	Gravesend Blockhouse	High	Permanent; Indirect	Negligible	Not Significant	None Proposed	Not Significant
1005140 1004226	Springhead Roman Town and Roman enclosure SE of Vagniakis	High	Permanent; indirect	Negligible	Not Significant	None Proposed	Not Significant
Built Heritage							
1410237	Boundary Stone Grade II	High	Permanent; indirect;	Negligible	Not Significant	None Proposed	Not Significant
1410227	Garden Bridge, Ingress Park, Grade II	High	Permanent; indirect;	Negligible	Not Significant	None Proposed	Not Significant
1119762	Swanscombe cutting footbridge crossing A2(T) east of A296 junction, Listed Building Grade II	High	Permanent; Indirect;	None	Not Significant	None proposed	Not Significant
1410237	Church of All Saints, Listed Building Grade II*	High	Permanent; Indirect;	Medium	Moderate Adverse	Mitigation through design. Limiting the opening hours of the development will reduce	Moderate Adverse

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
						noise impacts while landscape screening may help in reducing effects where appropriate	
N/A	Greenhithe Conservation Area	Moderate	Permanent; Indirect effect;	Negligible	Not Significant	None proposed	Not Significant
1147660	Grade I Church of St Clement	High	Permanent; indirect effect;	Low	Minor Adverse	Mitigation through design. Limiting the opening hours of the development will reduce noise impacts while landscape screening may help in reducing effects where appropriate	Minor Adverse
1147907	Grade II Wharf Public House	High	Permanent; indirect effect;	Negligible	Not significant	None Proposed	Not Significant
1427217	Grade II White Hart Public House	High	Permanent; indirect effect;	Negligible	Not Significant	None Proposed	Not Significant
1111573	Grade II Church of St Peter and St Paul, Grays	High	Permanent; indirect effect;	Negligible	Not Significant	None Proposed	Not Significant
1111543	Grade II* State Cinema	High	Permanent; indirect effect;	Negligible	Not Significant	None Proposed	Not Significant
1101524	Grade II 1 Knockhall Road	High	Permanent; indirect;	Negligible	Not Significant	None proposed	Not Significant
1085779	Grade II Ingress Abbey	High	Permanent; indirect;	Negligible	Not Significant	None Proposed	Not Significant

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
WA938	Transmission tower, Swanscombe Marshes, modern	High	Permanent; indirect;	Negligible	Not Significant	None Proposed	Not Significant
1111547	Grade II* Riverside Station and Landing Stage	High	Permanent; Indirect	Medium	Moderate Adverse	Mitigation through design.	Moderate Adverse
1054093	Church of St. Botolph Grade I	High	Permanent; Indirect;	Negligible	Not Significant	None proposed	Not Significant
1081093	Grade II* Old Rectory House	High	Permanent; Indirect;	Negligible	Not Significant	None proposed	Not Significant
1085788	Parish Church of St Peter and St Paul Swanscombe Grade I	High	Permanent; Indirect	None	Not Significant	None Proposed	Not Significant
1111632	Worlds End Inn Grade II	High	Permanent; Indirect	Low	Minor Adverse	Mitigation through design. Limiting the opening hours of the development will reduce noise impacts while landscape screening may help in reducing effects where appropriate	Minor Adverse
N/A	High Street and Queen Street Conservation Area	Moderate	Permanent; Indirect	Negligible	Not Significant	None proposed	Not Significant
N/A	Gravesend Riverside Conservation Area	Moderate	Permanent; Indirect	Low	Minor Adverse	Mitigation through design	Minor Adverse
N/A	Lansdowne Square Conservation Area	Moderate	Permanent; Indirect	Negligible	Not Significant	None proposed	Not Significant
Historic Landscape Character							

Reference Number	Description	Heritage Sensitivity (Value)	Type of Effect	Magnitude of Impact	Significance of Effect	Proposed Mitigation Measures	Expected Residual Significance of Effect
N/A	Swanscombe Peninsula	Low	Permanent; indirect; change to character	Medium	Minor Adverse	Embedded mitigation-retention of areas of marshland in the eastern part of the peninsula	Negligible
N/A	Darenth and Bean	Moderate	Permanent; Indirect; potential change to character A2(T) Highway works	Negligible	Not Significant	None Proposed	Not Significant
N/A	Swanscombe	Low	Permanent; Indirect; A2(T) junction	Negligible	Not Significant	None Proposed	Not Significant

CUMULATIVE AND IN-COMBINATION EFFECTS

- 14.217 The cumulative effects assessment identifies the significant effects of the Proposed Development project that have the potential to overlap with similar effects arising as a result of other projects or activities. Cumulative effects are defined as those which result from additive impacts caused by other past, present and reasonably foreseeable actions. In-combination effects arise from the reaction between effects of the development plan and programme of the project on different aspects of the environment.
- 14.218 Cumulative effects may therefore occur to archaeological and cultural heritage receptors that have the potential to be incrementally impacted by other existing, consented and/or proposed developments or activities. These impacts may be seen individually as minor but collectively as significant.
- 14.219 Potential cumulative effects incorporated into the assessment include direct effects upon archaeological and cultural heritage receptors and indirect effects. In cases where there is spatial or temporal overlap with the Proposed Development and other such developments, cumulative direct effects may occur with respect to the setting of archaeological and cultural heritage receptors. In-combination effects will be assessed as part of the ES in conjunction with the other technical disciplines.
- 14.220 The table below presents a list of recent planning applications submitted to Gravesham, Dartford and Thurrock Councils for developments which lie close to both the Essex and Kent Project Sites. This list will be revised and updated for the ES Chapter, following consultation with the statutory consultees.
- 14.221 In assessing the potential cumulative impacts for the London Resort, it is important to bear in mind that for some projects, predominantly those ‘proposed’ or ‘awaiting determination’ might or might not actually be taken forward. Thus there is a need to build in some consideration of certainty (or uncertainty) with respect to the potential impacts which might arise from the proposals. For example, relevant projects which are already under construction are likely to contribute to cumulative impact whereas projects which are not yet approved, are less certain to contribute to such impacts, some may not achieve approval or may ultimately not be built due to other factors.

Table 14.12 Preliminary Assessment of Cumulative Schemes

Reference	Name and Description	Distance from Project Site(s)	Project Status	Potential Cumulative Effects
EDC20/0076 EDC/19/0177 EDC/16/0004	Lafarge Cement UK, Northfleet Works DA11	680m to the east of the Kent Project	Permitted; Recent applications	No significant cumulative effects currently predicted

Reference	Name and Description	Distance from Project Site(s)	Project Status	Potential Cumulative Effects
Gravesham	9AN- Application for reserved matters for access, layout, appearance and landscaping (residential development)	Site	for discharge of conditions	
EDC 17/0038 EDC 19/0047 EDC 20/0087 Gravesham	Northfleet Embankment East, Gravesend	1.5km to the east of the Kent Project Site	Permitted; recent applications for discharge of conditions	No significant cumulative effects currently predicted
EDC/18/0009 EDC/ 19/0083 Gravesham	Phase 3 land west of Springhead Road	Adjacent to the east of Kent Project Site	Permitted; recent applications for discharge of conditions	No significant cumulative effects currently predicted
EDC/19/0216 Gravesham	Reservoir North of Lower Road, Northfleet, DA11 9SN	Adjacent to Kent Project Site (Botany Marsh)	Application withdrawn	No significant cumulative effects currently predicted
20200320 Gravesham	Sainsbury Superstores, Wingfield Bank- Store opening hours	Adjacent to Kent Project Site	Refused	No significant cumulative effects currently predicted
20191329 Gravesham	153 Springhead Road, Northfleet, Gravesend DA11 8JG	200m to the east of the Kent Project Site	Permitted	No significant cumulative effects currently predicted
20200044 Gravesham	168 Colyer Road, Northfleet, Gravesend- retention of enlarged rear dormer, revisions to rear window and door	330m to the east of the Kent Project Site	Permitted	No significant cumulative effects currently predicted

Reference	Name and Description	Distance from Project Site(s)	Project Status	Potential Cumulative Effects
	arrangement			
20200575 Gravesham	87 Hall Road, Northfleet, Gravesend- single storey rear extension	500m to the east of the Kent Project Site	Pending consideration	No significant cumulative effects currently predicted
20200564 Gravesham	8 Wombwell Gardens, Northfleet, Gravesend, DA11 8BL- conversion of garage into habitable room	1km to the east of the Kent Project Site	Pending consideration	No significant cumulative effects currently predicted
20/00197/FUL Dartford	Land At Tiltman Avenue, Greenhithe- storm water outfall	Adjacent to the western boundary of the Kent Project Site at the peninsula	Awaiting decision	No significant cumulative effects currently predicted
DA/18/01002/OU T	The Alma 26 High St Swanscombe- construction of 3 storey building with basement	60m to the west of the Kent Project Site at Swanscombe	Permitted	No significant cumulative effects currently predicted
19/01464/FUL Dartford	Land at Gilbert Close, Swanscombe- Demolition of Lock up garages and erection of 14 flats and 2 houses	1km to the west of the Kent Project Site	Awaiting decision	No significant cumulative effects currently predicted
20/00458/NONM AT Dartford	Land rear of 150-160 Milton Road, Swanscombe- movement of terrace 500mm forward	350m to the west of the Kent Project Site	Permitted	No significant cumulative effects currently predicted
20/00690/COU	68 High Street	60m to the	Awaiting	No significant

Reference	Name and Description	Distance from Project Site(s)	Project Status	Potential Cumulative Effects
Dartford	Swanscombe, DA10 0AH- Change of Use from Estate Agent to Beauty Salon	west of the Kent Project Site	decision	cumulative effects currently predicted
20/00470/NONM AT Dartford	22 Castle Street, Swanscombe- change to design of conservatory	240m to the west of the Kent Project Site	Permitted	No significant cumulative effects currently predicted
20/00050/LDC Dartford	17 Bramble Avenue, Bean, Kent- LDC for proposed dormer window in rear elevation	240m to the south of the Kent Project Site at Bean	Permitted	No significant cumulative effects currently predicted
20/00732/CDNA Dartford	Phase 1 & 2 St Clements Valley- details relating to parking for erection of 156 dwellings. Landscaping, parking and infrastructure	1.4km to the west of the Kent Project Site	Awaiting decision	No significant cumulative effects currently predicted
19/01278/DCOAP P Thurrock	Tilbury 2 Power Station, Fort Rd, RM18 7NR	Site boundary partially within the Essex Project Site	Permitted	No significant cumulative effects currently predicted
19/01838/SCO Thurrock	Thurrock Flexible Generation Plant	1.4km to the east of the Essex Project Site	Unknown	No significant cumulative effects currently predicted
19/01433/CV Thurrock	Barvills Farm, East Tilbury, Solar Farm	4km to the north east of the Essex Project Site	Permitted	No significant cumulative effects currently predicted
20/00284/OUT Thurrock	Land West of Lytton Road, Chadwell St Mary- 140	2.7km to the north of the Essex Project Site	Awaiting decision	No significant cumulative effects currently predicted

Reference	Name and Description	Distance from Project Site(s)	Project Status	Potential Cumulative Effects
	dwellings			
19/01373/OUT Thurrock	Land adjacent to Wood View and Chadwell Road, Grays- 75 residential units	3km to the north of the Essex Project Site	Awaiting decision	No significant cumulative effects currently predicted
19/01258/SCR Thurrock	Land part of former Cargill Site Tilbury Freeport- Tilbury waste wood storage and processing operation	2.5km to the north west of the Essex Project Site	Unknown	No significant cumulative effects currently predicted
19/01058/OUT Thurrock	Land part of little Thurrock Marshes, Thurrock Park Way- Outline App- 161 new dwellings	1.7km to the north of the southern Essex Project Site, adjacent to northern Essex Project Site	Awaiting decision	No significant cumulative effects currently predicted
20/00737 18/01114/FUL Thurrock	London Distribution Park, Windrush Road- Revised solar panel layout	1km to the north of the southern Essex Project Site, adjacent to the northern Essex Project Site	Permitted	No significant cumulative effects currently predicted
20/00740/FUL Thurrock	62-64 Armada House Sydney Road- construction of 3 dwellings with parking and landscaping	300m to the north of the Essex Project Site	Awaiting decision	No significant cumulative effects currently predicted
17/01616/FUL 17/01617/LBC	Old State Cinema, George St, Grays- Conversion from Cinema to Public House	1.3km to the north of the Kent Project Site	Permitted	No significant cumulative effects currently predicted

Direct effects***Archaeological remains***

14.222 Other development proposals in the vicinity of the Project Sites have the potential to result in harm to buried archaeological remains within the footprints of these developments where below-ground removal is required. Cumulative effects could occur as a result of development within other development sites that have similar archaeological interests to those of the London Resort, for example, similar Palaeolithic deposits to those at Baker's Hole, waterlogged remains within peats or river gravels or development which could affect other areas of the Roman town at Springhead. Where a decision has been made on the above applications, archaeological conditions have been placed upon those which have the potential to affect below ground remains. Assuming appropriate preservation by record, or where possible preservation in situ is achieved then this potential cumulative loss of these archaeological remains/deposits will be mitigated. If the mitigation measures are adhered to the overall cumulative effect is likely to be a minor adverse effect.

Built heritage

14.223 Development proposals within the vicinity of the Project Sites have the potential for result in on-going damage, alteration to and potential destruction of built heritage within their respective sites. There are not expected to be any cumulative direct effects to built heritage assets in the Project Sites as a result of development of the cumulative schemes.

Indirect effects***Archaeological remains***

14.224 Cumulative indirect effects to Archaeological remains could result from the potential increased degradation to the significance of buried archaeological remains through change within setting which could lead to a reduction in the contribution that setting makes to the significance of heritage assets. The effect of cumulative indirect effects will be assessed against the final development proposals and an agreed list of cumulative schemes and presented within the ES chapter. Indirect effects to archaeological remains could be mitigated to a greater or lesser extent by a combination of sensitive design and screening (if appropriate).

Built Heritage

14.225 Cumulative indirect effects to built heritage assets could arise as a result of an increased degradation to the significance of built heritage assets through change within setting. The effect of cumulative indirect effects will be undertaken against the final development proposal and the final agreed list of relevant cumulative schemes and presented with the final ES Chapter. The assessment of the Tilbury2 development

identified a potential effect to the significance of Tilbury Fort through change within setting prior to mitigation. The effects of this development and others in the Tilbury area in combination with the Proposed Development will be assessed for their cumulative effects upon Tilbury Fort within the ES chapter. In addition the Grade II* listed State Cinema located at Grays has a planning application submitted in relation to its redevelopment as a public house. The effect of this redevelopment upon the significance of the asset will be assessed against the final development proposals to identify any cumulative effects to these receptors. Presently no significant cumulative effects are predicted. Should significant effects be identified as part of the final ES it is anticipated that this effect could be mitigated to a greater or lesser extent by a combination of sensitive design and screening (if appropriate).

SUMMARY AND CONCLUSIONS

- 14.226 The baseline assessments which have been completed to date, together with the initial consultations with statutory authorities indicates that the Kent Project Site contains archaeological remains of Very High sensitivity which can be considered to be of international importance, specifically those relating to the Palaeolithic period. The Kent Project Site also contains a wide variety of High sensitivity heritage assets and sites dating to the prehistoric, Romano-British and Industrial periods, all of which are expected to be adversely affected by the Proposed Development. Further assessment work will clarify the presence and significance of these remains which will inform the mitigation strategy and the ES Chapter. .
- 14.227 As mentioned above, there is a very high potential for potential buried archaeological remains dating from the Palaeolithic period to be encountered at Baker's Hole and the surrounding area, which will be clarified and expanded on through continuing assessment work, which could be of international significance. A strategy for evaluating the Scheduled Monument and SSSI is currently being devised. .
- 14.228 The Essex Project Site holds potential for important geoarchaeological deposits comprising Holocene alluvial deposits, including peat and elevated areas of gravel which may have been dry in the Mesolithic and Neolithic periods. A single phase of evaluation was undertaken within the northern part of the Essex Project Site as part of the Tilbury2 project but this did not reveal any archaeological remains, within the trenches that were excavated within the Essex Project Site itself. .
- 14.229 Potential adverse indirect effects are also predicted to the heritage significance of a number of designated heritage assets, specifically a number of listed buildings in the area, through change to the setting of heritage assets that could lead to a reduction in the contribution that setting makes to heritage significance. Further assessment will clarify the severity and significance of these indirect effects in the Environmental Statement.
- 14.230 The Riverside Station and Landing Stage at Tilbury are Grade II* listed. Design

proposals for these structures are currently at an early stage and specific effects to these assets will be assessed fully within the Environmental Statement and accompanying Heritage Statement. As the Riverside Station and Landing Stage are currently under-utilised the Proposed Development offers the opportunity to ensure the re-use and long term survival of these structures. .

- 14.231 The preliminary impact assessment indicates that the greatest scope for significant effects on the archaeological resources would result from the construction of the Proposed Development. Confirmation as to whether further effects to archaeological remains are likely to arise will be confirmed as the project evolves.
- 14.232 Indirect effects to the significance of designated built heritage assets are expected to result from predominantly the Operational phase of the development. Effects during the construction phase, generally arise from the presence of flashing lights on moving vehicles, dust, and the presence of cranes and would be temporary and reversible after the construction phase has ended. These effects are not considered to affect the significance of heritage assets.
- 14.233 It has also been recognised that there exists within the Proposed Development project opportunities for the furthering of archaeological and cultural heritage knowledge and appreciation through dedicated programmes of community engagement, display and interpretation. The nature of the use, display and interpretation of the archaeological and built heritage evidence is currently under discussion and will be addressed in the Environmental Statement.

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