



YOUR LONDON AIRPORT
Gatwick

*Our northern runway:
making best use of Gatwick*

Preliminary Environmental Information Report Chapter 7: Historic Environment

September 2021

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7 Historic Environment

7.1. Introduction

7.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the findings of the Environmental Impact Assessment (EIA) work undertaken to date concerning the potential effects of the proposal to make best use of Gatwick's existing runways (referred to within this report as 'the Project') on the historic environment.

7.1.2 This PEIR chapter considers the potential effects of the Project on historic environment resources (heritage assets), including historic buildings and areas, historic landscape character and buried archaeological remains. Such effects could be in the form of a direct physical impact leading to loss of, or damage to the heritage asset, or harm to the significance of the asset resulting from change within its setting.

7.1.3 In particular, this PEIR chapter:

- sets out the existing and future environmental baseline conditions, established from desk studies, surveys and consultation to date;
- presents the potential environmental effects on all aspects of the historic environment arising from the Project, based on the information gathered and the analysis and assessments undertaken to date;
- identifies any assumptions and limitations encountered in compiling the environmental information; and
- highlights any necessary monitoring and/or mitigation measures that could prevent, minimise, reduce or offset the possible environmental effects identified in the EIA process.

7.1.4 Further details regarding relevant legislation, policy and guidance, and the assessed historic environmental resources, are presented within Appendix 7.6.1: Historic Environment Baseline Report. A summary of the stakeholder responses to consultation regarding the scope of the assessment is provided in Appendix 7.3.1: Summary of Stakeholder Scoping Responses for Historic Environment.

7.1.5 The PEIR will inform pre-application consultation. Following consultation, comments on the PEIR will be reviewed and taken into account, where appropriate, in preparation of the Environmental Statement (ES) that will accompany the application to the Planning Inspectorate for development consent.

7.2. Legislation and Policy

Legislation

7.2.1 The principal legislation relevant to this assessment comprises the Ancient Monuments and Archaeological Areas Act (1979) amended by the National Heritage Acts (1980, 1983, 2002), along with the Planning (Listed Buildings and Conservation Areas) Act (1990) and the Town and Country Planning Act (1971).

7.2.2 Further details of the relevant legislation are provided in Section 2 of Appendix 7.6.1: Historic Environment Baseline Report.

Planning Policy Context

National Policy Statements

- 7.2.3 The Airports National Policy Statement (NPS) (Department for Transport, 2018), although primarily provided in relation to a new runway at Heathrow Airport, remains a relevant consideration for other applications for airport infrastructure in London and the south east of England.
- 7.2.4 The NPS for National Networks (Department for Transport, 2015) sets out the need for development of road, rail and strategic rail freight interchange projects on the national networks and the policy against which decisions on major road and rail projects will be made. This has been taken into account in relation to the highway improvements proposed as part of the Project.
- 7.2.5 Table 7.2.1 provides a summary of the relevant requirements of these NPSs and how these are addressed within the PEIR.

Table 7.2.1: Summary of NPS Information Relevant to this Chapter

Summary of NPS requirement	How and where considered in the PEIR
Airports NPS	
As part of the environmental statement, the applicant should provide a description of the significance of the heritage assets affected by the proposed development, and the contribution of their setting to that significance. The level of detail should be proportionate to the asset's importance, and no more than is sufficient to understand the potential impact of the proposal on the significance of the asset (paragraph 5.193).	The description of the significance of the assets affected by the Project, and the contribution of their setting to that significance, is presented within Appendix 7.6.1: Historic Environment Baseline Report and summarised within Section 7.6 of this chapter.
Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, the applicant should include an appropriate desk-based assessment and, where necessary, a field evaluation (paragraph 5.193).	The appropriate desk-based assessment and a summary of the results of field evaluations are presented within Appendix 7.6.1: Historic Environment Baseline Report and summarised within Section 7.6 of this chapter.
The applicant should ensure that the extent of the impact of the proposed development on the significance of any heritage asset can be adequately understood from the application and supporting documents (paragraph 5.193).	The impact of the Project on the significance of heritage assets is described in Section 7.9 of this chapter.
Detailed studies will be required on those heritage assets affected by noise, light and indirect impacts based on the guidance provided in The Setting of Heritage Assets and the Aviation Noise Metric (paragraph 5.194).	Impacts have been considered in accordance with the cited guidance documents. The guidance used is described in Section 7.4 of this chapter. The assessment is provided in Section 7.9.
Where proposed development will affect the setting of a heritage asset, accurate representative visualisations may be necessary to assess the impact (paragraph 5.194).	No situations have been identified in which a visualisation has been considered necessary for the preliminary assessment of likely

Summary of NPS requirement	How and where considered in the PEIR
	<p>impacts and effects resulting from changes within the settings of heritage assets. Views towards the Project from and across heritage assets already incorporate structures associated with an operational international airport. Although the Project would result in an increase in the number of such structures, there are no instances where this would represent a change within the setting of a heritage asset of such a scale that the magnitude of impact on that asset would be any greater than negligible.</p>
<p>The applicant is encouraged, where opportunities exist, to prepare proposals which can make a positive contribution to the historic environment, and to consider how their scheme takes account of the significance of heritage assets affected. This can include, where possible:</p> <ul style="list-style-type: none"> ▪ Enhancing, through a range of measures such as sensitive design, the significance of heritage assets or setting affected; ▪ Considering measures that address those heritage assets that are at risk, or which may become at risk, as a result of the scheme; and ▪ Considering how visual or noise impacts can affect heritage assets, and whether there may be opportunities to enhance access to or interpretation, understanding and appreciation of the heritage assets affected by the scheme. <p>Careful consideration in preparing the scheme will be required on whether the impacts on the historic environment will be direct or indirect, temporary or permanent (paragraph 195).</p>	<p>Opportunities for enhancing the significance of heritage assets have been considered. Where such opportunities are possible, these are described in Section 7.8 of this chapter. No heritage assets currently at risk would be affected by the Project, nor would any heritage assets become at risk as a result of the Project.</p>
<p>The applicant should look for opportunities for new development within Conservation Areas and World Heritage Sites, and within the setting of heritage assets, to enhance and better reveal their significance (paragraph 5.208).</p>	<p>Opportunities for enhancing the significance of heritage assets have been considered. Where such opportunities are possible, these are described in Section 7.8 of this chapter.</p>
<p>National Networks NPS</p>	
<p>Where the development is subject to EIA the applicant should undertake an assessment of any likely significant heritage impacts of the proposed project as part of the Environmental Impact Assessment and describe these in the environmental statement (paragraph 5.126).</p>	<p>The impact of the Project on the significance of heritage assets is described in Section 7.9 of this chapter. An updated assessment of impacts will be presented in the ES which will form part of the application for development consent.</p>

Summary of NPS requirement	How and where considered in the PEIR
The applicant should describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the asset's importance and no more than is sufficient to understand the potential impact of the proposal on their significance (paragraph 5.127).	The description of the significance of the assets affected by the Project, and the contribution of their setting to that significance, is presented within Appendix 7.6.1: Historic Environment Baseline Report and summarised within Section 7.6 of this chapter.
Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, the applicant should include an appropriate desk-based assessment and, where necessary, a field evaluation (paragraph 5.127).	The desk-based assessment and a summary of the results of field evaluations are presented within Appendix 7.6.1: Historic Environment Baseline Report and summarised within Section 7.6 of this chapter.
Applicants should look for opportunities for new development within Conservation Areas and World Heritage Sites, and within the setting of heritage assets, to enhance or better reveal their significance (paragraph 5.137).	Opportunities for enhancing the significance of heritage assets have been considered. Where such opportunities are possible, these are described in Section 7.8 of this chapter.

National Planning Policy Framework

- 7.2.6 The National Planning Policy Framework (NPPF) (Ministry of Housing, Community and Local Government, 2021) sets out the planning policies for England. Policies regarding the historic environment are set out in Chapter 16 of the NPPF and further details of these policies are provided in Section 2 of Appendix 7.6.1: Historic Environment Baseline Report.
- 7.2.7 The NPPF provides the following definitions which are relevant to this chapter (Annex 2: Glossary).
- **Heritage asset:** A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. It includes designated heritage assets and assets identified by the local planning authority.
 - **Designated heritage asset:** A World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area designated under the relevant legislation.
 - **Setting of a heritage asset:** 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.
 - **Significance (for heritage policy):** The value of a heritage asset to this and future generations because of its heritage interest. The interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting. For World Heritage Sites, the cultural value described within each site's Statement of Outstanding Universal Value forms part of its significance.
- 7.2.8 The National Planning Practice Guidance (NPPG) (Ministry of Housing, Communities and Local Government, 2019) supports the NPPF and provides guidance across a range of topic areas. The

NPPG provides advice on specific issues such as ‘What is ‘significance’ and ‘What is the setting of a heritage asset and how should it be taken into account?’. Further details of this guidance are provided in Section 2 of Appendix 7.6.1: Historic Environment Baseline Report.

Local Planning Policy

- 7.2.9 Gatwick Airport lies within the administrative area of Crawley Borough Council and adjacent to the boundaries of Mole Valley District Council to the north west, Reigate and Banstead Borough Council to the north east and Horsham District Council to the south west. The administrative area of Tandridge District Council is located approximately 1.9 km to the east of Gatwick Airport, while Mid Sussex District Council lies approximately 2 km to the south east. Gatwick Airport is located in the county of West Sussex and immediately adjacent to the bordering county of Surrey.
- 7.2.10 The relevant local planning policies applicable to the historic environment based on the extent of the study areas for this assessment are summarised in Table 7.2.2 with further details provided in Section 2 of Appendix 7.6.1: Historic Environment Baseline Report.

Table 7.2.2: Local Planning Policy

Administrative Area	Plan	Policy
Adopted Policy		
Crawley	Crawley 2030: Crawley Borough Local Plan 2015-2030	Policy CH12: Heritage Assets
		Policy CH13: Conservation Areas
		Policy CH15: Listed Buildings and Structures
		Policy CH16: Locally Listed Buildings
		Policy CH17: Historic Parks and Gardens
Reigate and Banstead	Reigate and Banstead Development Management Plan (2019)	Policy NHE9: Heritage Assets
	Reigate and Banstead Local Plan: Core Strategy 2014	Policy CS4: Valued Townscapes and the Historic Environment
Mole Valley	Mole Valley Core Strategy (adopted 2009)	Policy CS 14: Townscape, Urban Design and the Historic Environment
	Mole Valley Local Plan 2000 – ‘saved’ policies	Policy ENV23: Respect for Setting
		Policy ENV39: Development in Conservation Areas
		Policy ENV47: Historic Parks and Gardens
		Policy ENV49: Areas of High Archaeological Potential
		Policy ENV50: Unidentified Archaeological Sites
Policy ENV51: Archaeological Discoveries during Development		
Tandridge	Tandridge Local Plan Part 2: Detailed Policies	Policy DP20: Heritage Assets

Administrative Area	Plan	Policy
	2014-2019 (adopted 2014)	
Mid Sussex	Mid Sussex District Plan 2014-2031 (adopted 2018)	Policy DP34: Listed Buildings and Other Heritage Assets
		Policy DP35: Conservation Areas
		Policy DP36: Historic Parks and Gardens
Horsham	Horsham District Planning Framework (2015)	Policy 34: Historic Assets and Managing Change in the Historic Environment
Emerging Policy		
Crawley	Draft Crawley Borough Local Plan 2021-2037 (draft January 2021)	Policy HA1: Heritage Assets
		Policy HA2: Conservation Areas
		Policy HA3: Areas of Special Local Character
		Policy HA4: Listed Buildings and Structures
		Policy HA5: Locally Listed Buildings
		Policy HA6: Historic Parks and Gardens
		Policy HA7: Heritage Assets of Archaeological Interest
Mole Valley	Future Mole Valley 2018-2033 (Regulation 18 consultation draft)	Policy EN6: Conservation and Enhancement of Heritage Assets
Tandridge	Our Local Plan: 2033 (draft January 2019) – Tandridge District	Policy TLP43: Historic Environment
Horsham	Horsham District Local Plan 2019-2036 (Regulation 18 consultation draft)	Policy 35: Heritage Assets and Managing change in the Historic Environment

7.3. Consultation and Engagement

- 7.3.1 In September 2019, GAL submitted a Scoping Report (GAL, 2019) to the Planning Inspectorate, which described the scope and methodology for the technical studies being undertaken to provide an assessment of any likely significant effects and, where necessary, to determine suitable mitigation measures for the construction and operational phases of the Project. It also described those topics or sub-topics which are proposed to be scoped out of the EIA process and provided justification as to why the Project would not have the potential to give rise to significant environmental effects in these areas.
- 7.3.2 Following consultation with the appropriate statutory bodies, the Planning Inspectorate (on behalf of the Secretary of State) provided a Scoping Opinion on 11 October 2019 (Planning Inspectorate, 2019).

7.3.3 Key issues raised during the scoping process specific to the historic environment are listed in Table 7.3.1, together with details of how these issues have been addressed within the PEIR. The table shows the responses from the Planning Inspectorate; responses from other stakeholders are presented in Appendix 7.3.1: Summary of Stakeholder Scoping Responses for Historic Environment.

Table 7.3.1: Summary of Scoping Responses

Details	How/where addressed in PEIR
Planning Inspectorate	
<p>The Scoping Report does not clearly define which ‘urbanised areas’ are proposed to be scoped out of the ES. The Inspectorate notes that both Horley and Crawley lie within the 3 km study area proposed for heritage assets. Further, this 3 km study area seems to conflict with the 5 km study area proposed in the landscape assessment without justification as to why these are different. The Inspectorate considers that there may be impacts to the settings of heritage assets from the Proposed Development including those from increases in airborne noise. The Inspectorate does not agree to scope such matters out and expects that the ES should include an assessment of likely significant effects on such receptors particularly where airborne noise would affect the setting. (PINS ID 4.1.1)</p>	<p>Further information on assets scoped out of the assessment is provided in Appendix 7.6.1: Historic Environment Baseline Report. Section 7.9 of this chapter provides an assessment of impacts and effects on all assets for which such assessment is considered necessary.</p> <p>The 3 km study area for the assessment of effects on designated heritage assets as a result of changes within their settings differs from the 5 km study area in the landscape assessment as the topics use different methodologies to assess impacts and effects. For historic environment the focus is on understanding how changes within the setting of a heritage asset could affect the significance of the asset. Given the baseline situation of an operational international airport which already forms part of the setting of heritage assets in the area, it is considered unlikely that changes arising from the Project (other than those associated with air noise) could result in significant effects with regard to heritage assets located more than 3 km from the Project site boundary.</p> <p>The study area for the assessment of effects resulting from changes in air noise is based on the predicted noise change footprint rather than a predefined distance from the Project site boundary. This is described within Appendix 7.6.1: Historic Environment Baseline Report and is based on guidance cited in the Airports National Policy Statement (Department for Transport, 2018).</p>
<p>The ES should also assess potential effects associated with the provision of noise insulation or ventilation measures within heritage assets throughout the study area and where this would be required. The Applicant</p>	<p>Noise effects are discussed in Chapter 14: Noise and Vibration, with the details of the proposed noise insulation schemes discussed in Section 14.8 and the proposed Noise Insulation Scheme zones identified in</p>

Details	How/where addressed in PEIR
<p>should make effort to agree the relevant receptors for the assessment with relevant consultation bodies. (PINS ID 4.1.1)</p>	<p>Figure 14.8.1. The schemes are available to property owners and/or occupiers but are not compulsory. Where noise insulation or ventilation measures are proposed for a historic building, the local authority's Conservation Officer would be consulted, and applications would be submitted for any consents that may be required. The ES will include the identification of the number and locations of listed buildings within the proposed Noise Insulation Scheme zones.</p>
<p>The assessment in the ES should have regard to relevant guidance documents including: Sussex Archaeological Standards (2019), and non-statutory local archaeological standards used in providing development management advice by East Sussex County Council and West Sussex County Council. (PINS ID 4.1.3)</p>	<p>This document is now included within the list of guidance documents described and discussed within Appendix 7.6.1: Historic Environment Baseline Report.</p>
<p>The Inspectorate recommends that the data used to inform the detailed Historic Environment Desk Based Assessment (DBA) should include full summaries of the findings of the two archaeological investigations by the Applicant for the New Pollution Lagoon (Fig. 7.5.1) and Flood Alleviation Reservoir, including the Late Iron Age cremation cemetery, (to the south of Crawley Sewage Works). The Historic Environment DBA should also include an appraisal of the geoarchaeological potential of the site in relation to the Proposed Development. (PINS ID 4.1.4)</p>	<p>Detailed summaries of the results of the programmes of archaeological work at these two sites are presented within Appendix 7.6.1: Historic Environment Baseline Report. The potential for deposits of geoarchaeological and palaeoenvironmental interest to be present within these areas is also discussed in Appendix 7.6.1: Historic Environment Baseline Report.</p>
<p>The Scoping Report proposes a 1 km study area for the archaeological element of the desk-based assessment but does not explain why this is relevant having regard to the extent of the impacts from the Proposed Development. The Inspectorate is concerned this may not be sufficient to address the full extent of impacts likely to result in significant effects. The Inspectorate recommends that the study area is established relevant to the extent of the impacts and that effort is made to agree the approach with relevant consultation bodies. (PINS ID 4.1.5)</p>	<p>The defined study area for non-designated heritage assets (including archaeological sites) extends for 1 km from the Project site boundary. This provides adequate context for understanding the known and potential archaeological resource within the Project site. The discussion of archaeological potential presented in Appendix 7.6.1: Historic Environment Baseline Report covers a much wider area of south east England.</p>
<p>The Scoping Report proposes that the study area for designated heritage assets will be 3 km, but that some heritage assets outside of a 3 km study area may need to be considered including those with designed views</p>	<p>The assessment of effects on the significance of designated heritage assets resulting from changes within their settings is based on a study area which extends for 3 km from the Project site boundary. The</p>

Details	How/where addressed in PEIR
<p>towards the airport, or those which have a particular iconic status. The Applicant should also consider the inclusion of non-designated heritage assets in the assessment. (PINS ID 4.1.6)</p>	<p>Zone of Theoretical Visibility (ZTV) established for the Project is also taken into account when assessing visual changes within settings of heritage assets. The ZTV has been established for the Landscape, Townscape and Visual Assessment undertaken with regard to the Project. Through the Scoping Report, advice was sought as to whether any specific heritage assets beyond the 3 km study area should also be assessed – no such assets were identified within the Scoping Opinion. The assessment includes non-designated heritage assets including locally listed buildings.</p>
<p>The Inspectorate acknowledges the commitment made in the Scoping Report to identifying relevant heritage assets with relevant consultation bodies and recommends that this be agreed at an early stage in the assessment. The Applicant should cross refer to the finalised ZTV of the Proposed Development to assist with the identification of relevant assets. (PINS ID 4.1.6)</p>	<p>The ZTV established for the Project has been taken into account when assessing visual changes within settings of heritage assets.</p>
<p>The locations of all heritage assets considered in the assessment should be shown on appropriate figures with cross referencing by number or label to the relevant data in the text or tables. Data sources should be stated. (PINS ID 4.1.6)</p>	<p>Figures are provided within Appendix 7.6.1: Historic Environment Baseline Report and within this chapter which show the locations of all assessed heritage assets. Data sources are identified within Appendix 7.6.1: Historic Environment Baseline Report.</p>
<p>The Applicant should make effort to agree the study area with relevant consultation bodies having regard to the findings of other relevant aspects and matters, eg the noise assessment and the study area used for the assessment of tranquility effects in the Landscape, Townscape and Visual Resources assessment. (PINS ID 4.1.7)</p> <p>In this regard, the Inspectorate notes that tranquility mapping produced by the Campaign to Protect Rural England (CPRE) as referred to by the Applicant at paragraph 7.1.22 is not a predictive tool and its publication dates back to 2007. The extent to which this mapping informs the baseline assessment alongside other methodological guidance should be made clear. (PINS ID 4.1.7)</p>	<p>The study area for the assessment of effects resulting from changes in air noise derives from the methodology set out in in a report produced for English Heritage and prescribed in the Airports National Policy Statement. This is described within Appendix 7.6.1: Historic Environment Baseline Report and has been prepared in conjunction with the noise and the landscape assessments.</p> <p>The CPRE tranquility mapping has not been used in the assessment of effects on the significance of heritage assets resulting from changes in air noise.</p>
<p>The assessment of impacts to built heritage and historic areas during the construction phase should</p>	<p>Vibration from construction activities would be minimised through best practices such as plant</p>

Details	How/where addressed in PEIR
<p>also include the assessment of potential significant effects resulting from vibration. (PINS ID 4.1.8)</p>	<p>suppression. The assessment on impacts arising from vibration during construction works has not been undertaken for the PEIR but will be presented within the ES.</p>
<p>The assessment of construction, demolition and operational impacts should include settlement level /conservation area impacts at Charlwood due to its concentration of assets and its proximity to the airport, in particular to the repositioned northern runway. Impacts to the conservation area of Horley should also be considered. (PINS ID 4.1.8)</p>	<p>Assessment of the impacts and effects on the Charlwood Conservation Area and on individual designated heritage assets within Charlwood, and on the Church Road Conservation Area at Horley, are considered within Sections 7.6 and 7.9 of this chapter.</p>
<p>Effects on the settings of heritage assets should be assessed in accordance with The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3 (Historic England, 2017). (PINS ID 4.1.8)</p>	<p>Historic Environment Good Practice Advice in Planning Note 3 is one of the methodological sources drawn on in the assessment presented in Section 7.9 of this chapter, and the assessment has been undertaken in accordance with this guidance.</p>
<p>Effects from road traffic associated with the Proposed Development on heritage assets should also be included in the assessment. (PINS ID 4.1.8)</p>	<p>Effects resulting from road traffic changes have been included within the assessment presented in Section 7.9 of this chapter.</p>
<p>The Scoping Report summarises the areas which may require archaeological investigation. The Inspectorate does not regard the summary in the text at 7.1.31 as definitive and expects that the Applicant will make efforts to agree the detailed scope and extent of the proposed investigations with relevant consultation bodies. The Inspectorate notes that in Chapter 5: Project Description, a number of instances are cited where the Proposed Development may extend significantly below ground level (5.2.18, 5.2.20, 5.2.22, 5.2.28, 5.2.62) and draws attention that even where land is previously disturbed, archaeological investigation may be required if the proposed excavation is below ground levels previously disturbed. Deeper deposits of potential geoarchaeological and palaeoenvironmental significance (eg late glacial channel deposits, alluvial deposits) may also survive below areas of previous heavy ground disturbance. The Applicant should make effort to agree the approach to assessing impacts on archaeological deposits with relevant consultation bodies. (PINS ID 4.1.9)</p>	<p>A programme of geophysical survey has been undertaken in order to further inform the understanding of archaeological potential at selected locations within the Project site. This was agreed in advance with the appropriate archaeological advisors to the local planning authorities. Further investigations will be undertaken ahead of the production of the ES – again all work would be agreed in advance with the appropriate archaeological advisors to the local planning authorities, as would any subsequent investigations carried out ahead of or during construction.</p> <p>The collation of baseline information, including data obtained through geophysical survey, has enabled the predictive modelling of zones of archaeological potential within the Project site. This is presented within Appendix 7.6.1: Historic Environment Baseline Report and it acknowledges the archaeological potential of areas that have been previously disturbed. The assessment presented in Section 7.9 of this chapter recognises that deposits of potential geoarchaeological and palaeoenvironmental interest may survive in areas previously disturbed and advises</p>

Details	How/where addressed in PEIR
	that investigation of such locations may be undertaken. All work would be agreed in advance with the appropriate archaeological advisors to the local planning authorities, as would any subsequent investigations carried out ahead of or during construction.
The Applicant's intention is that a Written Scheme of Investigation will be agreed in advance with relevant consultation bodies. Where archaeological mitigation measures are proposed to be undertaken following the grant of the DCO, such measures should be appropriately secured. The Applicant should also make effort to agree the approach to the reporting of results and/or publication in relevant journal/s, with relevant consultation bodies. (PINS ID 4.1.10)	All work would be agreed in advance with the appropriate archaeological advisors to the local planning authorities through Written Schemes of Investigation. These would include details of the publication of the results of any archaeological investigations undertaken in connection with the Project.
The Inspectorate considers that the Applicant's approach to mitigation should emphasise the need to preserve heritage assets <i>in-situ</i> , where possible and appropriate. (PINS ID 4.1.10)	The <i>in-situ</i> preservation of heritage assets would be achieved through design wherever this is possible and appropriate.

7.3.4 The consultation and engagement with interested parties specific to the historic environment are listed in Table 7.3.2. No specific issues were raised which require addressing in this PEIR chapter.

Table 7.3.2: Summary of Consultation

Consultee	Date	Details	How/where addressed in PEIR
Historic England	14/06/2019	Meeting to inform Historic England of the Project. Historic England were advised of the approach to assessment of impacts and effects on the historic environment, including the proposed study areas.	Assessment methodology and the scope of the assessment is set out in Section 7.4 of this PEIR chapter.
Land Based Local Authority Topic Group	20/08/2019	The Topic Group was appraised of the approach to assessment of impacts and effects on the historic environment, including the proposed study areas.	Assessment methodology and the scope of the assessment is set out in Section 7.4 of this PEIR chapter.
Land Based Local Authority Topic Group	03/02/2020	The Topic Group was provided with updated information regarding the collation and presentation of historic environment baseline data, also progress on the application of the assessment methodologies.	The historic environment baseline data are presented in Appendix 7.6.1: Historic Environment Baseline Report. Assessment methodology is set out in Section 7.4 of this PEIR chapter.

Consultee	Date	Details	How/where addressed in PEIR
Historic England	26/02/2021	Meeting to advise Historic England of the approach to impacts on designated heritage assets arising from changes in air noise.	The assessment methodology for this issue is set out in Appendix 7.6.1: Historic Environment Baseline Report and in Section 7.4 of this PEIR chapter.
Historic England	30/07/2021	Meetings to advise Historic England of the outcomes of the collation and presentation of historic environment baseline data, with specific reference to the study areas including those established for the assessment of impacts on designated heritage assets arising from changes in air noise.	The historic environment baseline data are presented in Appendix 7.6.1: Historic Environment Baseline Report, along with an explanation of the study areas that have been used for the assessment of impacts on heritage assets.
Land Based Local Authority Topic Group	05/08/2021	The Topic Group was advised of the outcomes of the collation and presentation of historic environment baseline data, with specific reference to the study areas including those established for the assessment of impacts on designated heritage assets arising from changes in air noise.	The historic environment baseline data are presented in Appendix 7.6.1: Historic Environment Baseline Report, along with an explanation of the study areas that have been used for the assessment of impacts on heritage assets.

7.4. Assessment Methodology

Relevant Guidance

- 7.4.1 In addition to the NPPG, which is summarised in Section 7.2 above and in Section 2 of Appendix 7.6.1: Historic Environment Baseline Report, a number of other guidance documents are relevant to this chapter.
- 7.4.2 The Design Manual for Roads and Bridges (DMRB) (Highways England *et al.*, 2020a) provides detailed guidance on Environmental Impact Assessment with regard to the historic environment. The methodology described below for the assessment of impacts and effects on heritage assets is derived from the preceding and current iterations of the DMRB methodology.
- 7.4.3 *Historic Environment Good Practice Advice in Planning 2: Managing Significance in Decision-Taking in the Historic Environment* was published by Historic England in March 2015. It provides detailed guidance on how the significance of heritage assets can be determined, and how decision-takers should assess proposals for developments which would affect this significance. Further details of this guidance document are provided in Section 2 of Appendix 7.6.1: Historic Environment Baseline Report.
- 7.4.4 The second edition of *Historic Environment Good Practice Advice in Planning 3: The Setting of Heritage Assets* was published by Historic England in December 2017. It provides detailed

guidance on understanding the concept of setting and how it may contribute the significance of heritage assets. Further details of this guidance document are provided in Section 2 of Appendix 7.6.1: Historic Environment Baseline Report.

- 7.4.5 Further advice on assessing the significance of heritage assets has been recently published by Historic England in their *Advice Note 12 Statements of Heritage Significance: Analysing Significance in Heritage Assets* (Historic England, 2019). This explains how significance should be assessed as part of a staged approach to decision-making.
- 7.4.6 Specifically, with regard to the issue of air noise when considering changes within the setting of heritage assets, guidance is provided within an English Heritage research report (*Aviation Noise Metric – Research on the Potential Noise impacts on the Historic Environment by Proposals for Airport Expansion in England*, Temple Group and Cotswold Archaeology, 2014) and also the Civil Aviation Authority document *Airspace Design: Guidance on the regulatory process for changing airspace design including community engagement requirements* (CAP 1616) (CAA, 2021). Further details of these guidance documents are provided in Section 2 of Appendix 7.6.1: Historic Environment Baseline Report.
- 7.4.7 Other guidance documents that have been considered in the assessment process include:
- Principles of Cultural Heritage Impact Assessment in the UK (Institute of Environmental Management and Assessment (IEMA), Institute of Historic Building Conservation (IHBC) and Chartered Institute for Archaeologists (CIfA), 2021).
 - Standard and guidance for historic environment desk-based assessment (CIfA, 2014a).
 - Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment (CIfA, 2014b).
 - Standard and guidance for archaeological geophysical survey (CIfA, 2014c).
 - Standard and guidance for archaeological field evaluation (CIfA, 2014d).
 - Standard and guidance for the collection, documentation, conservation and research of archaeological materials (CIfA, 2014e).
 - Standard and guidance for the collection, compilation, transfer and deposition of archaeological archives (CIfA, 2014f).
 - Sussex Archaeological Standards (Chichester District Council *et al.*, 2019).

Scope of the Assessment

- 7.4.8 The scope of this PEIR has been developed in consultation with relevant statutory and non-statutory consultees as detailed in Table 7.3.1 and Table 7.3.2. It comprises the assessment of the likely effects on all elements of the historic environment, including buried archaeological remains, historic buildings and historic areas.
- 7.4.9 Taking into account the scoping and consultation process, Table 7.4.1 summarises the issues considered as part of this assessment.

Table 7.4.1: Issues Considered within the Assessment

Activity	Potential Effects
Construction Phase (including Demolition): Buried Archaeology	
Construction and demolition activities (generally)	Loss of, or damage to, heritage assets as a result of construction activity (eg physical removal or disturbance of archaeological remains, where these are still present).
Construction of updated highways junctions	Loss of, or damage to, heritage assets as a result of construction of upgraded highway junctions (eg physical removal, disturbance, damage of potential archaeological remains).
Use of construction compounds and creation of mitigation areas beyond existing airport boundary	<p>Loss of, or damage to, heritage assets as a result of instigation and use of construction compounds and creation of environmental mitigation/enhancement areas beyond the existing airport boundary.</p> <p>This includes works associated with drainage, such as excavation for new ponds or ground reduction for flood alleviation.</p> <p>Works to prepare the proposed construction compounds may result in loss of or damage to heritage assets. However, the site of the proposed main contractor compound is already developed (predominantly for surface parking), whilst the site of the proposed airfield satellite compound has been subject to previous archaeological examination as part of the Gatwick North West Zone development.</p>
Construction Phase (including Demolition): Built Heritage and Historic Areas	
Construction and demolition activities	Effects resulting from changes within the settings of designated and non-designated heritage assets as a result of demolition and construction activity (including light and noise), construction of upgraded highway junctions and use of construction compounds. Effects resulting from demolition of non-designated buildings with identified heritage values.
Construction Phase (including Demolition): Historic Landscape	
Construction and demolition activities	Effects on the wider historic landscape as a result of construction activity, including construction of upgraded highway junctions, use of construction compounds and creation of mitigation/enhancement areas.
Operational Phase: Built Heritage and Historic Areas	
Use of airport, including upgraded highway junctions	<p>Effects resulting from changes within the settings of designated and non-designated heritage assets as a result of operational activity (including light and noise).</p> <p>This includes consideration of potential air noise impacts that may occur as a result of increased flight numbers and/or changes in distribution of volumes of aircraft along established flight paths, as well as ground noise and road traffic noise.</p>

Activity	Potential Effects
Operational Phase: Historic Landscape	
Use of airport, including upgraded highway junctions	Effects on the wider historic landscape.

7.4.10 Effects which are not considered likely to be significant have been scoped out of the assessment. A summary of the effects scoped out is presented in Table 7.4.2.

Table 7.4.2: Issues Scoped Out of the Assessment

Issue	Justification
Operational impacts on buried archaeological remains	Impacts on buried archaeological remains would potentially occur during construction. It is assumed that all such remains will be examined to the appropriate level ahead of construction and that little or nothing of archaeological interest would remain <i>in situ</i> to be affected by operational activities.
Impacts on designated heritage assets within the more urbanised areas of Horley and Crawley resulting from changes within their settings	The settings of such assets predominantly comprise the urban environment within which they are located. This aspect of their setting will not be affected by the Project and therefore there is no potential for a significant effect.

Study Areas

- 7.4.11 With regard to buried archaeological remains, the defined study area is a zone extending for 1 km in all directions from the Project site boundary. This is considered to be sufficient to allow the known archaeological remains within the Project site boundary to be placed into context, and for the potential for further (as yet unknown) archaeological remains to be present within the Project site boundary to be assessed. It is anticipated that the extent of this study area will be agreed with the relevant authorities through the process of consultation on the PEIR. Consideration of the archaeological potential also draws on the current knowledge of this topic over a wider area of the Weald.
- 7.4.12 There are two defined study areas for the examination of changes within the settings of heritage assets (including historic buildings and areas) that may result in harm to the significance of such assets. One is a zone extending for 3 km in all directions from the Project site boundary. Within this zone, heritage assets were examined against the ZTV established for the Project, and also information provided through site visits to examine the current settings of heritage assets. Consultation with relevant statutory bodies through the Scoping Report and the Scoping Opinion specifically examined whether or not there were any 'iconic' heritage assets outside the defined 3 km zone that should also be included within this part of the assessment – none were identified.
- 7.4.13 A second study area has been established in order to examine the impact of air noise and changes in flight routes which could result in harm to the significance of heritage assets as a result of changes within their settings. This study area has been established with regard to

predicted noise change footprints, using a methodology proposed in a report prepared for English Heritage (Temple Group and Cotswold Archaeology, 2014) and referenced in the Airports National Policy Statement (Department for Transport, 2018).

Methodology for Baseline Studies

Desk Study

- 7.4.14 Baseline data have been acquired from a number of sources, including the Historic Environment Records (HERs) for West Sussex and Surrey. Where the reports on previous archaeological investigations have not yet reached the HERs, contact has been made with organisations involved in those investigations and relevant information has been made available wherever possible.
- 7.4.15 The National Heritage List for England (NHLE) has been examined with regard to designated heritage assets, with additional material coming from the Historic England Archive. Information regarding Conservation Areas and locally listed buildings has been sourced from the appropriate local authorities.
- 7.4.16 Examination has been made of a range of historic maps in order to inform an understanding of the development of the landscape within and adjacent to the Project site boundary. The results of previous studies commissioned by Gatwick Airport Limited in relation to the previous second runway scheme have been examined, including a LiDAR assessment, an aerial photograph assessment and a detailed walkover survey.
- 7.4.17 Further details regarding all aspects of the baseline studies are presented in Appendix 7.6.1: Historic Environment Baseline Report.

Site-Specific Surveys

- 7.4.18 Archaeological geophysical surveys have been carried out at locations within the Project site boundary. These locations were predominantly areas of land outside the operational airport, mostly land in current agricultural use. The survey areas included land required as temporary construction land, as well as permanent land take for new development (see Figure 6.3.8 in Appendix 7.6.1: Historic Environment Baseline Report). The surveys were undertaken in August, September and October 2019.
- 7.4.19 The geophysical surveys comprised magnetometer survey (using fluxgate gradiometers) with the resulting data being presented in greyscale format as well as in interpretation plots that identify anomalies of potential archaeological interest. The results of the geophysical surveys are described in Appendix 7.6.1: Historic Environment Baseline Report, which also includes copies of the interpretation plots.
- 7.4.20 Additional walkover surveys and site visits have been undertaken to examine specific locations, including the examination of the current settings of numerous heritage assets. The location of the walkover surveys and the observations noted are set out in Appendix 7.6.1: Historic Environment Baseline Report.
- 7.4.21 Several visits have been undertaken to areas around Gatwick to understand how the existing settings of heritage assets may be affected by aircraft noise and also in relation to other noise sources, eg from road traffic. This has allowed a general understanding to be gained regarding

the noise environment of heritage assets so as to inform the assessment. These visits were undertaken in 2019, ie before the Covid-19 pandemic, so the results are representative of the pre-pandemic levels of aircraft activity.

Assessment Criteria and Assignment of Significance

7.4.22 The significance of an effect is determined based on the sensitivity or value of a receptor and the magnitude of an impact. This section describes the criteria applied in this chapter to characterise the sensitivity of receptors and magnitude of potential impacts. The terms used to define sensitivity/value (of receptors) and magnitude (of impact) are based on, and have been adapted from, those used in the preceding and current iterations of the Design Manual for Roads and Bridges (DMRB) methodology (Highways England *et al.*, 2020b), which is described in further detail in Chapter 6: Approach to Environmental Assessment. They also take account of guidance published by the International Council on Monuments and Sites (ICOMOS, 2011).

Receptor Sensitivity/Value

7.4.23 Table 7.4.3 presents the definitions of sensitivity or value which are applied to heritage assets. The table combines buried archaeological remains; historic buildings; and historic landscapes.

Table 7.4.3: Sensitivity/Value Criteria

Sensitivity / Value	Definition
Very High	Heritage assets of international importance. World Heritage Sites and the individual attributes that convey their Outstanding Universal Value. Areas associated with intangible historic activities and areas with associations with particular innovations, scientific developments, movements or individuals of global importance. Assets that can contribute significantly to acknowledged international research objectives.
High	Heritage assets of national importance. Scheduled Monuments, Listed Buildings (Grade I, II*), Registered Historic Parks and Gardens (Grade I, II*), Registered Battlefields, Protected Wrecks, Protected Military Remains. Other listed buildings that can be shown to have exceptional qualities in their fabric or historical association not adequately reflected in the listing grade. Unscheduled sites and monuments of schedulable quality and/or importance including those discovered through the course of evaluation or mitigation. Archaeological assets that can contribute significantly to acknowledged national research objectives. Conservation Areas containing very important buildings. Undesignated structures of clear national importance. Designated and undesignated historic landscapes of outstanding interest, or high quality and importance and of demonstrable national value. Well-preserved historic landscapes, exhibiting considerable coherence, time-depth or other critical factors. Palaeogeographic features with a demonstrable high potential to include artefactual and/or palaeoenvironmental material, possibly as part of a prehistoric site or landscape.

Sensitivity / Value	Definition
	Undesignated sites of wrecked ships and aircraft that are demonstrably of equivalent archaeological importance to those already designated.
Medium	<p>Heritage assets of regional importance. Conservation Areas, Grade II Listed Buildings and Registered Historic Parks and Gardens.</p> <p>Undesignated archaeological assets that can contribute to regional research objectives.</p> <p>Historic townscapes and landscapes with reasonable coherence, time-depth and other critical factor(s).</p> <p>Unlisted assets that can be shown to have exceptional qualities or historic association.</p> <p>Designated special historic landscapes.</p> <p>Undesignated historic landscapes that would justify special historic landscape designation, landscapes of regional value.</p> <p>Averagely well-preserved historic landscapes with reasonable coherence, time-depth or other critical factors.</p> <p>Prehistoric deposits with moderate potential to contribute to an understanding of the palaeoenvironment.</p> <p>Undesignated wrecks of ships or aircraft that have moderate potential based on a formal assessment of their importance in terms of build, use, loss, survival and investigation.</p>
Low	<p>Heritage assets with importance to local interest groups or that contribute to local research objectives.</p> <p>Locally Listed Buildings and Sites of Importance within a district level.</p> <p>Robust undesignated assets compromised by poor preservation and/or poor contextual associations.</p> <p>Robust undesignated historic landscapes.</p> <p>Historic landscapes with importance to local interest groups.</p> <p>Historic landscapes whose value is limited by poor preservation and/or poor survival of contextual associations.</p> <p>Prehistoric deposits with low potential to contribute to an understanding of the palaeoenvironment.</p> <p>Undesignated wrecks of ships or aircraft that have low potential based on a formal assessment of their importance in terms of build, use, loss, survival and investigation.</p>
Negligible	<p>Assets with little or no archaeological or historical interest due to poor preservation or survival.</p> <p>Buildings of little or no architectural or historic note; buildings of an intrusive character.</p> <p>Landscapes with little or no significant historical interest.</p>
Unknown	The importance of the heritage asset cannot be ascertained from available evidence.

Magnitude of Impact

- 7.4.24 The magnitude of an impact is assessed without reference to the sensitivity or value of the heritage asset. In terms of the judgement of the magnitude of impact, this is based on the principle that preservation of the significance of the asset is preferred, and that total loss of significance (including loss resulting from substantial change within the setting) of the asset is least preferred.

7.4.25 With regard to buried archaeological remains, it is not always possible to assess the physical impact in terms of percentage loss, and therefore it can be important in such cases to try to assess the capacity of the heritage asset to retain its character and significance following any impact. Impacts resulting from changes within the setting of buried archaeological remains may also be difficult to assess as they do not involve physical loss of the resource.

7.4.26 Table 7.4.4 presents the criteria used to assess the magnitude of impact on heritage assets.

Table 7.4.4: Impact Magnitude Criteria

Magnitude of Impact	Definition
High	Change to most or all key elements of the heritage asset, or changes within the setting of the asset, such that the significance of the asset is lost or substantially harmed (Adverse).
	Change to most or all key elements of the heritage asset, or changes within the setting of the asset, such that the significance of the asset is substantially enhanced (Beneficial).
Medium	Change to elements of the heritage asset, or changes within the setting of the asset, such that the significance of the asset is clearly harmed (Adverse).
	Change to elements of the heritage asset, or changes within the setting of the asset, such that the significance of the asset is clearly enhanced (Beneficial).
Low	Change to elements of the heritage asset, or changes within the setting of the asset, such that the significance of the asset is slightly harmed (Adverse).
	Change to elements of the heritage asset, or changes within the setting of the asset, such that the significance of the asset is slightly enhanced (Beneficial).
Negligible	Change to elements of the heritage asset, or changes within the setting of the asset, such that the significance of the asset is barely affected (Adverse).
	Change to elements of the heritage asset, or changes within the setting of the asset, such that the significance of the asset is barely affected (Beneficial).
No Change	No changes to elements of the heritage asset, or within the setting of the asset.

Significance of Effect

7.4.27 The significance of the effect upon the historic environment has been determined by taking into account the sensitivity or value of the receptor and the magnitude of the impact. The method employed for this assessment is presented in Table 7.4.5. Where a range of significance levels are presented, the final assessment for each effect is based upon expert judgement.

7.4.28 In all cases, the evaluation of receptor sensitivity or value, impact magnitude and significance of effect has been informed by professional judgement and is underpinned by narrative to explain the conclusions reached.

7.4.29 For the purpose of this assessment, any effects with a significance level of minor or less are not considered to be significant in terms of the EIA Regulations. Effects should be considered to be adverse unless explicitly stated otherwise.

Table 7.4.5: Assessment Matrix

Sensitivity	Magnitude of Impact				
	No Change	Negligible	Low	Medium	High
Negligible	No change	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	No change	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	No change	Negligible or Minor	Minor	Moderate	Moderate or Major
High	No change	Minor	Minor or Moderate	Moderate or Major	Major or Substantial
Very High	No change	Minor	Moderate or Major	Major or Substantial	Substantial

7.4.30 A description of the significance levels is provided in the bullets below.

- Substantial: Only adverse effects are normally assigned this level of significance. They represent key factors in the decision-making process. These effects are associated with heritage assets of international, national or regional importance that are likely to suffer a most damaging impact and loss of significance.
- Major: These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process.
- Moderate: These beneficial or adverse effects may be important but are not likely to be key decision-making factors. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall effect on a particular heritage asset or group of assets.
- Minor: These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process but are important in enhancing the subsequent design of the project.
- Negligible: No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

7.5. Assumptions and Limitations of the Assessment

7.5.1 All readily available data required for the assessment have been acquired, collated and critically examined.

7.5.2 One key limitation is with regard to the presence/absence, extent, nature and significance of buried archaeological remains within the Project site boundary. A number of non-intrusive methodologies have been utilised in order to gain as much information as possible, including geophysical and walkover surveys, also assessment of LiDAR data and aerial photographs.

7.5.3 Further investigation of land within the Project site boundary to establish or confirm its archaeological potential is planned to take place ahead of the production of the ES. The results of these investigations will be submitted in support of the application for development consent for the Project. The nature and extent of any investigation will depend on the current understanding of the archaeological potential of the specific area along with the proposed activities required for

the construction of the Project. All investigations would be in line with the guidance document *Sussex Archaeological Standards* (Chichester District Council *et al.*, 2019), and would be carried out in accordance with written methodologies agreed in advance with the appropriate archaeological advisors to the local planning authorities.

7.5.4 On this basis, no assumptions or limitations have therefore been identified in the preparation of this chapter with regard to the historic environment that would prevent an assessment of the potential effects being made, other than with regard to buried archaeological remains. For the latter, a worst case assessment has been made, assuming that buried archaeological remains (including, in some locations, remains of high sensitivity or value) are present.

7.5.5 The assessment of aircraft noise has been based on estimates of how the aircraft fleet will transition over time, based on assumptions around airlines' fleet procurement programmes and business models. The 'central case' used in this assessment is based on what is considered today to be the most likely rate of fleet transition. Any implications of a slower transition fleet will be reviewed for the ES.

7.6. Baseline Environment

Current Baseline Conditions

7.6.1 A detailed description of the historic environment baseline is presented within Appendix 7.6.1: Historic Environment Baseline Report, which should be read in conjunction with this chapter.

7.6.2 The current airport was developed within a historic landscape comprising dispersed farmsteads with small, irregular fields bounded by hedges that were often heavily wooded. Land use has historically fluctuated between arable and pastoral according to the available farming methods and the needs of society. Newly cleared land was usually set to arable, but depopulation often resulted in a reversion to pasture or rough grazing. Livestock were mainly cattle, although certain areas specialized in sheep farming. Locally, woodland provided timber and firewood for use in the ironworking industry, which was widespread in the medieval period and reached a peak during the 17th and 18th centuries.

7.6.3 The London and Brighton Railway opened in 1841 and was subsequently incorporated into the London, Brighton and South Coast Railway. This cut through the historic landscape on a north/south alignment and a station was provided at Horley. To the west of the railway, the former Gatwick Farm was replaced by a large house known as Gatwick. Land to the south east of Gatwick was purchased in 1890 by the Gatwick Race Course Company, who opened a race course in 1891 along with a new station on the adjacent railway. A grandstand was located at the south eastern end of the racecourse and was linked to the railway station by three covered walkways.

7.6.4 An airfield was licensed at Gatwick in 1930, although a plane had been based there from November 1928. The runway was adjacent to the racecourse and a licence for commercial flights was acquired in 1933. In 1935 a new railway station was opened further to the south and the following year the world's first circular passenger terminal was opened, linked to the new station by a subway approximately 130 yards in length. The terminal and part of the subway are still present but are outside the current operational airport – the former is a Grade II* listed building known as The Beehive.

- 7.6.5 During World War Two the airfield was requisitioned by the Air Ministry and used by the RAF, with further requisitioning that included part of the racecourse. After the war the airfield was retained under requisition and operated for civilian use. The country house known as Gatwick was demolished in 1950, and in the same decade Gatwick was substantially expanded to become the newest airport for London; it was further enlarged in 1962.
- 7.6.6 The land within the Project site boundary is predominantly occupied by the operational airport within which very little remains of the preceding historic landscape. However, there are three designated heritage assets wholly within the Project site boundary (Figure 7.6.2). These comprise the Grade II* listed Charlwood Park Farmhouse (Site 27) in the north western part of the Project site, along with Edgeworth House (Site 133) and Wing House (Site 134), both listed at Grade II, in the eastern part of the Project site.
- 7.6.7 Charlwood Park Farmhouse (Site 27) is a timber-framed hall house of 15th century date, with later additions and amendments. In the 19th century it was the home farm for the Charlwood Park estate; the main house and the park were located further to the east and have been completely lost to the expanding airport. The former farmhouse is located just outside the current airport perimeter fence and is in use as a nursery school. A garden extends around the western, northern and eastern sides of the former farmhouse, beyond which is modern surface car parking for the airport. To the south is an area of landscape planting adjacent to the realigned River Mole, with the Sussex Border Path running alongside the river and passing to the south and east of the farmhouse. There is some noise from planes taking off and landing, but this is not particularly obtrusive.
- 7.6.8 Wing House (Site 134) and Edgeworth House (Site 133) are separately listed at Grade II but are conjoined. Edgeworth House may be slightly earlier in date (15th or early 16th century), with Wing House being mid-16th century. The two buildings formerly represented separate elements of a property known as Edgeworth that was accessed via a driveway leading east to the B2036 Balcombe Road. This relationship no longer exists, and the two listed buildings are located within an area of surface car parks and modern buildings associated with the operational use of the airport, including the adjacent Marriot Hotel of which the historic buildings now form a part.
- 7.6.9 One Conservation Area is partially within the Project site boundary. This is the Church Road Conservation Area on the south western edge of Horley (Figure 7.6.2, Site 406). The eastern part of the Conservation Area comprises a number of historic buildings including the Grade I listed Church of St Bartholomew (Site 16) and the adjacent Grade II listed Ye Olde Six Bells public house (Site 370). To the west of the churchyard the Conservation Area takes in open land on either side of the River Mole, and it is this open land which falls partially within the Project site boundary.
- 7.6.10 Within 1 km of the Project site boundary there are a considerable number of designated heritage assets. These include two Scheduled Monuments: an area of former medieval settlement at Tinsley Green to the south east of the airport (Figure 7.6.2, Site 9); and a medieval moated manor house site known as Thunderfield Castle to the north east (Site 7).
- 7.6.11 Three Grade I listed churches are located within 1 km of the Project site boundary. The Church of St Bartholomew at Church Lane, Horley (Figure 7.6.2, Site 16) has already been mentioned (see paragraph 7.6.9 above) and is of 14th century date, restored in 1881 and with a south aisle added in 1901. The Church of St Nicholas is in the western part of the village of Charlwood, west of the airport (Site 14). This church is of Norman date and has surviving elements from the 13th,

14th and 15th centuries. The third one is the Church of St Bartholomew at Burstow (Site 13), east of the airport (and east of the M23 motorway). This example is of 12th century date, enlarged and remodelled in the 15th century and restored in 1884-95.

- 7.6.12 There are seven Grade II* listed buildings within 1 km of the Project site boundary. These include five to the south of the airport: Charlwood House (Figure 7.6.2, Site 23) which is a timber-framed house of early 17th century date now used as a nursery school; Gatwick Manor Inn on the east side of the A23 road which is another 15th century timber-framed house, now used as a hotel; the Church of St Michael and All Angels (Site 24) was built in 1867 as the parish church for Lowfield Heath, it is by the architect William Burgess in an early 13th century French Gothic style and is currently used by a Seventh Day Adventist congregation; Rowley Farmhouse (Site 22) has elements that date to the late 16th century and is located on a prominent position at the top of a small gravel hill; and The Beehive (Site 35) is the former airport passenger terminal built in 1934-36 and mentioned above, it is now outside the operational airport but is well-maintained and used as a business centre and restaurant.
- 7.6.13 The other two Grade II* listed buildings are within the village of Charlwood, to the west of the airport. The Providence Chapel on Chapel Road (Figure 7.6.2, Site 36) was erected in 1816 as a Non-conformist chapel. However, it was initially built in 1797 as the Guard Room of a military camp in Horsham used for training of troops to fight in the French Revolutionary War. The Manor House on Norwood Hill Road at Charlwood (Site 33) is a large hall house of 15th or 16th century date.
- 7.6.14 In addition to the remaining part of the Church Road (Horley) Conservation Area, there are three further Conservation Areas wholly or partially within 1 km of the Project site boundary. These are at Burstow to the east of the airport (Figure 7.6.2, Site 400), at Charlwood to the west of the airport (Site 397) and at Massets Road, Horley to the north of the airport (Site 398).
- 7.6.15 There are approximately 133 Grade II listed buildings or structures within 3 km of the Project site boundary (Figure 7.6.2). Many of these are located within the historic village of Charlwood to the west of the airport and within Horley to the north, whereas others are dispersed farmsteads and cottages in a more rural setting. Examination of the ZTV established for the Project has established that many of the Grade II listed buildings would have no intervisibility with any built element of the Project (see Figures 7.6.3 and 7.6.4, see also Chapter 8: Landscape, Townscape and Visual Resources). For those listed buildings where the ZTV indicates some potential for intervisibility, a programme of site visits has been undertaken to further review this potential and to establish the current setting of the buildings.
- 7.6.16 Figure 7.6.1 shows the locations of locally listed buildings within 1 km of the Project site boundary. The locally listed buildings are within Reigate and Banstead Borough, Crawley Borough and Tandridge District as these local authorities maintain a local list of historic buildings.
- 7.6.17 A number of the locally listed buildings are located within the urban areas of Horley and due to their location, the built elements of the Project would not represent a change within the settings of these assets.
- 7.6.18 One locally listed building is situated on the north western edge of the Project site boundary (Figure 7.6.1, Site 429). This is Gatwick Manor Lodge on the south side of Povey Cross Road, and it represents the only surviving structure associated with the former country house of Gatwick which replaced the earlier Gatwick Farm.

- 7.6.19 Elsewhere there are small numbers of locally listed buildings to the north east, east, and south east of the Project site boundary. These are identified within Appendix 7.6.1: Historic Environment Baseline Report.
- 7.6.20 As explained above, the defined study area for the examination of potential effects on designated heritage assets extends to a distance of 3 km from the Project site boundary. Designated heritage assets within 1-3 km of the Project site boundary, and within the ZTV established for the Project, include two Scheduled Monuments, three Grade II* listed buildings, one Conservation Area and a number of Grade II listed buildings (Figure 7.6.3).
- 7.6.21 Archaeological fieldwork has been undertaken at several locations within the Project site boundary. A comprehensive programme of archaeological investigation in the north western part of the airport (known as the Gatwick North West Zone) resulted in the identification of the remains of settlement activity dating from the Late Bronze Age. The area examined is shown on Figure 6.3.1 in Appendix 7.6.1: Historic Environment Baseline Report.
- 7.6.22 Another notable programme of archaeological work was undertaken ahead of and during construction of the Flood Storage (Control) Reservoir and the Pollution Control Lagoon to the south east of the airport (and east of the railway) (see Figure 6.3.3 in Appendix 7.6.1: Historic Environment Baseline Report). Numerous palaeochannels of the Gatwick Stream were identified here, along with evidence for activity in the Upper Palaeolithic, Mesolithic, Iron Age, Roman and medieval periods.
- 7.6.23 Archaeological discoveries within and around the Project site boundary have enabled the local planning authorities to identify areas of enhanced archaeological interest. This does not afford any specific protection to the identified area, but it draws the attention of planners and developers to the need for archaeological issues to be properly considered within the planning system. In West Sussex the areas of enhanced archaeological interest are known as Archaeological Notification Areas (ANAs) and are classed as Red or Amber according to their perceived importance. In Surrey the areas of enhanced archaeological interest are known as Areas of High Archaeological Potential (AHAPs) and also County Sites of Archaeological Interest (CSAIs). The locations of all ANAs, AHAPs and CSAIs within 1 km of the Project site boundary are indicated on Figure 7.6.1.
- 7.6.24 Within the Project site boundary are four Red ANAs and one AHAP. Along the north western part of the Project site boundary is a Red ANA in the vicinity of the Grade II* listed Charlwood Park Farmhouse. This ANA (Site 487) has been principally identified on the basis that the Late Bronze Age settlement examined to the east of here (within the Gatwick North West Zone) could extend further west.
- 7.6.25 A second Red ANA has been identified to the east of the railway, in an area predominantly used now as surface car parking but also taking in the Pollution Control Lagoon (Site 485). This relates to antiquarian evidence for a Roman settlement in the area of the former Horley Land Farm. The third Red ANA within the Project site boundary is to the south of Site 485 (Site 484) and has been principally identified with regard to a group of Iron Age cremation burials identified during the archaeological work associated with construction works adjacent to the Flood Storage (Control) Reservoir. A fourth Red ANA is located in the south western corner of the Project site boundary (Site 480). This is the site of the former Park Farm (or Park House Farm) which was indicated on a map of 1768 and survived into the early part of the 20th century.

- 7.6.26 The Surrey AHAP is only partially within the Project site boundary. This is on the north side of the airport, just to the west of the railway (Site 498). It relates to the antiquarian discovery of prehistoric flintwork, Late Iron Age cremation burials, and Roman pottery and coins. This land is now used as a staff car park.
- 7.6.27 There are several additional Red and Amber ANAs within 1 km of the Project site boundary. These include a Red ANA immediately south of the airport which is associated with a former windmill and miller's cottage at Lowfield Heath (Site 481) and a second one just to the west which is associated with the possible moated site of the Grade II* listed Charlwood House (Site 479). A smaller Red ANA to the east of the Lowfield Heath Windmill ANA is based around the Grade II* listed Church of St Michael and All Angels (Site 489) whilst to the south is another Red ANA; this one has been identified with regard to the medieval moated site of Gatwick Manor Inn (Site 482).
- 7.6.28 To the west of the airport is a large Red ANA which is an area of possible mine pits (for iron ore) and other landscape features (Site 486). An even larger Red ANA to the south, and mostly more than 1 km from the Project site boundary, covers the area of a medieval moated site at Ifield Court as well as remains associated with ironworking (Site 478).
- 7.6.29 A large Red ANA at Tinsley Green to the south east of the airport (Site 483) is associated with the remains of medieval settlement and ironworking, whilst a nearby smaller Red ANA relates to an area of medieval earthworks at Toovies Farm (Site 490). An amber ANA has been identified around the Grade II* listed building (and former airport passenger terminal) known as The Beehive (Site 488).
- 7.6.30 There are two (Surrey) AHAPs at Charlwood, to the west of the airport. One of these relates to the historic core of the village (Site 493) whilst the second is associated with the adjacent and formerly separate settlement core of Charlwood Green (Site 494).
- 7.6.31 To the north of the airport is a group of AHAPs on the south west side of Horley. These include a possible moated enclosure (Site 492), the church and churchyard (Site 497), another (possibly) moated medieval manor at Court Lodge Farm (Site 496) and a moated site at Ringley Oak Cottage (Site 499).
- 7.6.32 East of the airport there are two AHAPs at Burstow. The larger eastern one (Site 501) includes the church and several other historic buildings, whilst a smaller western AHAP (Site 502) is associated with a medieval mound and homestead. To the north and on the western side of the M23 motorway, the area around the Scheduled Monument of Thunderfield Castle has been identified as a CSAI (Site 495).
- 7.6.33 The detailed examination of known archaeological sites within and adjacent to the Project site boundary that is presented within Appendix 7.6.1: Historic Environment Baseline Report has enabled the production of a figure which indicates Zones of Archaeological Potential (within the Project site boundary). This is included here as Figure 7.6.5 and it shows zones of high and medium potential in several locations, all of which are outside of, or peripheral to, the operational airport.
- 7.6.34 A programme of Historic Landscape Characterisation (HLC) has been undertaken for Sussex and also for Surrey (see Figures 4.1.4 and 4.1.5 in Appendix 7.6.1: Historic Environment Baseline Report). Overall, the HLC shows that the historic character of the remaining undeveloped land within the Project site boundary is typical of the Sussex Weald, with assarts (areas of forest

cleared for agriculture) coalescing to form informal fieldscapes and then some areas being formally inclosed. These former assarts can be identified by sinuous field boundaries and wide hedges, and their probable association with medieval farms. The dispersed settlements are gradually encroached upon by ribbon development along the transport routes whilst some ancient woodland has survived along with more recent plantations.

- 7.6.35 Section 5.4 of Appendix 7.6.1: Historic Environment Baseline Report explains the methodology used to produce the baseline for the assessment of impacts and effects on heritage assets arising from changes in air noise. The methodology is derived from a research report produced on behalf of English Heritage (Temple Group and Cotswold Archaeology, 2014).
- 7.6.36 The methodology utilised for this element of the assessment requires the establishment of predicted positive and negative noise change footprints, ie areas within which air noise is likely to change according to certain specified parameters), followed by the identification of noise-sensitive heritage assets within these predicted noise change footprints.
- 7.6.37 Application of the methodology resulted in the identification of three noise-sensitive designated heritage assets within the predicted negative noise change footprint (ie the area within which air noise would increase in line with the agreed parameters) and two noise-sensitive designated heritage assets within the predicted positive noise change footprint (ie the area within which air noise would decrease in line with the agreed parameters). The locations of these noise-sensitive designated heritage assets and the predicted noise change footprints are indicated on Figure 7.6.6.
- 7.6.38 The three noise-sensitive designated heritage assets within the predicted negative noise change footprint comprise: the Grade II listed Church of St John the Baptist (Site 872, NHLE 1378150); the Grade II listed Quaker Meeting House with attached cottage at Capel (Site 873, NHLE 1028737); and the relocated Grade II listed Lowfield Heath Windmill south west of Charlwood (Site 332, NHLE 1298883). The two noise-sensitive designated heritage assets within the predicted positive noise change footprint comprise the Grade II* listed Church of St Michael and All Angels at Lowfield Heath (Site 24, NHLE 1187081) and the adjacent Grade II listed Lowfield Heath War Memorial (Site 389, NHLE 1452793) which is located just within the north west corner of the churchyard.

Future Baseline Conditions

- 7.6.39 Future changes to the historic environment baseline could include additions to the list of designated heritage assets, eg additional designations of Scheduled Monuments, listed buildings etc. or amendments to the descriptions of the assets and/or the area covered by the designation.
- 7.6.40 Other changes could occur as a result of further information regarding archaeological sites, possibly through programmes of intrusive or non-intrusive fieldwork.
- 7.6.41 No changes in statutory legislation on historic environment issues are currently anticipated, although this may change at any time. Additional guidance may be issued by national statutory advisors or others, including guidance on the assessment process.
- 7.6.42 No significant change to the historic environment baseline in this area is anticipated to occur as a result of climate change. Drier weather in the summer months may lead to the discovery of as yet unknown archaeological sites that become visible as cropmarks or parchmarks. However,

this could also lead to some drying out of deposits (within palaeochannels) which are currently waterlogged or damp and this may result in some loss of significance of these deposits in terms of palaeoenvironmental potential.

7.6.43 A number of proposed or consented developments at Gatwick Airport would proceed in the short-term in the absence of the Project (as explained in Chapter 4: Existing Site and Operation). These include:

- Boeing hangar (now completed);
- extension to Pier 6;
- alternations to Taxiway Quebec;
- reconfiguration of aircraft stands;
- resurfacing of the main runway in accordance with the usual maintenance schedule; and
- replacement of the Instrument Landing System (ILS) localisers.
- multi-storey car park 4 (1,500 vehicles);
- multi-storey car park 7 (2,750 vehicles);
- use of robotics technology within existing long stay parking areas to increase capacity, resulting in an additional 2,500 spaces;
- highway improvements to North Terminal and South Terminal roundabouts, signalisation and signage;
- extension to the existing BLOC hotel (approximately 200 additional bedrooms); and
- reconfiguration of the existing Hilton hotel to provide 50 additional bedrooms.

7.6.44 For further details, see Chapter 4: Existing Site and Operation. These developments are unlikely to result in any change to the future baseline situation with regard to the historic environment.

7.6.45 As explained above (Section 7.5), further investigation of the archaeological potential of land within the Project site boundary is planned to take place ahead of the production of the ES that would be submitted in support of the application for development consent for the Project. The results of any such investigations would be incorporated into the historic environment baseline reported within the ES.

7.7. Key Project Parameters

7.7.1 The assessment has been based on the parameters identified within Chapter 5: Project Description.

7.7.2 Table 7.7.1 below identifies the key parameters where relevant to this assessment. Where options exist, the maximum design scenario selected is the one having the potential to result in the greatest effect on an identified receptor or receptor group. Effects of greater adverse significance are not predicted to arise should any other option identified in Chapter 5: Project Description be taken forward in the final design of the Project.

7.7.3 With regard to the dates used here for each phase, where the potential impacts are physical (such as loss of or damage to archaeological or palaeoenvironmental remains) the activity is included within the period in which the activity commences. This is because the impacts would occur at the start of the activity. Conversely, where the potential impacts are non-physical (change within the setting of a heritage asset), the activity is included within the period in which the activity concludes.

Table 7.7.1: Maximum Design Scenarios

Potential Impact	Maximum Design Scenario	Justification
Initial Construction Phase: 2024-2029		
Loss of, or damage to, buried archaeological or palaeoenvironmental remains	Flood compensation area: Museum Field lowering (3.5 metres deep)	Greatest depth of excavation
	Flood compensation area: East of Museum Field (3.5 metres deep)	
	Flood compensation area: car park X (2.5 metres deep)	
	Surface access satellite contractor compound, South Terminal (up to 2 hectares)	Greatest site area
Harm to the significance of a heritage asset as a result of change within its setting	Main contractor construction compound MA1 (up to 5 hectares, including infrastructure up to 30 metres high)	Greatest visual change
	Surface access satellite contractor compound, North Terminal (up to 1.6 hectares including infrastructure up to 15 metres high)	
	Airfield satellite contractor compound (up to 6 hectares including infrastructure up to 30 metres high)	
	Surface access satellite contractor compound, South Terminal (up to 2 hectares including infrastructure up to 15 metres high)	
	Relocated fire training ground, rig height up to 25 metres high within an area of up to 1.2 hectares	
	Relocated grounds maintenance facility up to 8 metres high within a compound measuring approximately 0.13 hectares	
	Relocated airfield Surface Transport facility up to 15 metres high within a compound measuring approximately 0.14 hectares	
	Satellite Airport Fire Service provision up to 15 metres high	
	Noise mitigation feature up to 10 metres high	
	South Terminal IDL extension up to 29 metres high covering an area of approximately 0.38 hectares	
	North Terminal baggage reclaim extension up to 7 m high covering an area of approximately 0.065 hectares	

Potential Impact	Maximum Design Scenario	Justification
	<p>North Terminal IDL northern extension up to 32.5 metres high covering an area of approximately 0.42 hectares, southern extension up to 27 metres high covering an area of approximately 0.34 hectares</p> <p>New hotel at the building compound adjacent to the car rental site up to 16.3 metres high</p> <p>North Terminal Long Stay decked car park (phase 1) up to 11 metres high covering an area of approximately 13 hectares</p> <p>Multi storey car park J up to 27 metres high covering an area of approximately 1 hectare</p> <p>Pentagon Field decked car park up to 8 m high covering an area of approximately 8.8 hectares</p> <p>Car parks X and V (decked) up to 7 metres high covering an area of approximately 6.9 hectares</p>	
2030-2032		
Loss of, or damage to, buried archaeological or palaeoenvironmental remains	Surface access satellite contractor compound, Longbridge Roundabout (up to 0.65 hectares)	Greatest site area
Harm to the significance of a heritage asset as a result of change within its setting	<p>Surface access satellite contractor compound, Longbridge Roundabout (up to 0.65 hectares including infrastructure up to 5 metres high)</p> <p>Relocated CARE facility (22 metres high buildings and 50 metres high flues) within a compound area of up to 1.76 hectares</p> <p>Relocated Motor Transport facility up to 15 metres high covering an area of up to 1.56 hectares</p> <p>North Terminal baggage hall extension up to 12.5 metres high covering an area of approximately 0.66 hectares</p> <p>South Terminal hotel (at car park H) up to 27 metres high</p> <p>Offices – 3 blocks each up to 27 metres high and covering an area of approximately 0.1 hectares</p> <p>North Terminal Hotel (at car park Y) up to 27 metres high</p>	Greatest visual change

Potential Impact	Maximum Design Scenario	Justification
	North Terminal Long Stay decked car park (phase 2) up to 27 metres high	
	Car park H multi-storey phase 1 up to 27 metres high covering an area of approximately 0.5 hectares	
	Surface Access South Terminal improvements, M23 Spur/Airport Way raised 8 metres over existing South Terminal roundabout with new flyover 130 m long, Balcombe Road overbridge raised 2.2 metres	
	Surface Access North Terminal improvements, new elevated link from Airport Way approximately 200 metres long and up to 8 metres high	
2033-2038		
Loss of, or damage to, buried archaeological or palaeoenvironmental remains	Flood compensation area - Gatwick Stream (up to 5 metres deep)	Greatest depth of excavation
Harm to the significance of a heritage asset as a result of change within its setting	New Pier 7 up to 18 metres high covering an area of up to 10.1 hectares	Greatest visual change
	New hangar up to 32 metres high and covering an area of approximately 1.24 hectares	
	Car park Y multi storey up to 27 metres high covering an area of approximately 1.9 hectares	

7.8. Mitigation and Enhancement Measures Adopted as Part of the Project

- 7.8.1 A number of measures have been designed into the Project to reduce the potential for impacts on the historic environment. These are listed below in Table 7.8.1.
- 7.8.2 In respect of construction, standard good practice measures regarding noise, dust etc would be adopted and implemented through the Code of Construction Practice (CoCP). Further details of environmental management during construction are provided in Chapter 5: Project Description and the Outline CoCP provided at Appendix 5.3.1.
- 7.8.3 Mitigation against potential impacts to buried archaeological remains would principally comprise avoidance through design (ie relocation or micro-siting of proposed activities) or protection by placing material over the archaeological remains such that the impact of construction activities does not extend as far as the remains. The placement of materials may be permanent or may be temporary, with the materials being removed following completion of the construction activities. For example, at the contractor compounds on undeveloped ground, it may be possible to avoid

stripping of soils in some of the materials laydown areas. Instead, geotextile matting (or an equivalent) would be placed on the topsoil and a layer of crushed stone would be added.

- 7.8.4 As explained above (Section 7.5), a programme of further archaeological investigation of the archaeological potential of land within the Project site boundary is planned to take place ahead of the production of the ES. The scope of these investigations will be agreed with the archaeological advisors to the relevant planning authority. The results of these investigations will be examined, and any opportunities for mitigation through avoidance or reduction of impact on buried archaeological remains will be identified and considered alongside other factors influencing the design process.

Table 7.8.1: Mitigation and Enhancement Measures

Measures Adopted as Part of the Project	Justification
Mitigation	
A vegetation retention strategy for all elements of the Project that coincide with, or lie immediately adjacent to, existing significant vegetation including hedgerows, woodland and trees that may be affected during the construction phase or during maintenance activities.	To eliminate or reduce any potential harm to the significance of a heritage asset as a result of change within its setting.
Proposed woodland and tree planting.	
Proposed earth shaping, embankments, cuttings or bunds.	
Proposed fences, walls or barriers.	
Measures designed to reduce noise (as described in Section 14.8. of Chapter 14: Noise and Vibration).	
Enhancement	
Removal of detracting elements within the setting of a heritage asset and replacement with elements that make a positive or neutral contribution to the significance of the asset. For example, the partial removal of the car park and replacement with appropriate planting adjacent to the Grade II* listed Charlwood Park Farmhouse.	To enable a greater ability to appreciate and understand the significance of a heritage asset as a result of change within its setting.

Offsetting

- 7.8.5 Where programmes of archaeological investigation (including dissemination of results and the placement of acquired materials in suitable archives) are undertaken post-consent (ahead of and during construction), this is not considered to be mitigation as it does not avoid or reduce the magnitude of impact or the significance of effect. Rather it is considered that the programmes of archaeological investigation are a means of ‘offsetting’ or ‘remedying’ those impacts and effects (see Thomas, 2019). The same logic applies to the recording of historic buildings ahead of demolition.

7.9. Assessment of Effects

7.9.1 With regard to the assessment periods used here, where the potential impacts are physical (such as loss of or damage to archaeological or palaeoenvironmental remains) the activity is included within the assessment period in which the activity commences. This is because the impacts would occur at the start of the activity. Conversely, where the potential impacts are non-physical (change within the setting of a heritage asset), the activity is included within the assessment period in which the activity concludes. If any instances are identified where changes within the setting of a heritage asset would be substantially different (and more harmful to the significance of that asset) during construction than during the subsequent phases, details are provided below.

7.9.2 In each case the assessment takes account of mitigation that has been incorporated into the Project design, ie the stated effects are those that would occur with the designed-in mitigation in place.

Initial Construction Phase: 2024-2029

7.9.3 This section describes the effects on the historic environment that would arise as a result of construction activities only during the initial construction phase prior to the opening of the altered northern runway. Key effects are summarised in table format in the summary section at the end of the chapter (see Table 7.13.1).

7.9.4 Construction activities have the potential to impact directly on buried archaeological remains. Such impacts could occur during site clearance, groundworks or other construction activities that require ground disturbance.

Contractor Compounds

7.9.5 A number of locations within the Project site boundary have been identified as areas where contractor compounds are likely to be established.

Main Contractor Compound

7.9.6 The main contractor compound would be in the south eastern part of the operational airport. It is within an identified zone of low archaeological potential (Figure 7.6.5); the current nature of the area is concrete hardstanding used for parking, but formerly there were substantial hangars and other buildings here and the hardstanding was designed for the movement of planes. As a consequence, any archaeological remains that may have been present here are likely to have been heavily impacted and would now be in a highly degraded state. The magnitude of impact of establishing the contractor compound on buried archaeological remains would be negligible and the area is of negligible sensitivity or value. The consequent significance of effect would be **negligible**, which is not significant in terms of the EIA Regulations.

7.9.7 The establishment and use of the main contractor compound would not affect the significance of any heritage asset as a result of change within its setting due to the nature from the works and the distance to the assets. The magnitude of impact and significance of effect would therefore be **no change**.

Airfield Satellite Contractor Compound

7.9.8 The land proposed for the airfield satellite compound has been previously subject to archaeological investigation (as part of the Gatwick North West Zone), which established an

absence of buried archaeological remains, and the eastern half of this area has recently been used as a contractor compound during construction of the Boeing hangar. However, there is an identified higher level of potential in the western part of the proposed airfield satellite contractor compound for the presence of palaeochannels associated with the former alignment of the River Mole, as these could be at a level lower than that which was investigated by the previous archaeological work here. If palaeochannels are present, they would be of up to medium sensitivity or value. The impact of establishing the contractor compound would be of negligible magnitude (as works are unlikely to penetrate to the depth at which palaeochannels may be present) and the assessed significance of the effect would be **negligible**. This is not considered significant in terms of the EIA Regulations. If the methodology for the establishment of the compound includes works with the potential to impact on possible palaeochannels, an appropriate programme of investigation would be undertaken in order to offset any adverse effect.

- 7.9.9 The establishment and use of the airfield satellite compound would not affect the significance of any heritage asset as a result of change within its setting due to the nature of the works and the distance from the assets. The magnitude of impact and significance of effect would therefore be **no change**.

Surface Access Satellite Contractor Compound, South Terminal

- 7.9.10 The land proposed for this contractor compound is located to the north of the South Terminal roundabout at the junction of the M23 motorway spur and the A23 road and immediately east of the Brighton-London mainline railway. This land has not been previously developed.
- 7.9.11 A geophysical survey carried out for the Project found that the land here was not susceptible to this type of survey (ie reliable readings could not be obtained), with a high degree of signal interference. This is likely to be the result of attempts at soil improvement or possibly the dumping of materials to raise the ground level (see Figure 6.3.11 in Appendix 7.6.1: Historic Environment Baseline Report). However, the land immediately to the west (on the other side of the railway) is an Area of High Archaeological Potential identified on the basis of antiquarian finds including prehistoric flintwork, Late Iron Age cremation burials, and Roman pottery and coins. These discoveries are likely to relate to the construction of the railway (which opened in 1841). The possibility that archaeological activity may extend onto the area for the proposed contractor compound cannot be ruled out.
- 7.9.12 If present, archaeological remains similar to those found to the west are likely to be of up to medium sensitivity or value. Depending on the nature of the works required for establishment of the contractor compound, the magnitude of impact could be up to high and could be permanent. In this event, the consequent significance of effect could be up to **major adverse**, which is significant in terms of the EIA Regulations.
- 7.9.13 The programme of further archaeological investigation that would be undertaken ahead of the production of the ES (see Section 7.8 above) would include examination of this location. If archaeological remains of medium (or high) sensitivity or value are identified, it may be possible for appropriate mitigation (see paragraph 7.8.3) to be incorporated into the methodology for the establishment of the construction compound, such that the magnitude of impact would be reduced to negligible. The consequent significance of effect could be up to **minor adverse** (high sensitivity remains) or **negligible** (medium sensitivity remains), which is not significant in terms of the EIA Regulations. If the appropriate mitigation is not possible, a programme of further archaeological investigation would be undertaken in order to offset the adverse effect.

- 7.9.14 The establishment and use of the contractor compound to the north of the South Terminal roundabout would not affect the significance of any heritage asset as a result of change within its setting due to the nature of the works and the distance from the assets. The magnitude of impact and significance of effect would therefore be **no change**.
- 7.9.15 The establishment and use of the contractor compound to the north of the South Terminal roundabout would result in a change to the character of the historic landscape in this area. This is recorded in the Surrey Historic Landscape Characterisation (HLC) as Character Subtype 'Large regular fields with straight boundaries (parliamentary enclosure type)' (see Figure 4.1.5 in Appendix 7.6.1: Historic Environment Baseline Report). This Subtype is relatively common in Surrey, but less common in the vicinity of Gatwick due to the amount of development in the area (including the airport). The contractor compound would occupy a small part of a larger block of this Subtype which extends north towards Horley. The historic landscape character is considered to be of low sensitivity or value, and the establishment and use of the contractor compound would represent a low magnitude of impact. The consequent significance of effect has been assessed as **negligible**, which is not significant in EIA terms.

Surface Access Satellite Contractor Compound, North Terminal

- 7.9.16 This contractor compound would be established within land currently used as a surface car park adjacent to the Premier Inn which is north west of the North Terminal roundabout on the A23 Airport Way. It is within an identified zone of low archaeological potential (Figure 7.6.5) on the basis of previous development activity leading to the establishment of the current surface car park. As a consequence, any archaeological remains that may have been present here are likely to have been heavily impacted and would now be in a highly degraded state. The magnitude of impact of establishing the contractor compound on buried archaeological remains would be negligible and the area is of negligible sensitivity or value. The consequent significance of effect would be **negligible**, which is not significant in terms of the EIA Regulations.
- 7.9.17 The establishment of the contractor compound to the north west of the North Terminal roundabout would not affect the significance of any heritage asset as a result of change within its setting. This is due to the nature of the works and the distance from any assets. The magnitude of impact and significance of effect would therefore be **no change**.

Flood Compensation Areas - Museum Field and East of Museum Field

- 7.9.18 The Project design includes several areas where flood compensation measures would be implemented (see Chapter 5: Project Description). One such area is located in the western part of the Project site on land known as Museum Field. The ground level within this field would be reduced and the drainage configured such that water could flow into here from the River Mole and then later be released back into the river as and when safe to do so.
- 7.9.19 Geophysical survey carried out here with regard to the Project identified several anomalies of potential archaeological interest (see Figure 6.3.10 in Appendix 7.6.1: Historic Environment Baseline Report). These included a possible sub-rectangular enclosure at the eastern edge of the field and extending beyond the survey area. The linear feature forming the west side of the enclosure was well-defined, and in the northern part it was mirrored by a parallel feature. This may represent a livestock drove or funnel along the northern side of the enclosure. Another possible enclosure was suggested by a shorter linear anomaly to the south west.

- 7.9.20 The programme of further archaeological investigation that would be undertaken ahead of the production of the ES (see Section 7.8 above) would include examination of this location. If the possible features represent enclosures of prehistoric or Roman date, then these are likely to be of low to medium sensitivity or value. Ground reduction to create a flood storage reservoir would result in a high magnitude of impact on archaeological remains (if present) and would be permanent. The consequent significance of effect would be up to **major adverse**, which is significant in terms of the EIA Regulations. An appropriate programme of archaeological investigation would be undertaken ahead of construction in order to further define and offset the effect.
- 7.9.21 To the east of the Museum Field is a small area of land that would be used to provide an additional flood compensation area. Parts of this area have been previously impacted during the diversion of the River Mole, however there may be areas that have not been previously disturbed. Those areas which have been previously disturbed fall within a zone of low archaeological potential, whilst the areas not previously disturbed are within a zone of medium archaeological potential (Figure 7.6.5). Any archaeological remains here would be of low to medium sensitivity or value. The impact of the proposed flood compensation measures would be of low magnitude and the consequent significance of effect would be up to **minor adverse**, which is not significant in terms of the EIA Regulations. An appropriate programme of archaeological investigation would be undertaken ahead of construction in order to further define and offset the effect.
- 7.9.22 The lowering of land within Museum Field and creation of a flood compensation area on adjacent land to the east would not affect the significance of any heritage asset as a result of change within its setting. This is due to the nature of the works and the distance from any assets. The magnitude of impact and significance of effect would therefore be **no change**.
- 7.9.23 The establishment of the flood compensation area at Museum Field would result in a change to the character of the historic landscape in this area. This is recorded in the Sussex Historic Landscape Characterisation (HLC) as Character Type 'Assarts' (see Figure 4.1.4 in Appendix 7.6.1: Historic Environment Baseline Report). This Type is relatively common in Sussex, but less common in the vicinity of Gatwick due to the amount of development in the area (including the airport). The flood compensation area would occupy part of a larger block of this Type which extends north. The historic landscape character is considered to be of low sensitivity or value, and the establishment of the flood compensation area would represent a negligible magnitude of impact as the field boundaries would remain intact. The consequent significance of effect has been assessed as **negligible**, which is not significant in EIA terms.

Flood Compensation Area – Car Park X

- 7.9.24 The implementation of the flood compensation area at car park X would require reductions in ground levels by up to 2.5 metres below the existing surface level. Previous disturbance associated with the construction of car park X is likely to have removed any buried archaeological remains that may have been present here and this is regarded as an area of low archaeological potential (Figure 7.6.5). However, there is some potential at the western end of car park X for the presence of palaeochannels associated with former routes of the River Mole, and deposits of geoarchaeological and/or palaeoenvironmental interest may survive. If present, such deposits are likely to be of low sensitivity or value. The ground reduction could result in a high magnitude of impact and would be permanent. The consequent significance of effect would be up to **moderate adverse**, which is significant in terms of the EIA Regulations. An appropriate

programme of investigation would be undertaken ahead of construction in order to further define and offset the effect.

- 7.9.25 The lowering of land within car park X would not affect the significance of any heritage asset as a result of change within its setting. This is due to the nature of the works and the distance from any assets. The magnitude of impact and significance of effect would therefore be **no change**.

Decked Car Parks X and V

- 7.9.26 The decked car parks X and V would be up to 7 metres high. However, these car parks would not be visible in views from or across the Grade II* listed building Charlwood House to the south (Figure 7.6.2, Site 23). This is due to the mature vegetation along each side of Charlwood Road in this area, particularly on the south side adjacent to the listed building. The sensitivity or value of this asset is high. The impact of the construction and operation of the decked car park on the significance of this Grade II* listed building would be no change and the consequent significance of effect would be **no change**, which is not significant in terms of the EIA Regulations. The same assessment applies to a number of Grade II listed buildings located to the south of Charlwood House ((Figure 7.6.2, Sites 388, 156, 296 and 334), except that for these assets their sensitivity or value is medium rather than high.

Spoil Placement and Decked Car Park - Pentagon Field

- 7.9.27 The spoil strategy for the Project envisages the placement of approximately 245,000 cubic metres of spoil at Pentagon Field, raising the ground here by between 2 metres and 4.5 metres. Placement of the spoil requires removal of topsoil but no further excavation. Following the placement and consolidation of the spoil, a decked car park will be constructed with a maximum height of 8 metres.
- 7.9.28 Geophysical survey carried out at Pentagon Field with regard to the Project did not identify anomalies of potential archaeological interest (see Figure 6.3.9 in Appendix 7.6.1: Historic Environment Baseline Report). However, further archaeological investigation is proposed here as the land is immediately east of a designated ANA. If present, archaeological remains similar to those encountered in the ANA are likely to be of up to medium sensitivity or value. The placement of spoil and construction of the decked car park would result in a high magnitude of impact on archaeological remains (if present) and would be permanent. The consequent significance of effect would be up to **major adverse**, which is significant in terms of the EIA Regulations. An appropriate programme of archaeological investigation would be undertaken ahead of construction in order to further define and offset the effect.
- 7.9.29 The decked car park at Pentagon Field would be up to 8 metres high and a new substation here would be up to 5 metres high. The car park may be visible in views from or across the two Grade II listed buildings to the north which now form part of the Courtyard Marriot Hotel (Edgeworth House and Wing House; Figure 7.6.2, Sites 133 and 134). The sensitivity or value of these assets is medium. The setting of these designated heritage assets already includes modern buildings (such as the main hotel building) as well as large areas of surface car parking. The impact of the construction and operation of the decked car park on the significance of these two listed buildings would be no change and the consequent significance of effect would be **no change**, which is not significant in terms of the EIA Regulations.

- 7.9.30 There are also two Grade II listed buildings located 350 – 400 metres to the north east of Pentagon Field; Old Cottage and Lilac Cottage, both on Donkey Lane (Figure 7.6.2, Sites 140 and 325). These assets are of medium sensitivity or value. Views from and across these two cottages towards Pentagon Field include considerable amounts of mature vegetation immediately to the west of both dwellings, resulting in a total lack of any intervisibility. The impact of the construction and operation of the decked car park on the significance of these two listed buildings would be no change and the consequent significance of effect would be **no change**, which is not significant in terms of the EIA Regulations.
- 7.9.31 The construction and use of the decked car park at Pentagon Field would result in a change to the character of the historic landscape in this area. This is recorded in the Sussex Historic Landscape Characterisation (HLC) as Character Type ‘Assarts’ (see Figure 4.1.4 in Appendix 7.6.1: Historic Environment Baseline Report). This Type is relatively common in Sussex, but less common in the vicinity of Gatwick due to the amount of development in the area (including the airport). The decked car park would occupy all of a surviving block of this Type (the HLC records that this extends further to the north, but some has already been replaced by a surface car park). The historic landscape character is considered to be of low sensitivity or value, and the construction and use of the decked car park would represent a high magnitude of impact as the character would be completely lost. The consequent significance of effect has been assessed as **minor adverse**, which is not significant in EIA terms.

Car Park Y

- 7.9.32 A water runoff treatment and storage facility would be established on land currently used as a surface car park (car park Y) which is adjacent to the Gatwick Premier Inn and which has been present for more than 20 years. Previous disturbance associated with the construction of the hardstanding for car park Y is likely to have removed any buried archaeological remains that may have been present here and this is regarded as an area of low archaeological potential (Figure 7.6.5). It is therefore unlikely that the establishment of this storage facility would impact on buried archaeological remains, nor would it affect the significance of any heritage asset as a result of change within its setting. The magnitude of impact and significance of effect would therefore be **no change**.

Works on the Northern Runway, Taxiways, Aircraft Stands, Virgin Hangar Pavement Works, Relocation of Rendezvous Point North, Pumping Station 2a

- 7.9.33 All of these works are within the operational airport and in areas that are likely to have been disturbed as a result of previous airfield-related works such as the installation of buried services. As a consequence, any archaeological remains that may have been present here are likely to have been heavily impacted and would now be in a highly degraded state. All of this land is within an identified zone of low archaeological potential (Figure 7.6.5). The magnitude of impact of these works on buried archaeological remains would be negligible and the area is of negligible sensitivity or value. The consequent significance of effect would be **negligible**, which is not significant in terms of the EIA Regulations.
- 7.9.34 These works would not affect the significance of any heritage asset as a result of change within its setting. The magnitude of impact and significance of effect would therefore be **no change**.

Relocation of Fire Training Ground

- 7.9.35 The fire training ground is within the western end of the operational airport. It would need to be relocated very slightly to the north and reorganised, but would still remain within land that has been previously disturbed as a result of the establishment of the present fire training ground. As a consequence, any archaeological remains that may have been present here are likely to have been heavily impacted and would now be in a highly degraded state. All of this land is within an identified zone of low archaeological potential (Figure 7.6.5). The magnitude of impact of the relocation of the fire training ground on buried archaeological remains would be negligible and the area is of negligible sensitivity or value. The consequent significance of effect would be **negligible**, which is not significant in terms of the EIA Regulations.
- 7.9.36 The relocation of the fire training ground would not affect the significance of any heritage asset as a result of change within its setting. This is due to the nature of the works and the distance from any assets. The magnitude of impact and significance of effect would therefore be **no change**.

Demolition

- 7.9.37 A limited programme of demolition is required as part of the Project; buildings proposed for demolition are identified in Chapter 5: Project Description (paragraph 5.3.75). The only one of these which is considered to have any level of heritage value is the former air traffic control tower located at the northern end of Control Tower Road within the operational airport. This was built as part of the 1956-58 expansion of Gatwick Airport and was in use until a replacement tower was opened in 1984.
- 7.9.38 The former air traffic control tower is not a designated heritage asset, or a locally listed building. However, it is of some interest and a low sensitivity or value should be applied. The demolition would result in a high magnitude of impact (permanent) and the consequent significance of effect has been assessed as **minor adverse**, which is not significant in EIA terms. This effect would be offset through a programme of building recording to an appropriate level which would be undertaken ahead of demolition.

Environmental Mitigation Land

- 7.9.39 Several parcels of land have been identified within the Project site boundary where environmental mitigation is proposed. These include parcels of land surrounding Museum Field where planting of trees and hedgerows would be undertaken. The design of any environmental mitigation will take account of the potential presence of buried archaeological remains. Much of the land surrounding Museum Field has already been subject to geophysical survey in connection with the Project (see Figure 6.3.10 in Appendix 7.6.1: Historic Environment Baseline Report).
- 7.9.40 This land falls within zones of medium or high archaeological potential (Figure 7.6.5) and any archaeological remains here would be of up to medium sensitivity or value (based on current understanding). The impact of the proposed environmental mitigation would be of up to high magnitude and the consequent significance of effect would be up to **major adverse**, which is significant in terms of the EIA Regulations.
- 7.9.41 However, the programme of further archaeological investigation that would be undertaken ahead of the production of the ES (see Section 7.8 above) would include examination of this land. If archaeological remains of medium (or high) sensitivity or value are identified, appropriate mitigation (see paragraph 7.8.3) may be incorporated into the design of the environmental

mitigation, such that the magnitude of impact should be reduced to negligible. The consequent significance of effect would be up to **minor adverse** (high sensitivity remains), which is not significant in terms of the EIA Regulations. If the appropriate mitigation is not possible, a programme of further archaeological investigation would be undertaken in order to offset the adverse effect.

- 7.9.42 Other potential areas where environmental mitigation may be undertaken with regard to the Project have been identified within the design process (see Figure 5.2.1g in Chapter 5: Project Description). However, the likelihood and nature of any environmental mitigation at any of these locations remains unknown at the current time. If any environmental mitigation works at any of these locations is identified as having the potential to impact on buried archaeological remains, a suitable programme of archaeological investigation would be designed and implemented in order to mitigate or offset any adverse effects. Likely effects on the significance of heritage assets (as a result of change within their settings) and/or on the character of the historic landscape, would also be assessed and mitigated wherever possible.

Multi Storey Car Park J

- 7.9.43 This element of the Project would be up to 27 metres high, however it would be consistent with the current massing of the airport infrastructure. The construction and operation of the multi-storey car park J would not affect the significance of any heritage asset as a result of change within its setting. The location is almost wholly within previously developed land and there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.

South Terminal IDL Extension and Forecourt

- 7.9.44 This element of the Project would be up to 29 metres high, however it would be consistent with the current massing of the airport infrastructure. The construction and operation of the South Terminal IDL extension and changes to the forecourt would not affect the significance of any heritage asset as a result of change within its setting. The location is almost wholly within previously developed land and there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.

New hotel at the Building Compound Adjacent to the Car Rental Aite

- 7.9.45 This element of the Project would be up to 16.3 metres high, however it would be consistent with the current massing of the airport infrastructure. The construction and operation of the new hotel at the building compound adjacent to the car rental site would not affect the significance of any heritage asset as a result of change within its setting. The location is almost wholly within previously developed land and there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.

Satellite Airport Fire Service Facility

- 7.9.46 This element of the Project would be up to 15 metres high. The construction and operation of the Satellite Airport Fire Service Facility would not affect the significance of any heritage asset as a result of change within its setting. The location is likely to be within previously developed land and there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.

Airfield Surface Transport and Grounds Maintenance Facility

- 7.9.47 This element of the Project would be up to 15 metres high. The construction and operation of the Airfield Surface Transport and Grounds Maintenance Facility would not affect the significance of any heritage asset as a result of change within its setting. The location is wholly within previously developed land and there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.

Decked Car Park North Terminal Long Stay Phase 1

- 7.9.48 Phase 1 of the decked car park at North Terminal Long Stay would be up to 11 metres high. The location is within 150 metres of the Grade II* listed Charlwood Park Farmhouse (Figure 7.6.2, Site 27), now operating as a nursery school (Bear and Bunny). The building is of high sensitivity or value. The current setting of the former farmhouse makes a limited contribution to its significance, with detracting elements including the surface car park area to the north as well as the noise and visual impacts from the operational airport.
- 7.9.49 No part of Phase 1 of the decked car park would be visible in views from and across Charlwood Park Farmhouse, therefore the magnitude of impact would be no change. The significance of effect on the significance of this Grade II* listed building would be **no change**, which is not significant in terms of the EIA Regulations.
- 7.9.50 The location is almost wholly within previously developed land and there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect on buried archaeology would therefore be **no change**.

North Terminal IDL Extension and Forecourt, and Baggage Reclaim Facility Extension

- 7.9.51 This element of the Project would be up to 32.5 metres high. The construction and operation of the extension to the North Terminal and changes to the forecourt would not affect the significance of any heritage asset as a result of change within its setting. The location is almost wholly within previously developed land and there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.

Inter-Terminal Transit System (ITTS) Improvements

- 7.9.52 The construction and operation of the improvements to the ITTS would not affect the significance of any heritage asset as a result of change within its setting. The location is almost wholly within previously developed land and there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.

Replacement 'Purple Parking' at Crawter's Field

- 7.9.53 The construction and operation of this surface car park at the western end of Crawter's Field would not affect the significance of any heritage asset as a result of change within its setting. The land here has medium potential for buried archaeological remains to be present (Figure 7.6.5) and further investigation of this area is required in order to understand the date, nature, extent and significance of any archaeological remains that may be present. Some of the land required for this car park is currently occupied by woodland which was planted here as part of the post-war expansion of the airport, and this planting and subsequent tree growth would probably have had a detrimental effect on any potential archaeological remains in this location. Consequently, any surviving remains are likely to be of low sensitivity or value. The work required to establish the

surface car park would result in a high magnitude of impact and would be permanent. The consequent significance of effect would be up to **moderate adverse**, which is significant in terms of the EIA Regulations. An appropriate programme of archaeological investigation would be undertaken ahead of construction in order to offset the effect.

Relocation of Pond A and River Mole Diversion

7.9.54 The area required for the relocation of Pond A and the River Mole diversion corresponds to a considerable extent with the land proposed for the airfield satellite compound. This land has been previously subject to archaeological investigation (as part of the Gatwick North West Zone), which established an absence of buried archaeological remains, and the eastern half of this area has recently been used as a contractor compound during construction of the Boeing hangar. However, there is an identified higher level of potential for the presence of palaeochannels associated with the former alignment of the River Mole, as these could be at a level lower than that which was investigated by the previous archaeological work here. If palaeochannels are present, they would be of up to medium sensitivity or value. The impact of relocating Pond A and constructing the River Mole diversion (including the secondary channel) would result in an impact magnitude of up to medium, and the consequent significance of effect would be **moderate adverse**. This is significant in terms of the EIA Regulations. An appropriate programme of investigation would be undertaken in order to offset any adverse effect.

7.9.55 The relocation of Pond A and the construction and use of the River Mole Diversion (including the secondary channel) would not affect the significance of any heritage asset as a result of change within its setting. The magnitude of impact and significance of effect would therefore be **no change**.

Extension to Dog Kennel Pond

7.9.56 The extension to Dog Kennel Pond is located entirely within the current secondary basin established for this pond. Consequently, there is no potential for impact on any buried archaeological remains. The construction and use of the extension to Dog Kennel would not affect the significance of any heritage asset as a result of change within its setting. The magnitude of impact and significance of effect would therefore be **no change**.

Construction Noise

7.9.57 Chapter 14: Noise and Vibration addresses the issue of construction noise. Initial modelling has been undertaken and the results are presented in Appendix 14.9.1. However, it is important to note that this assessment is worst case, based on a series of cautious assumptions, in order to provide an indication of the potential scale of adverse effects at this stage. The construction noise modelling and assessment will be refined in the ES, including further consideration of mitigation measures and impacts on specific sensitive receptors including heritage assets. This will allow the ES to consider the overall impacts and effects on individual heritage assets.

Ground Noise

7.9.58 No ground noise would be generated by the Project until the first full year of opening (2029).

Road Traffic Noise

7.9.59 Chapter 14: Noise and Vibration addresses the issue of road traffic noise. Modelling of construction traffic noise during peak airfield and peak highways work will be undertaken and this

information will be available for the ES. This will facilitate assessment of potential impacts and effects on individual heritage assets where appropriate.

Further Mitigation

- 7.9.60 No further mitigation is proposed. Some archaeological investigation may be undertaken of land within Museum Field and east of Museum Field, also the surrounding land required for environmental mitigation, South Terminal surface access contractor compound, Pentagon Field and the replacement 'Purple Parking' area at the west of Crawler's Field. Some geoarchaeological investigation will be undertaken within the car park X flood compensation area and also ahead of the River Mole diversion and the relocation of Pond A, and possibly ahead of the establishment of the airfield satellite contractor compound. The former air traffic control tower would be subject to a programme of historic building recording prior to demolition. In all cases this would be part of the process of 'offsetting' harm rather than avoiding or reducing impacts.

Future Monitoring

- 7.9.61 No future monitoring is proposed with regard to any effects on the historic environment during construction.

2030-2032 Ongoing construction works and first years of operation of the Northern Runway

Central Area Recycling Enclosure (CARE) Facility

- 7.9.62 The existing CARE facility would need to be replaced as part of the Project. The relocated CARE facility would process all airport waste and would include buildings up to 22 metres high and a flue up to 50 metres high. Two potential locations have been identified for the relocated CARE facility (see Chapter 5: Project Description). Both are located in areas of land within the operational airport that are used as surface car parks, and some of the land at the western potential location (Option 2) has been previously subject to archaeological investigation in 2002. The archaeological potential for both locations is considered to be low as a result of previous development.
- 7.9.63 The construction and operation of CARE Option 1 would not affect the significance of any heritage asset as a result of change within its setting.
- 7.9.64 The CARE Option 2 site is located further to the west than Option 1 and is closer to the boundary of the operational airport. The location is within 200 metres of the Grade II* listed Charlwood Park Farmhouse (Figure 7.6.2, Site 27), now operating as a nursery school (the Bear and Bunny nursery). The current setting of the former farmhouse makes a limited contribution to its significance, with detracting elements including the surface car park area to the north as well as the noise impacts from the operational airport.
- 7.9.65 The proposed flue of the relocated CARE facility on the Option 2 site is likely to be visible in views from and across the Grade II* listed building. This is a resource of high sensitivity or value and the magnitude of impact would be low and permanent (but reversible), with the consequent significance of effect assessed as **minor adverse**. This is not significant in terms of the EIA Regulations.

- 7.9.66 The proposed flue of the relocated CARE facility on the Option 1 and Option 2 sites could be visible in views from and across other designated heritage assets, including the listed buildings and Conservation Area at Charlwood (see Figure 7.6.2). These assets are considered to be of medium to high sensitivity or value. However, the distance between these assets and the CARE facility would mean that the magnitude of any impacts would be negligible at worst and the consequent significance of effect in all cases would be **minor adverse**, which is not significant in terms of the EIA Regulations.

Replacement Motor Transport Facility

- 7.9.67 This element of the Project would be up to 15 metres high. The construction and operation of the Replacement Motor Transport Facility would not affect the significance of any heritage asset as a result of change within its setting. The location is wholly within previously developed land and there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.

North Terminal Baggage Hall Extension

- 7.9.68 This element of the Project would be up to 12.5 metres high. The construction and operation of the North Terminal baggage hall extension would not affect the significance of any heritage asset as a result of change within its setting. The location is almost wholly within previously developed land and there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.

Decked Car Park North Terminal Long Stay Phase 2

- 7.9.69 Phase 2 of the decked car park at North Terminal Long Stay would be up to 27 metres high. The location is within 150 metres of the Grade II* listed Charlwood Park Farmhouse (Figure 7.6.2, Site 27), now operating as a nursery school (Bear and Bunny). The building is of high sensitivity or value. The current setting of the former farmhouse makes a limited contribution to its significance, with detracting elements including the surface car park area to the north as well as the noise and visual impacts from the operational airport.
- 7.9.70 No part of Phase 2 of the decked car park would be visible in views from and across Charlwood Park Farmhouse, therefore the magnitude of impact would be no change. The significance of effect on the significance of this Grade II* listed building would be **no change**, which is not significant in terms of the EIA Regulations.
- 7.9.71 The location is almost wholly within previously developed land and there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect on buried archaeology would therefore be **no change**.

North Terminal Hotel at Car Park Y

- 7.9.72 This element of the Project would be up to 27 metres high. The operation of the North Terminal Hotel at car park Y would not affect the significance of any heritage asset as a result of change within its setting. The construction of the hotel would not impact on buried archaeological remains. Previous disturbance associated with the construction of the car park Y underground water treatment and runoff storage facility is likely to have removed any buried archaeological remains that may have been present here and this is regarded as an area of low archaeological

potential (Figure 7.6.5). The magnitude of impact and significance of effect would therefore be **no change**.

South Terminal Hotel at Car Park H/ Multi-storey Car Park H Phase 2 / New Office Buildings

- 7.9.73 These elements of the Project would be up to 27 metres high. They may be visible in views from or across the two Grade II listed buildings to the east which now form part of the Courtyard Marriot Hotel (Edgeworth House and Wing House; Figure 7.6.2, Sites 133 and 134), although the main part of the existing hotel lies directly between the listed buildings and these elements of the Project. These assets are of medium sensitivity or value. The setting of these designated heritage assets already includes modern buildings (such as the main Courtyard Marriot Hotel building) as well as large areas of surface car parking. The impact of the construction and operation of the hotel, the multi-storey car park and the office buildings on the significance of these two listed buildings would be no change. The consequent significance of effect would be **no change**, which is not significant in terms of the EIA Regulations.
- 7.9.74 The construction and operation of the South Terminal Hotel, multi-storey car park H and office buildings would not affect the significance of any heritage asset as a result of change within its setting. The location is almost wholly within previously developed land and there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect on buried archaeology would therefore be **no change**.

Pumping Station 7a

- 7.9.75 This element of the Project would be up to 3 metres high. The construction and operation of Pumping Station 7a would not affect the significance of any heritage asset as a result of change within its setting. The location is wholly within previously developed land and there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.

Substation North of Pier 7

- 7.9.76 This element of the Project would be up to 5 metres high. The construction and operation of the substation north of Pier 7 would not affect the significance of any heritage asset as a result of change within its setting. The location is wholly within previously developed land and there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.

Surface Access: South Terminal Roundabout Improvements

- 7.9.77 The principal element of these improvements comprises the construction of a flyover to carry the M23 Spur/A23 Airport Way over the existing roundabout. This structure would be approximately 130 metres long and up to 8 metres above existing ground level. The M23 Spur would be raised by around 2.2 m as it passes over the B2036 Balcombe Road and this overbridge would need to be replaced or strengthened. The road would also be widened to accommodate new slip roads providing access to and from a new roundabout arm linking into the land to the north. A noise barrier up to 1 metre high would be constructed along the elevated section of highway.
- 7.9.78 The construction and operation of the South Terminal Roundabout Improvements would not affect the significance of any heritage asset as a result of change within its setting. The location of the improvements is almost wholly within previously developed land and there would be no

impact on buried archaeological remains. Some land required for the improvements to the north of the South Terminal Roundabout and the M23 Spur/A27 Airport Way has not been previously developed, but any buried archaeological remains which may be present would have been addressed during the establishment of the satellite contractor compound at this location. The magnitude of impact and significance of effect would therefore be **no change**.

Surface Access: North Terminal Roundabout Improvements

- 7.9.79 The principal element of these improvements comprises the construction of a flyover to carry the A23 Airport Way over the existing roundabout. This structure would be approximately 200 metres long and up to 8 metres above existing ground level. A noise barrier up to 1 metre high would be constructed along the elevated central section of highway, whilst a second noise barrier up to 2 metres high would be constructed along a section adjacent to Riverside Park.
- 7.9.80 The construction and operation of the North Terminal Roundabout Improvements would not affect the significance of any heritage asset as a result of change within its setting. The location of the improvements is wholly within previously developed land and there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.
- 7.9.81 However, it is possible that some environmental mitigation may be undertaken within a small triangle of land to the west of the railway and north of the A27 Airport Way. This land is currently used as a staff car park (part of Car Park B) and also contains an electricity substation. It is also a designated Area of High Archaeological Potential (Site 498) relating to the antiquarian discovery of prehistoric flintwork, Late Iron Age cremation burials, and Roman pottery and coins. It is not known if any archaeological remains are present here given the extent of development work in the later part of the 20th century, but the potential for such remains to be present cannot be ruled out. If present, archaeological remains are likely to be of up to high sensitivity or value. Depending on the nature of the works required here, the magnitude of impact could be up to high and could be permanent. In this event, the consequent significance of effect could be up to **major adverse**, which is significant in terms of the EIA Regulations, however, see text below (paragraph 7.9.109) regarding potential further mitigation here that would reduce this significance of effect.

Surface Access Satellite Contractor Compound, Longbridge Roundabout

- 7.9.82 The land proposed for this contractor compound is located to the north of the Longbridge roundabout at the junction of the A23 and A217 roads. This land has not been previously developed.
- 7.9.83 No archaeological field survey has yet been undertaken with regard to this proposed compound location. An Area of High Archaeological Potential is located immediately to the north; this has been established on the basis of a small moated site with associated fish ponds (Figure 7.6.1, Sites 491, 492 and 554). The proposed compound area is also located partially within the Church Lane (Horley) Conservation Area designated by Reigate and Banstead Borough Council (Figure 7.6.2).
- 7.9.84 The programme of further archaeological investigation that would be undertaken ahead of the production of the ES (see Section 7.8 above) is likely to include examination of this location. If present, archaeological remains are likely to be of up to high sensitivity or value. Depending on

the nature of the works required for establishment of the contractor compound, the magnitude of impact could be up to high and could be permanent. In this event, the consequent significance of effect could be up to **major adverse**, which is significant in terms of the EIA Regulations, however, see text below (paragraph 7.9.109) regarding potential further mitigation here that would reduce this significance of effect.

- 7.9.85 The establishment and use of the contractor compound to the north of the Longbridge roundabout would represent a change within the setting of the Church Lane (Horley) Conservation Area in respect of that part of the compound which is outside the Conservation Area. This western part of the Conservation Area includes land either side of the River Mole that is predominantly open, and indeed the western boundary of the Conservation Area is not actually represented on the ground by any physical feature. This openness is a key element in this part of the Conservation area and extends to its setting, which makes a strong contribution to its significance. However, the establishment and use of the contractor compound would not affect the eastern part of the Conservation Area which contains the historic settlement core including several of listed buildings. The Conservation Area is of medium sensitivity or value and the establishment and use of the contractor compound would represent a low magnitude of impact that would be fully reversible. The consequent significance of effect would be **minor adverse**, which is not significant in EIA terms.
- 7.9.86 The establishment and use of the contractor compound to the north of the Longbridge roundabout would not affect the significance of any other heritage asset as a result of change within its setting. This is due to the nature of the works and the distance from the assets, also the presence of belts of mature trees between the proposed compound location and the listed buildings in the eastern part of the Conservation Area. The magnitude of impact and significance of effect would therefore be **no change**.
- 7.9.87 The establishment and use of the contractor compound to the north of the Longbridge roundabout would result in a change to the character of the historic landscape in this area. This is recorded in the Surrey Historic Landscape Characterisation (HLC) as Character Subtype 'Large regular fields with straight boundaries (parliamentary enclosure type)' (see Figure 4.1.5 in Appendix 7.6.1: Historic Environment Baseline Report). This Subtype is relatively common in Surrey, but less common in the vicinity of Gatwick due to the amount of development in the area (including the airport). The contractor compound would occupy a small part of a larger block of this Subtype which extends to the north and north west. The historic landscape character is considered to be of low sensitivity or value, and the establishment and use of the contractor compound would represent a low magnitude of impact. The consequent significance of effect has been assessed as **negligible**, which is not significant in EIA terms.

Longbridge Roundabout Improvements

- 7.9.88 The works here involve the establishment of a slightly larger diameter roundabout to allow full width running lanes through the junction. There would also be additional pedestrian crossing facilities and improved capacity on exit and entry lanes, along with any necessary highway drainage works to accommodate surface water run-off.
- 7.9.89 The construction and operation of the Longbridge Roundabout Improvements would not affect the significance of any heritage asset as a result of change within its setting. The location of the improvements is within existing highway land and there would be no impact on buried

archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.

Air Noise

- 7.9.90 As described above (paragraph 7.6.38), there are three noise-sensitive designated heritage assets within the predicted negative noise change footprint and two noise-sensitive designated heritage assets within the predicted positive noise change footprint.
- 7.9.91 Chapter 14: Noise and Vibration addresses the issue of air noise and Table 5.3.1 in Appendix 14.9.2 presents noise information with regard to noise-sensitive buildings. For the Church of St John the Baptist at Capel (Site 872, NHLE 1378150) the $L_{eq\ 16\ hr}$ day noise level (in 2019) is 53.4dB. The predicted $L_{eq\ 16\ hr}$ day noise level in 2032 without the Project (ie the Do Nothing scenario) is 51.4dB, indicating a reduction in air noise due to changes in aircraft fleet mix. The predicted $L_{eq\ 16\ hr}$ day noise level in 2032 with the Project is 52.7dB, representing a decrease of 0.7dB when measured against the current situation and an increase of 1.3dB when measured against the 2032 baseline without the Project. This predicted increase of 1.3dB in the $L_{eq\ 16\ hr}$ day noise level would not affect the significance of the Grade II listed Church of St John the Baptist at Capel, particularly given that it actually represents a reduction in air noise compared to the present situation.
- 7.9.92 Specific results have not been reported with regard to the Grade II listed Quaker Meeting House with attached cottage at Capel (Site 873, NHLE 1028737), however it lies within the 51-54dB $L_{eq\ 16\ hr}$ contour range and it is assumed that noise levels (current and predicted) will be very similar to those for the nearby Church of St John the Baptist 300 metres to the north. Consequently, the changes in air noise would not affect the significance of the Grade II listed Quaker Meeting House with attached cottage at Capel.
- 7.9.93 For the relocated Grade II listed Lowfield Heath Windmill south west of Charlwood (Site 332, NHLE 1298883), Table 5.3.1 in Appendix 14.9.2 shows that the $L_{eq\ 16\ hr}$ day noise level (in 2019) is 57.9dB. The predicted $L_{eq\ 16\ hr}$ day noise level in 2032 without the Project (ie the Do Nothing scenario) is 55.7dB, indicating the reduction in air noise due to changes in aircraft fleet mix. The predicted $L_{eq\ 16\ hr}$ day noise level in 2032 with the Project is 57.7dB, representing a decrease of 0.2dB when measured against the current situation and an increase of 2.0dB when measured against the 2032 baseline without the Project. This predicted increase of 2.0dB in the $L_{eq\ 16\ hr}$ day noise level in 2032, over the otherwise baseline noise levels that would have been present in 2032, would be rated as 'low' and not a significant change in terms of the likely effects on people (as explained in Section 14.4 of chapter 14: Noise and Vibration) and would not affect the significance of the Grade II listed Lowfield Heath Windmill. Contextually, the air noise would be less than compared to the present situation.
- 7.9.94 For the Grade II* listed Church of St Michael and All Angels at Lowfield Heath (Site 24, NHLE 1187081), Table 5.3.1 in Appendix 14.9.2 shows that the $L_{eq\ 16\ hr}$ day noise level (in 2019) is 65.6dB. The predicted $L_{eq\ 16\ hr}$ day noise level in 2032 without the Project (ie the Do Nothing scenario) is 63.7dB, indicating the reduction in air noise due to changes in aircraft fleet mix. The predicted $L_{eq\ 16\ hr}$ day noise level in 2032 with the Project is 62.5dB, representing a decrease of 3.1dB when measured against the current situation and a decrease of 1.2dB when measured against the 2032 baseline without the Project. This predicted decrease of 3.1dB in the $L_{eq\ 16\ hr}$ day noise level compared to the current situation is welcomed but would not affect the significance of

effect on the Grade II listed Church of St John the Baptist at Capel, as the noise environment here is dominated by traffic noise and also noise from the surrounding industrial units.

- 7.9.95 No measurements have been produced with regard to the Grade II listed Lowfield Heath War Memorial (Site 389, NHLE 1452793), but it is assumed that noise levels (current and predicted) will be very similar to those for the adjacent Church of St Michael and All Angels. Consequently, the changes in air noise would not affect the significance of the Grade II listed Lowfield Heath War Memorial.

Construction Noise

- 7.9.96 Chapter 14: Noise and Vibration addresses the issue of construction noise. Initial modelling has been undertaken and the results are presented in Appendix 14.9.1. However, it is important to note that this assessment is worst case, based on a series of cautious assumptions, in order to provide an indication of the potential scale of adverse effects at this stage. The construction noise modelling and assessment will be refined in the ES as more details of the construction works, programme and mitigation become available. The current modelling has not been done at a scale that allows consideration of impacts and effects on individual heritage assets.

Ground Noise

- 7.9.97 Predicted changes in ground noise resulting from the operation of the Project are presented in Chapter 14: Noise and Vibration. Ground noise includes taxiing aircraft but not reverse thrust as this is part of the air noise assessment. Noise monitoring has been undertaken at twelve selected locations in the vicinity of the airport which are considered to be the nearest noise sensitive receptors - these are referred to as the baseline noise monitoring sites and their locations are indicated on Figure 14.4.1.
- 7.9.98 Baseline noise monitoring Location 4 is the Grade II* listed Charlwood Park Farmhouse (the current Bear and Bunny Nursery – Site 27), whilst baseline noise monitoring Location 11 is the Grade II* listed Rowley Farmhouse (Site 22). Baseline noise monitoring Locations 1 and 2 are close to the edge of the Charlwood Conservation Area (Site 397) and the listed buildings at Charlwood, whilst baseline noise monitoring Location 10 is close to the Grade II* listed Charlwood House (Site 23) and several Grade II listed buildings.
- 7.9.99 Table 14.9.5 presents the predicted 2032 ground noise levels (with designed-in mitigation) versus the predicted 2032 ground noise levels without the Project (the Do-Nothing scenario) at the twelve selected locations. The table shows the changes separately for night (23.00 – 07.00) and daytime (07.00 – 23.00) and for two modes of runway operation - 26 and 08. These modes relate to the directional use of the runways (a description of this is provided in Chapter 4: Existing Site and Operation). The noise levels are expressed in dB as $L_{Aeq, T}$ dB, which is a single figure used to describe a sound that varies over a given time period.
- 7.9.100 It should be noted that in the assessment provided below with regard to specific properties and areas, the magnitude of impact and significance of effect may differ from the assessment presented within Chapter 14: Noise and Vibration, as these two assessments are not looking at the same receptors. The receptor in this chapter in each case is the historic building or area, whilst in Chapter 14: Noise and Vibration the receptors are the people within the building or area.
- 7.9.101 The predicted increase in daytime ground noise $L_{Aeq, T}$ dB (2032 Project with mitigation versus 2032 baseline) at the Grade II* listed Charlwood Park Farmhouse is 2-4dB, whilst at the Grade II*

listed Rowley Farmhouse and also in the vicinity of the Grade II* listed Charlwood House and the nearby Grade II listed buildings the predicted increase is 0-1dB. The magnitude of impact on each of these heritage assets has been assessed as no change, with the consequent significance of effect in each case being **no change**.

- 7.9.102 The predicted increase in daytime ground noise $L_{Aeq, T}$ dB (2032 Project with mitigation versus 2032 baseline) at baseline noise monitoring Locations 1 and 2 is 2-5dB, and these locations are considered to be representative of the Charlwood Conservation Area. There are three heritage assets of high sensitivity or value at Charlwood, comprising the Grade I listed Church of St Nicholas (Site 14), along with The Manor House (Site 33) and the Providence Chapel (Site 36), both of which are listed at Grade II*. Both the listed Church of St Nicholas (Site 14) and the Providence Chapel (Site 36) are classed as noise-sensitive heritage assets using the criteria established for the assessment of impacts arising from air noise change (Temple Group and Cotswold Archaeology, 2014). The magnitude of impact on each of the three heritage assets of high sensitivity or value at Charlwood has been assessed as negligible and long-term. The consequent significance of effect in respect of these three heritage assets would be **minor adverse**, which is not significant in terms of the EIA regulations.
- 7.9.103 The Charlwood Conservation Area is a heritage asset of medium sensitivity or value, as are the 33 Grade II listed buildings within and adjacent to the Conservation Area (and within the defined study area – see Figure 7.6.2). As described above, the magnitude of impact on each of these heritage assets has been assessed as negligible and long-term, with the consequent significance of effect in each case being assessed as **negligible adverse**. This is not significant in terms of the EIA Regulations.

Road Traffic Noise

- 7.9.104 The results of the road traffic noise modelling for 2032 are presented in Chapter 14: Noise and Vibration. This modelling has focused on the changes around the North and South Terminal Roundabouts, but also reports changes on the wider network.
- 7.9.105 The results of the modelling of 2032 traffic noise are shown on Figure 14.9.33, which shows the predicted traffic noise with the Project (and the designed-in noise mitigation) versus the predicted 2032 baseline without the Project (ie the Do-Nothing scenario).
- 7.9.106 The Grade I listed Church of St Bartholomew located on Church Road, Horley (Figure 7.6.2, Site 16) would experience a reduction in road traffic noise of between 0-1dB, and this applies to the other listed buildings in the vicinity of the church. A small part of the western side of Church Road (Horley) Conservation Area at Horley (Figure 7.6.1, Site 16) would experience an increase in road traffic noise of 0-1dB, whilst the greater part of this conservation area would experience a reduction in road traffic noise of between 0-1dB. The nearby Massetts Road Conservation Area (Figure 7.6.2, Site 398) would similarly experience a reduction in road traffic noise of 0-1dB.
- 7.9.107 The Grade II listed Edgeworth House and Wing House in the eastern side of the airport and now part of the Courtyard by Marriot hotel (Figure 7.6.2, Sites 133 and 134) would experience an increase in road traffic noise of 0-1dB. Several other Grade II listed buildings located to the north-east of the airport would also experience an increase in road traffic noise of 0-1dB, including The Orchard Cottage (Site 80), Fishers Cottage and The Barn (Site 320), Inholms Farm House (Site 75) and Yew Tree Cottage (Site 76).

- 7.9.108 These predicted changes in road traffic noise are all rated as negligible in the assessment of noise effects in the area as reported in Chapter 14 and would not result in any harmful effect on the significance of any heritage asset. The magnitude of impact and significance of effect would therefore be **no change**.

Further Mitigation

- 7.9.109 It may be possible for appropriate mitigation (see paragraph 7.8.3) to be incorporated into the methodology for the establishment of the construction compound north of Longbridge Roundabout, and the land at Car Park B if this area is required for environmental mitigation, such that the magnitude of impact would be reduced to negligible.

Significance of Effect

- 7.9.110 The consequent significance of effect in respect of the establishment of the construction compound north of Longbridge Roundabout could be up to **minor adverse** (high sensitivity remains) or **negligible** (medium sensitivity remains), which are not significant in terms of the EIA Regulations. If the appropriate mitigation is not possible, a programme of further archaeological investigation would be undertaken in order to further define and offset the adverse effect.

Future Monitoring

- 7.9.111 No future monitoring is proposed with regard to any effects on the historic environment during this phase of the Project.

2033-2038

New Hangar

- 7.9.112 This element of the Project would be up to 32 metres high. The construction and operation of the new hangar would not affect the significance of any heritage asset as a result of change within its setting. The location is almost wholly within previously developed land which has been subject to previous archaeological investigation; there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.

Pier 7

- 7.9.113 This element of the Project would be up to 18 metres high. The construction and operation of the new Pier 7 would not affect the significance of any heritage asset as a result of change within its setting. The location is almost wholly within previously developed land which has been subject to previous archaeological investigation; there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.

Multi-storey Car Park Y

- 7.9.114 This element of the Project would be up to 27 metres high. The construction and operation of multi-storey car park Y would not affect the significance of any heritage asset as a result of change within its setting. Previous disturbance associated with the construction of the car park Y underground water treatment and runoff storage facility is likely to have removed any buried archaeological remains that may have been present here and this is regarded as an area of low archaeological potential (Figure 7.6.5). The magnitude of impact and significance of effect would therefore be **no change**.

Autonomous Vehicle Stations at North and South Terminals

- 7.9.115 These elements of the Project would be two storeys in height. The construction and operation of the new hangar would not affect the significance of any heritage asset as a result of change within its setting. The locations are wholly within previously developed land which has been subject to previous archaeological investigation; there would be no impact on buried archaeological remains. The magnitude of impact and significance of effect would therefore be **no change**.

Flood Compensation Area – Gatwick Stream

- 7.9.116 A flood compensation area is proposed in the south eastern part of the Project site, south of the Crawley Sewage Treatment Works and east of the Gatwick Stream. Geophysical survey carried out within part of the area with regard to the Project identified considerable previous disturbance, including that associated with the construction of the Flood Storage (Control) Reservoir a few years ago.
- 7.9.117 The works would involve lowering existing ground levels up to approximately 5 metres. Some of this land was archaeologically investigated ahead of the construction of the Flood Storage (Control) Reservoir, along with much of the land immediately to the west. Material of Upper Palaeolithic, Mesolithic, Iron Age, Roman and medieval date was recovered, including a number of Iron Age urned and unurned cremation burials with evidence of contemporary settlement. Archaeological activity clearly extended beyond those areas which were examined and into undisturbed land which now falls within the area required for flood storage as part of the Project.
- 7.9.118 Further investigation of the potential archaeological remains in this area is required in order to understand their date, nature, extent and significance. Based on the result of the previous archaeological work in the vicinity, buried remains within the land required for the Project are likely to be of medium sensitivity or value, however this would be confirmed by the proposed investigation. Ground reduction to create a flood storage reservoir would result in a high magnitude of impact and would be permanent. The consequent significance of effect would be up to **major adverse**, which is significant in terms of the EIA Regulations. Additional archaeological investigation would be undertaken as appropriate, but this would be part of the process of ‘offsetting’ harm rather than avoiding or reducing impacts.
- 7.9.119 The establishment of the flood compensation area east of Gatwick Stream would result in a change to the character of the historic landscape in this area. This is recorded in the Sussex Historic Landscape Characterisation (HLC) as Character Type ‘Informal Fieldsapes’ (see Figure 4.1.4 in Appendix 7.6.1: Historic Environment Baseline Report). This Type is relatively common in Sussex, but slightly less common in the vicinity of Gatwick due to the amount of development in the area (including the airport). The flood compensation area would occupy part of a larger block of this Type which extends west. The historic landscape character is considered to be of low sensitivity or value, and the establishment of the flood compensation area would represent a negligible magnitude of impact as the field boundaries would remain intact. The consequent significance of effect has been assessed as **negligible**, which is not significant in EIA terms.

Air Noise

- 7.9.120 Figure 14.9.30 of this PEIR shows the predicted $L_{eq\ 16\ hr\ day}$ air noise contour areas for 2038. In all cases, noise contours are very similar to those predicted for 2032 (Figure 14.6.13). Detailed assessment of the 2033-2038 impacts and effects of air noise on heritage assets is not necessary

because the outcomes in all cases would be the same as for the 2032 impacts and effects reported above.

Ground Noise

- 7.9.121 Appendix 14.9.3 of this PEIR shows the predicted ground noise levels for 2038 with regard to the twelve monitoring locations. These ground noise levels are lower than those predicted for 2032 due to a larger proportion of next generation aircraft in the fleet. Detailed assessment of the 2038 impacts and effects of ground noise on heritage assets is not necessary because the outcomes in all cases would be the same as, or less than, the 2032 impacts and effects reported above.

Road Traffic Noise

- 7.9.122 Detailed assessment of the 2038 impacts and effects of road traffic noise on heritage assets is not necessary because the outcomes in all cases would be the same as, or less than, the 2032 impacts and effects reported above.

Further Mitigation

- 7.9.123 No further mitigation is proposed. Some archaeological investigation may be undertaken within the flood compensation area east of Gatwick Stream, but this would be part of the process of 'offsetting' harm rather than avoiding or reducing impacts.

Future Monitoring

- 7.9.124 No future monitoring is proposed with regard to any effects on the historic environment during this phase of the Project.

Design Year: 2038

Flood Compensation Area –Gatwick Stream

- 7.9.125 There are two Grade II listed buildings just to the south of this area, fronting onto Radford Road: Brookside (Figure 7.6.2, Site 157) and Radford Farmhouse (Site 192). They are both of medium sensitivity or value. Both of these have well-established mature vegetation to the rear of the properties, and there is no visual connection between the listed buildings and the land proposed for the flood compensation area. The impact of the operation of the flood storage area on the significance of these listed buildings would be no change. The consequent significance of effect would be **no change**, which is not significant in terms of the EIA Regulations.

Air Noise

- 7.9.126 Figure 14.9.34 of this PEIR shows the predicted Leq 16 hr day air noise contour areas for 2038. In all cases, noise contours are very similar to those predicted for 2032 (Figure 14.6.13). Detailed assessment of the 2033-2038 impacts and effects of air noise on heritage assets is not necessary because the outcomes in all cases would be the same as for the 2032 impacts and effects reported above.

Ground Noise

- 7.9.127 Appendix 14.9.3 of this PEIR gives predicted levels of ground noise in 2038 which are lower than or similar to those predicted for 2032. Detailed assessment of the 2038 impacts and effects of

ground noise on heritage assets is not necessary because the outcomes in all cases would be the same or less as for the 2032 impacts and effects reported above.

Road Traffic Noise

- 7.9.128 Road traffic noise impacts in 2038 will be similar to those in 2032 and so a separate assessment of impacts is not required.

Further Mitigation

- 7.9.129 No further mitigation is proposed.

Future Monitoring

- 7.9.130 No future monitoring is proposed with regard to any effects on the historic environment during this phase of the Project.

7.10. Potential Changes to the Assessment as a Result of Climate Change

- 7.10.1 As set out in the Future Baseline section (Section 7.6) there are unlikely to be any significant changes to the historic environment baseline as a result of climate change. Therefore, the assessment of effects set out above is unlikely to be affected by climate change.

7.11. Cumulative Effects

Zone of Influence

- 7.11.1 The zone of influence (Zol) for the historic environment has been identified based on the spatial extent of likely effects. The Zol is the same as the defined study area for the assessment of potential effects on designated heritage assets as a result of change within their setting, ie a zone extending 3 km from the Project site boundary.

Screening of Other Developments and Plans

- 7.11.2 The Cumulative Effect Assessment (CEA) takes into account the impact associated with the Project together with other developments and plans. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise undertaken as part of the 'CEA short list' of developments (see Appendix 19.4.1). Each development on the CEA long list has been considered on a case by case basis for scoping in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.
- 7.11.3 In undertaking the CEA for the Project, it is important to bear in mind that the likelihood of other developments and plans being constructed varies depending on how far along the planning process they are. For example, relevant developments and plans that are already under construction are likely to contribute to a cumulative impact with the Project (providing impact or spatial pathways exist), whereas developments and plans not yet approved or not yet submitted are less certain to contribute to such an impact, as some may not achieve approval or may not ultimately be built due to other factors. For this reason, all relevant development and plans considered cumulatively alongside the Project have been allocated into 'Tiers', reflecting their current stage within the planning and development process. Appropriate weight is therefore given to each Tier in the decision-making process when considering the potential cumulative

impact associated with the Project (eg it may be considered that greater weight can be placed on the Tier 1 assessment relative to Tier 2). Further details of the screening process for the inclusion of other developments and plans in the short list and a description of the Tiers are provided in Chapter 19: Cumulative Effects and Inter-relationships.

7.11.4 The specific developments scoped into the CEA for the historic environment and the Tiers into which they have been allocated, are outlined in Table 7.11.1. The developments included as operational in this assessment have been commissioned since the baseline studies for this Project were undertaken and as such were excluded from the baseline assessment. Full details of each of the developments are provided in Appendix 19.4.1 of this PEIR.

Table 7.11.1: List of Other Developments and Plans considered within CEA

Description of Development/Plan	Planning Phase	Distance from the Project	Date of Construction (if applicable)	Overlap with the Project?
Tier 3				
Horley Employment Park: Policy HOR9 of the adopted Reigate & Banstead Development Management Plan 2018-2027	Allocated	0 km	Not yet known	Not yet known

Cumulative Effects Assessment

7.11.5 A description of the significance of cumulative effects upon the historic environment arising from each identified impact is given below. The development identified in Table 7.11.1 would not result in cumulative effects on designated heritage assets as a result of change within their settings. This is due to the nature of the development and the distance between the development and any designated assets reviewed in relation to the Project.

Initial Construction Phase: 2024-2029

7.11.6 The proposed development of the Horley Employment Park, located on land to the west of Balcombe Road, is set out in Policy HOR9 'Horley Strategic Business Park' of the adopted Reigate and Banstead Development Management Plan 2018-2027. This area coincides with the proposed location of the surface access satellite contractor compound for the South Terminal. Under Policy HOR9 the site is allocated for a strategic business park of predominantly offices; a complementary range of commercial, retail and leisure facilities to serve and facilitate the main business use of the site; and at least five hectares of new high quality public open space, including parkland and outdoor sports facilities. Currently there are no details in terms of the timing of this development.

7.11.7 The Horley Employment Park development will be subject to a number of requirements and considerations including the following.

- The development must have regard to conserving the setting of Listed Buildings at Fishers Farm and the locally listed buildings at Bayhorne Farm and Bayhorne.
- The retention of important hedgerows will be encouraged as will retention of a buffer to the green corridor along Balcombe Road to retain the historic landscape character.

- 7.11.8 Taking into account the policy requirement above and that Policy NE9: Heritage Assets of the same planning document requires all development sites over 0.4 hectares to undertake an archaeological assessment (including field evaluation where appropriate), it is not anticipated that there would be any significant cumulative effects on buried archaeology.

2030-2032

- 7.11.9 No further cumulative effects have been identified.

2033-2038

- 7.11.10 No further cumulative effects have been identified.

Design Year: 2038

- 7.11.11 No further cumulative effects have been identified.

7.12. Inter-Related Effects

- 7.12.1 This chapter of the PEIR assesses the effects on historic environment resources including historic buildings and areas, historic landscape character and buried archaeological remains. There is an inter-relationship with other environmental topics including landscape, ecology, traffic, noise (air and ground noise) and water. Whilst this chapter assess effects on historic landscape, effects on landscape character and visual amenity are considered in Chapter 8: Landscape, Townscape and Visual Resources.
- 7.12.2 This chapter assesses the effects of traffic and noise (ground and air noise) on the significance of heritage assets, however the environmental effects of traffic and noise are considered in Chapter 12: Traffic and Transport and Chapter 14: Noise and Vibration respectively.
- 7.12.3 This chapter assesses the effects of environmental mitigation on heritage assets and buried archaeological remains, however the design of ecological, landscape and flood risk mitigation is considered in Chapter 8: Landscape, Townscape and Visual Resources, Chapter 9: Ecology and Nature Conservation, and Chapter 11: Water Environment.
- 7.12.4 Further information on inter-related effects is provided in Chapter 19: Cumulative Effects and Inter-relationships.

7.13. Summary

Initial Construction Phase 2024-2029

- 7.13.1 During this phase of the Project the majority of contractor compounds would be established. Where the proposed compounds are located on previously developed land (eg the main contractor compound), the significance of effect on buried archaeological remains would be negligible as the archaeological remains are likely to have already been lost or badly damaged by earlier development. In the proposed compound locations that have not been previously developed, there is the potential for palaeochannels or buried archaeological remains to exist. Where possible, a programme of archaeological investigation is planned to confirm the date, nature and extent of any archaeological remains, and the results will be reported in the ES. The impact on buried archaeological remains as a result of the establishment of contractor

compounds on land that has not been previously developed could result in a significance of effect up to **major adverse**.

- 7.13.2 Appropriate mitigation measures may be incorporated into the establishment of the contractor compounds to avoid or reduce damage to the buried archaeological remains. With these measures in place, the significance of effect would reduce to **negligible to minor adverse**. Where it is not possible to apply any mitigation measures, the effects would be offset through a programme of further archaeological investigation.
- 7.13.3 The works required to establish contractor compounds would not significantly affect any deposits of geoarchaeological interest as such deposits would be located at a greater depth below current ground level.
- 7.13.4 Also, during this phase of the Project, the flood compensation measures would be implemented at Museum Field, land east of Museum Field and at car park X. These works would involve the lowering of the ground levels. The significance of the effect on buried archaeological remains at Museum Field and land to the east would be up to **major adverse** and **minor adverse** (respectively), while an up to **major adverse** effect is predicted with regard to potential palaeochannels at car park X. The effect would be offset by a programme of further archaeological investigation.
- 7.13.5 The placement of spoil and subsequent construction of the decked car park at Pentagon Field could lead to impacts on buried archaeological remains resulting in a significance of effect up to **moderate adverse**. This effect would be offset through a programme of further archaeological investigation. There would also be a **minor adverse** effect on the character of the historic landscape at Pentagon Field.
- 7.13.6 The demolition of the former air traffic control tower would represent a **minor adverse** effect that would be offset by recording of the building prior to its demolition.
- 7.13.7 Environmental mitigation is proposed at parcels of land surrounding Museum Field where planting of trees and hedgerows would be undertaken. Where possible, a programme of archaeological investigation is planned to confirm the date, nature and extent of any archaeological remains, and the results would be reported in the ES. The impact on buried archaeological remains as a result of the environmental mitigation could result in a significance of effect up to **major adverse**.
- 7.13.8 Appropriate mitigation measures may be incorporated into the establishment of the environmental mitigation land surrounding Museum Field to avoid or reduce damage to the buried archaeological remains. With these measures in place, the significance of effect would be **negligible to minor adverse**. Where it is not possible to apply any mitigation measures, the effects would be offset by a programme of further archaeological investigation.
- 7.13.9 There may also be up to **moderate adverse** effects resulting from impacts on potential buried archaeological remains as a result of the construction of the replacement 'Purple Parking' at the western end of Crawter's Field. These effects would be offset by a programme of archaeological investigation.
- 7.13.10 The relocation of Pond A and the diversion of the River Mole could impact on possible palaeochannels leading to an effect of up to **moderate adverse** significance. This effect would be offset by a programme of geoarchaeological investigation.

2030-2032

- 7.13.11 During this phase there would be **minor adverse** effects resulting from changes within the settings of the Grade II* listed Charlwood Park Farmhouse, several Grade II listed buildings at Charlwood and the Conservation Area at Charlwood as a result of the relocation of the CARE facility.
- 7.13.12 There would be **minor adverse** effects on the significance of the Grade I listed Church of St Nicholas (Charlwood), also The Manor House (Charlwood), Providence Chapel (Charlwood), and **negligible adverse** effects on the significance of the Conservation Area and several Grade II listed buildings at Charlwood as a result of an increase in ground noise.
- 7.13.13 In addition, there could be a **major adverse** effect arising from impacts on buried archaeological remains during the establishment of the surface access satellite compound north of Longbridge Roundabout and also any environmental mitigation works required within the northern part of Car Park B. Appropriate mitigation measures may be incorporated into the construction works here to avoid or reduce damage to the buried archaeological remains. With these measures in place, the significance of effect would be up to **minor adverse**. Where it is not possible to apply any mitigation measures, the effects would be offset by a programme of further archaeological investigation. There would also be an effect of **minor adverse** significance as a result of the change within the setting of the Church Lane (Horley) Conservation Area.

2033-2038

- 7.13.14 The construction of the flood storage area east of Gatwick Stream would lead to the complete loss or substantial damage of buried archaeological remains resulting from the reduction of ground levels. This would result in up to a **major adverse** effect which would be offset through a programme of further archaeological investigation.

Design Year 2038

- 7.13.15 No effects are considered likely during the operational phase of the Project.

Next Steps

- 7.13.16 A programme of further archaeological investigation will be undertaken ahead of production of the final ES chapter. This will include intrusive works such as trial trenching and/or test-pitting, as well as further non-intrusive works (eg further geophysical survey) as appropriate. The results of any further archaeological investigations will be considered within the ES. Examination will also be made of the results of any relevant Ground Investigation (GI) surveys.

Table 7.13.1: Summary of Effects

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
Construction Phase 2024-2029 (Construction Effects up to first opening of Northern Runway)							
Buried archaeological remains (main contractor compound)	Negligible	Potential loss of or damage to remains from establishment of compound	Permanent	Negligible	Negligible	Not significant	
Setting of heritage assets (main contractor compound)	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	
Buried archaeological remains (airfield satellite compound)	Up to Medium (if any palaeochannels present)	Potential loss of or damage to remains from establishment of compound	Permanent	Negligible	Negligible	Not significant	If the methodology for the establishment of the airfield satellite compound has the potential to impact on buried geoarchaeological remains the effect would be offset through a programme of investigation.
Setting of heritage assets (airfield satellite compound)	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	
Buried archaeological remains (surface access)	Up to Medium	Potential loss or damage to remains	Permanent	Up to High	Up to Major Adverse	Significant	Date, nature and extent of any buried archaeological remains

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
works contractor compound – South Terminal roundabout – land north of the M23 motorway spur)		from establishment of compound					not yet ascertained. Proposed programme of archaeological investigation should establish receptor sensitivity. Appropriate mitigation may be implemented during establishment of compound and this would reduce the magnitude of impact. If this is not possible then the effect could be offset through a programme of archaeological investigation.
Setting of heritage assets (surface access works contractor compound – South Terminal roundabout – land north of the M23 motorway spur)	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	
Historic landscape character (surface	Low	Change to historic landscape character	Long term	Low	Negligible	Not significant	Impact is fully reversible.

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
access works contractor compound – South Terminal roundabout – land north of the M23 motorway spur)							
Buried archaeological remains (surface access works contractor compound – North Terminal roundabout	Negligible	Potential loss or damage to remains from establishment of compound	Permanent	Negligible	Negligible	Not significant	
Setting of heritage assets (surface access works contractor compound – North Terminal roundabout	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	
Buried archaeological remains (ground lowering – Museum Field)	Up to Medium	Complete loss or substantial damage resulting from reduction in ground level	Permanent	Up to High	Up to Major Adverse	Significant	Date, nature and extent of any buried archaeological remains not yet ascertained. Effect offset through programme of archaeological investigation.
Buried archaeological remains (flood	Up to Medium	Complete loss or substantial damage	Permanent	Low	Minor Adverse	Not significant	Date, nature and extent of any buried archaeological remains

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
compensation area east of Museum Field)		resulting from reduction in ground level					not yet ascertained. Effect offset through programme of archaeological investigation.
Setting of heritage assets (flood compensation area – Museum Field)	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	
Historic landscape character (Museum Field)	Low	Change to historic landscape character	Permanent	Negligible	Negligible	Not significant	
Deposits of geoarchaeological interest (flood compensation area– Car park X	Low	Complete loss or substantial damage resulting from ground reduction	Permanent	Up to High	Up to Moderate Adverse	Significant	Date, nature and extent of any buried geoarchaeological remains not yet ascertained. Effect offset through programme of investigation.
Setting of heritage assets (flood compensation area – Car park X)	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	
Setting of heritage assets (Car parks X and V)	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	
Buried archaeological remains (Pentagon Field)	Up to Medium	Loss of or damage resulting from placement of spoil	Permanent	High	Up to Major Adverse	Significant	Date, nature and extent of any buried archaeological remains not yet ascertained. Effect

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
		and construction of the decked car park					offset through programme of archaeological investigation.
Setting of heritage assets (decked car park Pentagon Field)	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	
Historic landscape character (Pentagon Field)	Low	Change to historic landscape character	Permanent	High	Minor adverse	Not significant	
Buried archaeological remains (water treatment and runoff storage facility – car park Y)	N/A	Complete loss or substantial damage resulting from ground reduction.	N/A	No change	No change	Not significant	
Setting of heritage assets (water treatment and runoff storage facility – car park Y)	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	
Buried archaeological remains (works to northern runway, new and realigned taxiways, new aircraft stands, reconfiguration of existing	Negligible	Loss of or damage resulting from construction works	Permanent	Negligible	Negligible	Not significant	

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
aircraft stands, Virgin Hangar pavement works, relocation of Rendezvous Point North, Pumping Station 2a)							
Setting of heritage assets (works to northern runway, new and realigned taxiways, new aircraft stands, reconfiguration of existing aircraft stands, Virgin Hangar pavement works, relocation of Rendezvous Point North, Pumping Station 2a)	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	
Buried archaeological remains (relocation of fire training ground)	Negligible	Loss of or damage resulting from relocation	Permanent	Negligible	Negligible	Not significant	
Setting of heritage assets (relocation of fire training ground)	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
Former air traffic control tower	Low	Complete loss (demolition)	Permanent	High	Minor Adverse	Not significant	Offset through programme of building recording prior to demolition
Buried archaeological remains (environmental mitigation land surrounding Museum Field)	Up to Medium	Planting, scrapes, replacement habitats etc	Permanent	High	Up to Major Adverse	Significant	Date, nature and extent of any buried archaeological remains not yet ascertained. Proposed programme of archaeological investigation should establish receptor sensitivity. Appropriate mitigation may be implemented during establishment of compound. and this would reduce the magnitude of impact. If this is not possible then the effect could be offset through a programme of archaeological investigation.
Setting of heritage assets (Multi Storey Car Park J, South Terminal IDL Extension and Forecourt,	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
new hotel at the building compound adjacent to the car rental site, Satellite Airport Fire Service Facility, Airfield Surface Transport Facility, Decked Car Park North Terminal Long Stay Phase 1, North Terminal IDL Extension and Forecourt and Baggage Reclaim Facility Extension, ITTS improvements)							
Buried archaeological remains (Multi Storey Car Park J, South Terminal IDL Extension and Forecourt, new hotel at the building compound adjacent to the car rental site, Satellite Airport Fire Service Facility, Airfield	Negligible	Loss of or damage resulting from construction works	Permanent	No change	No change	Not significant	

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
Surface Transport and Grounds Maintenance Facility, Decker Car Park North Terminal Long Stay Phase 1, North Terminal IDL Extension and Forecourt and Baggage Reclaim Facility Extension, ITTS improvements)							
Buried archaeological remains (replacement 'Purple Parking' at western end of Crawter's Field)	Low	Complete loss or substantial damage resulting from construction of surface car park	Permanent	High	Up to Moderate Adverse	Significant	Date, nature and extent of any buried archaeological remains not yet ascertained. Effect offset through programme of archaeological investigation.
Deposits of geoarchaeological interest (relocation of Pond A and River Mole Diversion)	Up to Medium	Complete loss or substantial damage resulting from construction of River Mole Diversion	Permanent	Medium	Moderate Adverse	Significant	Date, nature and extent of any buried geoarchaeological remains not yet ascertained. Effect offset through programme of investigation if necessary.

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
Setting of heritage assets (relocation of Pond A and River Mole Diversion)	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	
Extension to Dog Kennel Pond	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	
2030-2032 (Construction and Operational Effects)							
Grade II* listed Charlwood Park Farmhouse	High	Change within setting (relocated CARE Facility Option 2)	Permanent	Low	Minor Adverse	Not significant	
Other listed buildings and Conservation Area at Charlwood	High to Medium	Change within setting (relocated CARE facility Option 2)	Permanent	Negligible	Minor Adverse	Not significant	
Setting of heritage assets (replacement Motor Transport Facility, North Terminal baggage hall extension, Decked Car Park North Terminal Long Stay Phase 2,	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
North Terminal Hotel at car park Y, South Terminal Hotel at car park H, multi-storey car park H and new offices, Pumping Station 7a, Substation north of Pier 7, South Terminal Roundabout Improvements, North Terminal Roundabout Improvements, Longbridge Roundabout Improvements)							
Buried archaeological remains (replacement Motor Transport Facility, North Terminal baggage hall extension, Decked Car Park North Terminal Long Stay Phase 2, North Terminal Hotel at car park Y, South	Negligible	Loss of or damage resulting from construction works	Permanent	No change	No change	Not significant	

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
Terminal Hotel at car park H, multi-storey car park H and new offices, Pumping Station 7a, Substation north of Pier 7, South Terminal Roundabout Improvements)							
Buried archaeological remains (Car Park B north of A27 Airport Way)	Up to High	Potential loss or damage to remains from environmental mitigation	Permanent	Up to High	Up to Major Adverse	Significant	Date, nature and extent of any buried archaeological remains not yet ascertained. Appropriate mitigation may be implemented ahead of the environmental mitigation works and this would reduce the magnitude of impact. If this is not possible then the effect could be offset through a programme of archaeological investigation.
Buried archaeological remains (surface access	Up to High	Potential loss or damage to remains	Permanent	Up to High	Up to Major Adverse	Significant	Date, nature and extent of any buried archaeological remains

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
works contractor compound – Longbridge Roundabout)		from establishment of compound					not yet ascertained. Proposed programme of archaeological investigation should establish receptor sensitivity. Appropriate mitigation may be implemented during establishment of compound and this would reduce the magnitude of impact. If this is not possible then the effect could be offset through a programme of archaeological investigation.
Church Lane (Horley) Conservation Area	Medium	Change within setting (surface access works contractor compound Longbridge Roundabout)	Medium term	Low	Minor adverse	Not significant	Proposed compound location is partially within the Conservation Area. Impact is fully reversible.

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
Setting of other heritage assets (surface access works contractor compound – Longbridge Roundabout)	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	
Historic landscape character (surface access works contractor compound – Longbridge roundabout)	Low	Change to historic landscape character	Long term	Low	Negligible	Not significant	Impact is fully reversible.
Grade I listed Church of St Nicholas (Charlwood)	High	Change within setting – ground noise	Long-term	Negligible	Minor Adverse	Not significant	
Grade II* listed The Manor House (Charlwood)	High	Change within setting – ground noise	Long-term	Negligible	Minor Adverse	Not significant	
Grade II* listed Providence Chapel (Charlwood)	High	Change within setting – ground noise	Long-term	Negligible	Minor Adverse	Not significant	
Other listed buildings and Conservation Area at Charlwood	Medium	Change within setting – ground noise	Long-term	Negligible	Negligible Adverse	Not significant	

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
2033-2038 (Construction and Operational Effects)							
Setting of heritage assets (New Hangar, Pier 7, Multi-storey car park Y, North and South Terminal autonomous vehicle stations)	N/A	Effect on significance of heritage asset	N/A	No change	No change	Not significant	
Buried archaeological remains (New Hangar, Pier 7, Multi-storey car park Y, North and South Terminal autonomous vehicle stations)	Negligible	Loss of or damage resulting from construction works	Permanent	No change	No change	Not significant	
Grade II listed Edgeworth House and Wing House	Medium	Change within setting (decked car park Pentagon Field, South Terminal Hotel, car park H, office buildings)	Permanent	No change	No change	Not significant	
Grade II listed Old Cottage and Lilac Cottage	Medium	Change within setting (decked car	Permanent	No change	No change	Not significant	

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
		park (Pentagon Field)					
Grade II* Charlwood Park Farmhouse (Bear and Bunny)	High	Change within setting (decked car park North Terminal long stay)	Permanent	No change	No change	Not significant	
Buried archaeological remains (flood compensation area east of Gatwick Stream)	Up to Medium	Complete loss or substantial damage resulting from ground reduction	Permanent	High	Up to Major Adverse	Significant	Date, nature and extent of any buried archaeological remains not yet ascertained. Effect offset through programme of archaeological investigation.
Historic landscape character (flood compensation area east of Gatwick Stream)	Low	Change to historic landscape character	Permanent	Negligible	Negligible	Not significant	
Grade I listed Church of St Nicholas (Charlwood)	High	Change within setting – ground noise	Long-term	Negligible	Minor Adverse	Not significant	
Grade II* listed The Manor House (Charlwood)	High	Change within setting – ground noise	Long-term	Negligible	Minor Adverse	Not significant	

Receptor	Receptor Sensitivity	Description of Impact	Short / medium / long term / permanent	Magnitude of Impact	Significance of Effect	Significant / not significant	Notes
Grade II* listed Providence Chapel (Charlwood)	High	Change within setting – ground noise	Long-term	Negligible	Minor Adverse	Not significant	
Other listed buildings and Conservation Area at Charlwood	Medium	Change within setting – ground noise	Long-term	Negligible	Negligible Adverse	Not significant	
Design Year: 2038 (Operational Effects)							
Grade II Brookside and Radford Farmhouse	Medium	Effect on significance of heritage asset	Permanent	No change	No change	Not significant	

7.14. References

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7.15. Glossary

Table 7.15.1: Glossary of Terms

Term	Description
AHAP	Areas of High Archaeological Potential
ANA	Archaeological Notification Area
CARE	Central Area Recycling Enclosure
CEA	Cumulative Effects Assessment
CoCP	Code of Construction Practice
CPRE	Campaign for the Protection of Rural England
CSAI	County Site of Archaeological Interest
dB	Decibel
DBA	Desk Based Assessment
DCO	Development Consent Order
DMRB	Design Manual for Roads and Bridges
EIA	Environmental Impact Assessment
ES	Environmental Statement
GI	Ground Investigation
HER	Historic Environment Records
HLC	Historic Landscape Characterisation
ILS	Instrument Landing System
LiDAR	Light Detecting and Ranging
NHLE	National Heritage List for England
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
NPS	National Policy Statement
PEIR	Preliminary Environmental Information Report
ZoI	Zone of Influence
ZTV	Zone of Theoretical Visibility