

14. Historic Environment

14.1 Introduction

- 14.1.1 This chapter of the Environmental Statement (ES) assesses the likely significant effects of the Proposed Development with reference to the Historic Environment. The Historic Environment is defined as:

'All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora'.¹

- 14.1.2 The chapter should be read in conjunction with **Chapter 2: Description of the Proposed Development** and with reference to relevant parts of other chapters including **Chapter 7: Noise and Vibration**, where common receptors have been considered and where there is an overlap or relationship between the assessments of effects.

14.2 Limitations of this assessment

- 14.2.1 This assessment is based on visits to the application site, desk-based research, field surveys and the results of previously published archaeological investigations within the application site and study area.
- 14.2.2 A field survey has been completed within the site of the proposed Silver Zone Car Park Extension (Phase 2) as this comprises a limited area of new land take. This has involved the completion of geophysical and trial trenching. However, much of the application site comprises previously developed land and so field survey of this type have not been completed elsewhere. There is a relatively large number of identified records of known, potential or former heritage assets within the application site, though there have only been a relatively limited number of previous archaeological investigations. However, given the nature of the existing built form of the application site, it is reasonable to assume that there will have been considerable disturbance to any archaeological remains which may have been present within the footprint of the Proposed Development outside of the Silver Zone Car Park Extension (Phase 2); therefore, the data available is considered to be reasonable and sufficient to support this assessment.

14.3 Relevant legislation, planning policy and technical guidance

Legislative context

- 14.3.1 The following legislation is relevant to the assessment of the effects on Historic Environment receptors:
- *Ancient Monuments and Archaeological Areas Act (1979)*² sets out that sites assessed to be of national importance are required to be compiled in a Schedule of Monuments. These sites are accorded statutory protection and Scheduled Monument Consent is required before any works

¹ Ministry of Housing, Communities and Local Government (2018). National Planning Policy Framework, [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/728643/Revised_NPPF_2018.pdf [Checked 24/07/2018].

² Ancient Monuments and Archaeological Areas Act 1979, [online]. Available at: <https://www.legislation.gov.uk/ukpga/1979/46> [Checked 31/07/2018].

are carried out which would have the effect of demolishing, destroying, damaging, removing, repairing, altering, adding to, flooding or covering up a Scheduled Ancient Monument. This act also provided for the designation of Areas of Archaeological Interest in which statutory provisions for access to construction sites for the purpose of carrying out archaeological works apply.

- *The Planning (Listed Buildings and Conservation Areas) Act (1990)*³ provides for the compilation of a list of buildings of special architectural or historical interest, which are accorded statutory protection. Section 66 of this act requires planning authorities to have special regard for the desirability of preserving listed buildings and their settings, and any features of special architectural or historic importance they possess. Under this act, areas of special architectural or historic interest can be designated as conservation areas, the character or appearance of which it is desirable to preserve or enhance. Section 72 of this act requires Planning Authorities to have special regard to the preservation of the character of conservation areas.

Planning policy context

14.3.2 There are a number of policies and guidance documents at the national and local level that are relevant to the Proposed Development's ES. In addition to policy referenced in **Chapter 5: Legislative and Policy Overview**, policy directly applicable to Historic Environment is listed in **Table 14.1**.

Table 14.1 Planning policy issues relevant to Historic Environment

Policy reference	Implications
National Planning Policy Framework (NPPF) 2018¹	
Paragraph 189	<p>In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary.</p> <p>Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.</p>
Paragraph 190	The particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) should be identified and assessed, taking account of the available evidence and any necessary expertise. This is in order to avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposal.
Paragraph 193	When considering the impact of a proposal on a designated heritage asset, great weight should be given to the asset's conservation, irrespective of the degree of potential harm to its significance. The more significant the asset the greater the weight should be.
Paragraph 194	Any harm or loss to a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification. Substantial harm to or loss of:

³ Planning (Listed Buildings and Conservation Areas) Act 1990, [online]. Available at: <https://www.legislation.gov.uk/ukpga/1990/9/contents> [Checked 31/07/2018].

Policy reference	Implications
	<ul style="list-style-type: none"> Grade II listed buildings, or Grade II registered parks or gardens, should be exceptional; and Scheduled Monuments (SMs), protected wreck sites, registered battlefields, Grade I and II* listed buildings, Grade I and II* registered parks and gardens, and World Heritage Sites (WHS), should be wholly exceptional**. <p>** Non-designated heritage assets of archaeological interest, that are demonstrably of equivalent significance to Scheduled Monuments, should be considered subject to the policies for designated heritage assets.</p>
Paragraph 196	Where development will lead to less than substantial harm to the significance of the designated asset, the harm should be weighed against the public benefit of the proposal.
Paragraph 197	The effect of a proposal on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.
Paragraph 199	Local planning authorities should require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted.
West of England Joint Spatial Plan 2017⁴	
Policy 5 - Place shaping principles	Requires protection and enhancement of the Historic Environment.
North Somerset Council Core Strategy January 2017⁵	
CS5 - Landscape and the historic environment	<p>Policy states: <i>"The council will conserve the historic environment of North Somerset, having regard to the significance of heritage assets such as conservation areas, listed buildings, buildings of local significance, scheduled monuments, other archaeological sites, registered and other historic parks and gardens.</i></p> <p><i>Particular attention will be given to aspects of the historic environment which contribute to the distinctive character of North Somerset, such as the Victorian townscapes and seafronts in Weston and Clevedon."</i></p>
North Somerset Council Development Management Policies: Sites and Policies Plan Part 1 July 2016⁶	
DM4 - Listed buildings	Development will be expected to preserve and where appropriate enhance the character, appearance and special interest of the listed building and its setting. Opportunities will be sought to repair or remove harm caused from past unsympathetic alterations and additions.
DM6 - Archaeology	<p>Archaeological interests will be fully taken into account when determining planning applications.</p> <p>Where an initial assessment indicates that the development site includes or has the potential to include heritage assets with archaeological interests, the council will seek an archaeological assessment and field evaluation.</p>

⁴ West of England Partnership (2017). West of England Joint Spatial Plan Publication Document, [online]. Available at: <https://www.jointplanningwofe.org.uk/consult/ti/JSPPublication/consultationHome> [Checked 17/05/18].

⁵ North Somerset Council (January 2017). Core Strategy, [online]. Available at: <https://www.n-somerset.gov.uk/wp-content/uploads/2015/11/Core-Strategy-adopted-version.pdf> [Checked 16/04/18].

⁶ North Somerset Council (July 2016). Sites and Policies Plan Part 1: Development Management Policies, [online]. Available at: <https://www.n-somerset.gov.uk/wp-content/uploads/2015/11/Sites-and-Policies-Plan-Part-1-Development-Management-Policies-July-2016.pdf> [Checked 17/05/18].

Policy reference	Implications
	States that the preference is for archaeology to be preserved 'in situ' but where the council decides that it is not necessary to preserve remains 'in situ', developers will be required to make appropriate and satisfactory provision for the excavation and recording of the remains before development commences.
DM7 - Non-designated heritage assets	When considering proposals involving non-designated heritage assets the council will take into account their local significance and whether they warrant protection where possible from removal or inappropriate change including harm to their setting.

Technical guidance

14.3.3 **Table 14.2** lists guidance documents which are relevant to the baseline data collection and assessment of the effects on Historic Environment receptors.

Table 14.2 Technical guidance relevant to the Historic Environment

Guidance	Relevance
Historic England Guidance	
Good Practice in Planning Advice 2 (GPA 2) <i>Managing Significance in Decision-Taking in the Historic Environment</i> 2015 ⁷	Provides information on good practice in assessing the significance of heritage assets.
Good Practice in Planning Advice 3 (GPA 3) <i>The Setting of Heritage Assets</i> 2 nd Edition 2017 ⁸	Sets out guidance on managing change within the settings of heritage assets.
<i>Conservation Principles</i> 2008 ⁹	Sets out principles for the assessment of heritage significance and its management.
Advice Note 10 <i>Listed Buildings and Curtilage</i> 2018 ¹⁰	Provides worked examples to assist understanding of how to define the curtilage of a listed building.
Advice Note 2: <i>Making Changes to Heritage Assets</i> 2016 ¹¹	Provides guidance on the application of NPPF policies to alterations to heritage assets.
Professional Guidance	
Chartered Institute for Archaeologists (CIfA) <i>Standard and guidance for archaeological desk-based assessment</i> 2017 ¹²	Sets out standards for the production of archaeological desk-based assessments.

⁷ Historic England (2015). *Managing Significance in Decision-Taking in the Historic Environment*, [online]. Available at: <https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking/> [Checked 08/06/2018].

⁸ Historic England (2017). *The Setting of Heritage Assets* (Second Edition), [online]. Available at: <https://content.historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/heag180-gpa3-setting-heritage-assets.pdf> [Checked 01/08/2018].

⁹ English Heritage (2008). *Conservation Principles, Policies and Guidance*. Available at: <https://content.historicengland.org.uk/images-books/publications/conservation-principles-sustainable-management-historic-environment/conservationprinciplespoliciesguidanceapr08web.pdf> [Checked 14/06/2018].

¹⁰ Historic England (2018). *Listed Buildings and Curtilage: Historic England Advice Note 10*, [online]. Available at: <https://historicengland.org.uk/images-books/publications/listed-buildings-and-curtilage-advice-note-10/> [Checked 01/08/2018].

¹¹ Historic England (2016). *Making Changes to Heritage Assets: Historic England Advice Note 2*, [online]. Available at: <https://historicengland.org.uk/images-books/publications/making-changes-heritage-assets-advice-note-2/> [Checked 01/8/2018].

¹² CIfA (2017). *Standard and Guidance for Historic Environment Desk Based Assessment*, [online]. Available at: https://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_3.pdf [Checked 01/08/2018].

Guidance	Relevance
Chartered Institute for Archaeologists (CIfA) <i>Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment</i> 2014 ¹³	Sets out standards for the provision of consultancy advice in the historic environment.
Chartered Institute for Archaeologists (CIfA) <i>Standard and guidance for archaeological field evaluation</i> 2014 ¹⁴	Sets out standards for archaeological evaluation.
Chartered Institute for Archaeologists (CIfA) <i>Standard and guidance for archaeological geophysical survey</i> 2014 ¹⁵	Sets out standards for archaeological geophysical survey.
English Heritage 2008 <i>Geophysical Survey in Archaeological Field Evaluation</i> ¹⁶	Sets out standards for archaeological geophysical survey.
Temple and Cotswold Archaeology for English Heritage 2014 <i>Aviation Noise Metric - Research on the Potential Noise Impacts on the Historic Environment by Proposals for Airport Expansion in England</i> ¹⁷	Research and guidance on assessing effects on the settings of heritage assets arising from aircraft noise with specific reference to expansion of airport capacity in the South East of England.

14.4 Data gathering methodology

- 14.4.1 This section describes the desk study and surveys undertaken to inform the Historic Environment assessment.

Study area

- 14.4.2 For the purposes of the assessment, data was collected on heritage assets within a study area extending to a 500m radius from the application site (refer to **Figure 14.1**). Designated assets at a greater distance of 2km were also considered in order to determine whether it was necessary to include them within the settings assessment.

Desk study

- 14.4.3 An archaeological desk-based assessment has been undertaken in accordance with the principles laid down in the *CIfA Standards and Guidance for Historic Environment Desk based Assessments*¹⁸. This has included a review of the data collected in the course of previous desk-based assessments completed within the application site, as well as the results of previous archaeological field-based investigations.
- 14.4.4 Records of known heritage assets and other elements of the Historic Environment have been consulted within 500m of the application site. This primary dataset was further enhanced through

¹³ CIfA (2014). *Standard and Guidance for Commissioning Work or Providing Consultancy Advice on Archaeology and the Historic Environment*, [online]. Available at: https://www.archaeologists.net/sites/default/files/CIfAS&GCommissioning_1.pdf [Checked 01/08/2018].

¹⁴ CIfA (2014). *Standard and guidance for archaeological field evaluation*, [online]. Available at: https://www.archaeologists.net/sites/default/files/CIfAS&GFieldevaluation_1.pdf [Checked 01/08/2018].

¹⁵ CIfA (2014). *Standard and guidance for archaeological geophysical survey*, [online]. Available at: https://www.archaeologists.net/sites/default/files/CIfAS%26GGeophysics_2.pdf [Checked 01/08/2018].

¹⁶ English Heritage (2008). *Geophysical Survey in Archaeological Field Evaluation*.

¹⁷ Temple and Cotswold Archaeology (2014). *Aviation Noise Metric - Research on the Potential Noise Impacts on the Historic Environment by Proposals for Airport Expansion in England*, [online]. Available at: <http://content.historicengland.org.uk/images-books/publications/aviation-noise-metric/eh-aviation-noise-final-report.pdf/> [Checked 14/02/2018].

¹⁸ CIfA (2014). *Standard and Guidance for Historic Environment desk-based Assessment*, [online]. Available at: https://www.archaeologists.net/sites/default/files/CIfAS&GDBA_2.pdf [Checked 31/07/2018].

the inspection of historic maps, documentary evidence, aerial and terrestrial photographs, where available. The following sources of information were consulted in the course of the desk study:

- North Somerset Historic Environment Record (HER) – 500m study area radius from the application site;
- Register of Designated Heritage Assets;
- Historic England Archive;
- Somerset Archive and Record Service;
- Heritage Gateway;
- Historic maps (including OS maps from 1882 onwards);
- Aerial photographs; and
- Published web-based material.

14.4.5 The records of previous archaeological investigations within the application site and study area have also been reviewed as part of the assessment. These include geophysical survey and trial trenching which was completed in 2011.

14.4.6 Information was also collected on the heritage assets which were identified in the Scoping Report (**Appendix 1A**) as requiring assessment of effects on their settings. This involved a review of available information to understand the heritage significance of the assets, including the designation description, historic maps and aerial photographs. These heritage assets included in the settings assessment are:

- LB1158202 Grade II listed Windmill House;
- SM1008291 Long barrow 350m south-west of Cornerpool Farm;
- SM1008300 Oval barrow on Felton Hill 100m east of The Round House;
- SM1008361 Two confluent bowl barrows on Felton Hill;
- SM1011126 Bowl barrow 420m ENE of Quarry Farm: part of the Redhill round barrow cemetery;
- SM1011127 Two bowl barrows 400m north-east of Quarry Farm: part of the Redhill round barrow cemetery;
- SM1011128 Bowl barrow 300m NNE of Quarry Farm: part of the Redhill round barrow cemetery; and
- SM1011129 Bowl barrow 230m NNE of Quarry Farm: part of the Redhill round barrow cemetery.

Survey work

Site walkover

14.4.7 A site visit was undertaken by a Wood Historic Environment Specialist in July 2018 in order to identify any visible features of Historic Environment interest and to note the ground conditions. At the same time, visits were made to each of the assets included in the settings assessment.

Geophysical survey

- 14.4.8 A geophysical survey was completed within the Silver Zone Car Park Extension (Phase 2) area by Archaeological Surveys Ltd in May 2018. This area was surveyed because it is currently a pasture field which would be disturbed as part of construction of the Proposed Development, in order to create permanent surface car parking. This is an area of agricultural land which has not been previously surveyed, which is in close proximity to known features of archaeological interest, including a long barrow to the south (SM1008291). There was a potential for the presence of buried archaeological remains within this area. Therefore, it was necessary to undertake a field survey within this area and a geophysical (magnetometer) survey was selected as a suitable initial survey method.
- 14.4.9 The survey and reporting were completed in accordance with established guidance documents (listed in **Section 14.3**); the survey area covered a total of 4ha. The survey was carried out using a SENSYS MAGNETO®MXPDA five channel cart-based system. The instrument has five fluxgate gradiometers (FGM650) spaced 0.5m apart with readings recorded at 20Hz. Data was collected along a series of parallel survey transects to achieve 100% coverage of the surveyable land. Data was initially prepared using SENSYS MAGNETO®DLMGPS software to effectively allocate a geographic position for each data point. Survey tracks were analysed and georeferenced raw data, in the Universal Transverse Mercator Zone 30N (UTM Z30N) projection, was then exported in American Standard Code for Information Interchange (ASCII) format for further analysis and display within TerraSurveyor. The minimally processed data was clipped for display at $\pm 5\text{nT}$ and at $\pm 3\text{nT}$ ¹⁹ and in order to assist in the archaeological interpretation.
- 14.4.10 The survey report, with a detailed description of the methodology and results is included as **Appendix 14A**.

Trial trenching

- 14.4.11 Trial trenching was undertaken within the Silver Zone Car Park Extension (Phase 2), with fieldwork undertaken from 26 to 28 September 2018 by Cotswold Archaeology Ltd. This was completed in accordance with a written scheme of investigation²⁰ which had been submitted to and approved by North Somerset Council's Archaeologist by email on the 16 August 2018.
- 14.4.12 The trial trenching comprised the excavation of 11 trial trenches, each measuring 50m in length and 1.8m in width. The trenches were located to test geophysical anomalies, as well as to give a representative sample of the remainder of the application site. Trenches were set out on OS National Grid (NGR) co-ordinates using Leica Global Positioning System (GPS) and surveyed in accordance with Cotswold Archaeology Technical Manual 4: Survey Manual. All trenches were excavated by a mechanical excavator equipped with a toothless grading bucket. All machine excavation was undertaken under constant archaeological supervision to the top of the natural substrate. Records were maintained in accordance with Cotswold Archaeology Technical Manual 1: Fieldwork Recording Manual.
- 14.4.13 The survey report, with a detailed description of the methodology and results is included as **Appendix 14B**.

¹⁹ nT = nano Tesla, a measure of localised variation in magnetism. 'Clipping' of data involves setting minimum and maximum values and replacing data outside of the range with those values. This improves colour or greyscale contrast and it has been found that clipping data to ranges between $\pm 5\text{nT}$ and $\pm 3\text{nT}$ often improves the appearance of features associated with archaeology.

²⁰ Cotswold Archaeology (2018). Bristol Airport Site HH Broadfield Down North Somerset – Written Scheme of Investigation for an Archaeological Evaluation.

14.5 Overall baseline

Current baseline

Designated heritage assets

World heritage sites

- 14.5.1 There are no WHS' within the application site or study area. The nearest WHS is City of Bath, circa 20km east of Bristol Airport.

Scheduled monuments

- 14.5.2 There are no Scheduled Monuments (SM) within the application site, though there are seven SMs within 500m. These assets are included in **Table 14.3** and shown on **Figure 14.1**. Designation descriptions are included in **Appendix 14C**.

Listed buildings

- 14.5.3 There is a single listed building within 500m of the application site, which is the Grade II Windmill House (List entry 1158202), located adjacent to the eastern boundary of the application site. This is included in **Table 14.3** and shown on **Figure 14.1**. The designation description is included in **Appendix 14C**.

Conservation areas

- 14.5.4 There are no conservation areas within 500m of the application site. The conservation area of Felton lies circa 900m east-north-east of the application site.

Registered parks and gardens

- 14.5.5 There are no Registered Parks and Gardens (RPG) within 500m of the application site. The nearest RPG is Grade II* registered Barley Wood which is circa 1.9km to the south-south-west of the application.

Registered battlefields

- 14.5.6 There are no Registered Battlefields (RB) within 500m of the application site. The nearest RB is Battle of Lansdown (Hill) 1643 circa 20.5km to the north-east of the application site.

Table 14.3 Designated heritage assets within 500m of Bristol Airport site boundary

List Entry	Grade	Name	Location relative to site boundary
Scheduled Monuments			
1008291	-	Long barrow 350m south-west of Cornerpool Farm	c. 260m south
1008300	-	Oval barrow on Felton Hill 100m east of The Round House	c. 75m east
1008361	-	Two confluent bowl barrows on Felton Hill	c. 430m east

List Entry	Grade	Name	Location relative to site boundary
1011126	-	Bowl barrow 420m ENE of Quarry Farm: part of the Redhill round barrow cemetery	c. 400m south
1011127	-	Two bowl barrows 400m north-east of Quarry Farm: part of the Redhill round barrow cemetery	c. 350m south
1011128	-	Bowl barrow 300m NNE of Quarry Farm: part of the Redhill round barrow cemetery	c. 350m south
1011129	-	Bowl barrow 230m NNE of Quarry Farm: part of the Redhill round barrow cemetery	c. 400m south
Listed Buildings			
1158202	II	Windmill House	Immediately south-east

Non-designated heritage assets

- 14.5.7 There are 211 records included in the North Somerset Historic Environment Records (NSHER) that fall within the application site, the vast majority of which relate to the former Royal Air Force (RAF) Lulsgate Bottom. These include references to the former buildings and other structures which were built as part of RAF Lulsgate Bottom, such as fighter pens, hangars, stores, offices and training buildings. The vast majority of these have now been removed and a description of the surviving former RAF buildings is included in **Section 14.12**. Records of earlier features include references to former agricultural features of probable post-Medieval date, including limekilns, and evidence for earlier activity, including recorded locations of surface artefacts of prehistoric date. There are a further 124 records from within 500m of the application site. NSHER records are included in **Appendix 14D** and are shown on **Figure 14.2**.

Previous Archaeological Investigations

- 14.5.8 The NSHER records a number of previous archaeological investigations within the application site (refer to **Table 14.4**). The results of these investigations have been reviewed and incorporated into the baseline included in this chapter.

Table 14.4 Previous archaeological investigations within the application site

Event no.	Type	Summary	Date	Location
ENS5	Survey – OS		1962	ST 4920 6507
ENS856	Evaluation – trial trenching	Evaluation on the site of the A38 re-alignment Two evaluation trenches dug prior to the re-alignment of A38. A small number of unstratified lithic implements were found. It was not thought that they represent an activity site, rather an indication of the use of the wider area in prehistoric times.	1999	ST 51314 65083
ENS105	Evaluation – trial trenching	Evaluation on the site of the proposed A38 re-alignment.	1998	
ENS121	Evaluation – trial trenching	Bristol Airport terminal Avon, Wrington	1992	ST 50700 65800

Event no.	Type	Summary	Date	Location
		Evaluation in advance of the construction of a new passenger terminal. Post holes and ditches of prehistoric date found.		
ENS127	Desk study	Expansion of Bristol International Airport, RAF Lulsgate Bottom gazetteer	2006	
ENS150	Desk study	Development and enhancement of Bristol Airport. Environmental Statement Vol 7 Cultural heritage.	2006	
ENS153	Evaluation – geophysical survey	Geophysical survey land south of Bristol Airport.	2006	
ENS159	Evaluation – geophysical survey and trial trenching	Site U Bristol Airport development, Broadfield Down, North Somerset.	2011	
-	Evaluation – geophysical survey and trial trenching	Bristol Airport Site C, Broadfield Down, North Somerset Archaeological Evaluation	2016	ST 49916 64721

Historic context

Prehistoric

- 14.5.9 The application site lies within Broadfield Down, a large upland area roughly bounded by the A370 in the west, the north side of the valley of the Congresbury Yeo to the south, the valley of the Chew to the east and the Ashton Vale to the north. Within the prehistoric period, this upland is likely to have had a mix of woodland and open spaces. There is evidence of prehistoric activity, particularly from the Neolithic period.
- 14.5.10 Prehistoric activity is most clearly seen in the presence of barrows of likely Neolithic and Bronze Age date, though whether or not there were prehistoric field systems on Broadfield Down has not been established. Extensive field systems are also known from the western flank of Broadfield Down, associated with 'rounds'²¹. Small-scale investigation of this western part of Broadfield Down (by the A370) by Yatton Claverham and Cleeve Archaeological research team (YCCART) has revealed concentrated prehistoric occupation and activity, which suggests there is potential for sub-surface remains in other areas.
- 14.5.11 The earliest evidence of human activity in the vicinity of the application site is of a Mesolithic date, with a flint scatter, presumably recovered during field walking (HER 679) recorded on Felton Common.
- 14.5.12 Neolithic and Bronze Age occupation of the area is evidenced by a number of monuments in the vicinity of Bristol Airport, several of which are scheduled (refer to **Table 14.3**). Within the application site itself, three features have been tentatively interpreted as former barrows at North Hill (HER 295; 297; 358) and an undated mound in the southern area of the application site (HER 664).
- 14.5.13 Activity of Neolithic and Bronze Age dates is also evidenced by further artefact finds, mostly of worked flint, both within the application site and the study area. Two Bronze Age axes have also

²¹ Rounds are enclosures probably dating to the late Bronze and/ or Iron Ages, which are preserved in the ancient woodland on the slopes.

been recovered from within the application site (HER 4687; HER 357), and a flint scatter at the eastern edge of the application site included a Neolithic leaf-shaped arrowhead (HER 625). Within the southern part of the application site, a flint scatter east of Cornerpool Farm was recorded by the OS in 1965 (HER 665). Relatively few sub-surface archaeological features have been identified within the study area, although some, including postholes and ditches, were identified by trial trench archaeological evaluation in advance of construction of the new passenger terminal (ENS121). No artefacts were recovered from these features, although a prehistoric date was attributed to them from unstratified worked flint recorded during the evaluation, some of which was dated to the Neolithic or early Bronze Age period.

- 14.5.14 Other prehistoric artefact finds within the study area include Bronze Age bronze socketed axes found at Downside (HER 357) and Lulsgate. A prehistoric flint-working site is also recorded to the south of the application site, while earlier prehistoric activity is represented by a flint scatter south of Down House (HER 625) and flint working site to the east of Cornerpool Farm (HER 665).

Roman

- 14.5.15 No Roman period sites are recorded within the study area and very little is known of any Roman activity on Broadfield Down. However, significant quantities of Roman pottery were recovered during work in advance of the Freemans Farm quarry, some 1.5km to the north-east of the application site.
- 14.5.16 Surface lead mining is known to have begun in the Roman period in the wider Mendip area, although there is no evidence for Roman lead mining on Broadfield Down.

Medieval

- 14.5.17 Most of the settlements around the edge of Broadfield Down have their origins in the late Saxon period, with the village names including Wrington appearing in the Domesday Book (1086). There is also some evidence of a Medieval date for farms and hamlets further up the slopes, such as Meeting House Farm in Wrington, and the hamlet of Lulsgate itself. However, evidence arising from research on Mendip suggests that many farms previously thought to be 19th Century in origin actually have Medieval predecessors; it is likely that this may also be the case on Broadfield Down. Although Wrington occupies a large part of the plateau, all the surrounding parishes, whose boundaries would largely have been fixed by AD1000, extend onto the Down, presumably emphasising its importance as a grazing resource.

Post medieval

- 14.5.18 The post medieval period was characterised by dispersed settlement, with large open fields covering most of its highest areas. Much of the highest ground is likely to have been common until its relatively late enclosure, such as the surviving part of Felton Common to the east of Bristol Airport. In this respect the area is not dissimilar to Mendip to the south, or the smaller Dundry Ridge to the north-east. This pattern of field systems and enclosure is borne out by the Tithe map of Wrington of 1839, which is the earliest available detailed map covering the area. This shows a series of irregular fields in the south of the application site and beyond, around Cornerpool Farm and Goblincombe Farm to the south-west. These fields appear to represent the organic enclosure of land, perhaps beginning with the farming of land within Goblin Combe to the south and west and expanding onto higher ground. There is also a small-scale enclosure of similar appearance around Cook's Farm, to the north-west of the application site. The remainder of the application site was divided into larger rectangular fields on a regular grid, which were likely to be substantially later than the small-scale enclosure. The Tithe apportionment records all these regular fields as 'Allotment on Broadfield Down'. The names of the less regular fields are mostly descriptive, such as

'Long Paddock and Round Mead' to the north of Cornerpool Farm or pertain to ownership and no names of particular interest are recorded. The name 'Gudderidge' is recorded for several fields; this is presumably a family name, which is recorded in a number of locations, particularly in Taunton in 18th Century church registers. The Tithe apportionment records that all land within the application site was owned by the Duke of Cleveland, with three principal occupiers; Jon Lodge (north), Charles Gordon Ashley Esquire (south-east) and George Stallard (south-west).

- 14.5.19 To the south of the application site, south-east of Cornerpool Farm, is an area of former lead extraction, manifested by small depressions surrounded by irregular earthworks. This is locally referred to as 'Gruffy Ground' (HER 2186). Such remains of surface lead extraction are known in the Mendips from the Roman period onwards, although the industry reached its peak between AD 1628 and 1659. It is most likely that the remains to the south of the application site date from this early post medieval period. After this period, the lead industry in the area declined rapidly, probably due to the exhaustion of ore in the lodes near the surface. In the area of this 'Gruffy Ground', there are also three north-west to south-east aligned banks, which divide the field. These appear to be contemporary to the remains of lead extraction and are not shown in the Tithe map.

20th Century

- 14.5.20 Aviation use influenced the application site and surrounding area during the 20th Century. An area of farmland was bought in 1929 and officially opened as an airport in May 1930. It was requisitioned by the Air Ministry at the outbreak of World War Two (WWII). Known as Lulsgate Airfield, it was in use during WWII and abandoned in 1946. Little of the infrastructure of the original airfield survives; however, the NSHER identifies several records of former structures of historical interest within and to the south of the airfield, including aircraft double-fighter pens (HER 41528; HER 41529; HER 41530; HER 41531; HER 41532; HER 41533) which contain reinforced store rooms and/or air raid shelters. Other structures of historical interest include the brick-built remains of a firing range (HER 41634) and cannon test butt (HER 41633), aircraft hangars (HER 41526; HER 41527) and several latrines, recreational huts, and barrack huts. These were removed during recent enhancement of Bristol Airport. The NSHER also records the location of numerous former buildings associated with this period of use, including offices, stores and the Battle Headquarters (HER 41604).

Future baseline

- 14.5.21 In the absence of the Proposed Development, no notable changes to the future baseline are anticipated during the period that the Proposed Development would be constructed and operational. It is anticipated that below-ground archaeological heritage assets would remain in situ without significant further disturbance.

14.6 Consultation

- 14.6.1 **Table 14.5** provides a summary of the issues associated with the Proposed Development that have been raised by consultees and how regard has been given to them in this ES.

Table 14.5 Summary of issues raised during consultation regarding Historic Environment

Issue raised	Consultee(s)	Response and how considered in this chapter	Section Ref
Need for targeted trial trenching within Silver Zone Car Park Extension (Phase 2)	NSC Archaeologist	Trial trenching has been completed in accordance with a Written Scheme of Investigation, which was agreed in writing by the North Somerset County Archaeologist.	Section 14.4

14.7 Scope of the assessment

14.7.1 This section outlines the following:

- Identification of potential receptors that could be affected by the Proposed Development; and
- The potential effects on identified receptors that could be caused by the Proposed Development.

14.7.2 The scope of assessment has been informed by:

- The Scoping Report (**Appendix 1A**);
- Scoping Opinion (**Appendix 1B**);
- The Historic Environment baseline (**Section 14.5**); and
- The Proposed Development design (**Chapter 2: Description of the Proposed Development**).

Approach to identifying potential receptors

14.7.3 Effects on heritage assets are judged on how and to what extent they affect the heritage significance of the asset. Heritage significance is defined in Annex 2 of the NPPF ²²as:

"The value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting."

14.7.4 Development can affect the heritage significance of heritage assets by both physical intervention into the fabric of an asset or by affecting the experience of the asset.

Direct effects

14.7.5 Effects arising from direct, physical intervention are often referred to as direct effects as they involve physical damage or disturbance, giving rise to a loss of heritage significance. Consequently, it is only those assets which might be physically disturbed by (i.e. within the footprint of) the Proposed Development and associated enabling works such as, intrusive surveys, site compounds and access tracks which are potentially subject to direct effects. As archaeological features are not always evident, a desk-based assessment has been undertaken to examine the potential locations of archaeological heritage assets in relation to the Proposed Development layout, to ascertain the potential for heritage assets to be affected. In light of data collected in the course of the desk-based assessment and following consultation with the local authority archaeologist, further, field-based surveys have been undertaken within the Silver Zone Car Park Extension (Phase 2). This has involved:

- Geophysical survey; and
- Trial trenching.

14.7.6 Much of the construction involved in delivery of the Proposed Development will take place within the existing built footprint of Bristol Airport. Since much of the application site comprises relatively recent airport infrastructure of no historic environment interest, there is limited potential for loss of remains of historic environment interest. In addition to the Silver Zone Car Park Extension (Phase

²² Department for Communities and Local Government (2018). National Planning Policy Framework, [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/728643/Revised_NPPF_2018.pdf [Checked 31/07/2018].

2), there will also be additional land-take for work to the A38, specifically around the junction with Downside Road to the north-east of Bristol Airport. However, these works will take place within previously developed land, including the site of a former quarry, and will not have the potential to affect any heritage assets and so no survey work has been completed in relation to this.

- 14.7.7 Nonetheless, the development of the Silver Zone Car Park Extension (Phase 2) would affect a small area of land currently in agricultural use, which has the potential for the presence of archaeological remains. Bristol Airport was also developed on the site of the former RAF Lulsgate Bottom, with former RAF structures of WWII date having previously been present though nearly have subsequently been removed. As part of Scoping, an initial review of baseline data was undertaken in order to identify the nature of heritage assets which may be present within the application site. This was compared to the extent of the Proposed Development in order to identify the types of asset which could be affected through direct loss or disturbance as a result of construction activities.

Effects on setting

- 14.7.8 Heritage assets can also be affected as a result of changes to their settings, with setting defined in the NPPF¹ as:

"The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve."

- 14.7.9 Historic England guidance⁸ follows this definition and sets out a methodology for considering any effects on the significance of heritage assets arising from change to setting. This methodology comprises five steps:

- Step 1: identify which heritage assets and their settings are affected;
- Step 2: assess whether, how and to what degree these settings make a contribution to the significance of the heritage asset(s);
- Step 3: assess the effects of the Proposed Development, whether beneficial or harmful, on that significance;
- Step 4: explore ways to maximise enhancement and avoid or minimise harm; and
- Step 5: make and document the decision and monitor outcomes.

- 14.7.10 Assessment of setting is most commonly associated with designated heritage assets; however non-designated heritage assets can also be affected by change to setting. The identification of those assets whose settings could be affected through changes to their settings forms Step 1 of the assessment process. This was undertaken as part of preparation of the Scoping Report (refer to **Appendix 1A**) and involved the following tasks:

- Review of identified assets within the application site and study area to identify those whose heritage significance may be susceptible to changes in their setting;
- Review of the preliminary Zone of Theoretical Visibility (ZTV, see **Figure 9.3**) to identify those assets from which the Proposed Development may be visible; and
- A consideration of other changes such as noise and lighting which could contribute to a significant effect through a change in setting.

- 14.7.11 Consideration has also been given to the potential for increased noise resulting from an increase in flight numbers to result in or contribute to effects on the settings of any heritage assets. Reference has been made to the noise assessment (**Chapter 7: Noise and Vibration**), though it is important

to note that the consideration of effects of aviation noise on the Historic Environment is not dependent on the gross measurement of predicted noise, but depends on the effect that change to noise would have on the perception and understanding of a heritage asset, and the nature of the heritage asset and its present setting are key considerations in this assessment. Reference has been made to the rationale and methodology detailed in HE's Aviation Noise Metric Study¹⁷. The method comprises a qualitative assessment to identify assets which may have their change of setting affected by changes in levels of outdoor aviation noise. The assessment comprises two steps:

- Step 1: Scoping – identify heritage assets with the potential for a noise impact through a process of scoping using the National Heritage List and noise contours;
- Step 2: Assess the sensitivity of the asset to noise related impacts – the heritage assets which are identified in the scoping exercise are categorised according to how the sound environment contributes to the significance of the heritage asset as set out in the Aviation Noise Metric. The four categories are:
 - ▶ A: solitude, embedded with quietness, is intrinsic to understanding the form, the function, the design intentions and the rationale for the siting of a heritage asset;
 - ▶ B: a non-quiet and specific existing soundscape forms part of the functional understanding of the heritage asset;
 - ▶ C: the abandonment of a heritage asset; a monument, building or landscape, in antiquity (or more recently), has created a perceived 'otherworldly romanticism' enabled by the absence of anthropogenic sounds (quietness); or
 - ▶ D: the absence of 'foreign (modern) sounds' allow an asset to be experienced at 'a very specific point in time' that is intrinsic to understanding the heritage assets significance.

14.7.12 The Step 1 scoping involves the identification of areas where there will be a 25% change in the number of flights exceeding the outdoor noise levels of 60dB L_{Amax} (positive or negative) in order to identify where changes to settings may occur. In this regard, it is noted that the proposed increase to 12 million passengers per annum (mppa) will involve a total of 97,126 annual aircraft movements, an increase of 10,391 movements compared to forecast movements at 10 mppa, with the majority of flights continuing to occur in the day time (06:00 to 23:30). This represents an increase of 11.9% and so it is not anticipated that a 25% increase would be experienced at any potentially sensitive designated heritage asset. A comparison of the Summer Day N70 noise contours for 10 mppa and 12 mppa (**Figures 7D.31 and 7D.32**) also suggests that a 25% increase would not occur. There are no designated heritage assets within 1km of the Proposed Development which meets any of the criteria set out in Categories A-D for the sound environment to contribute to the significance of the heritage asset. A detailed assessment as set out in the Aviation Noise Metric Study is therefore not required as part of this assessment. However, a qualitative consideration of noise changes is included in the settings assessment, where required.

Spatial scope

14.7.13 The spatial scope of the assessment of direct effects on heritage assets covers the application site. Physical disturbance of historic buildings or below ground archaeological heritage assets would not occur outside of the site boundary. While it would be possible to mitigate these effects to a degree through archaeological investigation or through amendments to design, the state of understanding of the presence of archaeological remains means that a 'worst-case' approach has been taken to assessment which discounts the effects of mitigation

- 14.7.14 To identify the scope for the assessment of change to setting arising from visual change in the setting of heritage assets, all assets within 500m of the application site, in addition to all designated assets within the preliminary ZTV, were reviewed.

Temporal scope

- 14.7.15 The temporal scope of the assessment is consistent with the period over which the Proposed Development would be built and therefore covers both construction and operational periods (refer to **Chapter 2: Description of the Proposed Development**). It is anticipated that all direct effects would arise during the construction period, whilst effects from changes to setting may arise during both the construction and operational periods. No account has been taken of any climate change impacts during the operational development since this is scoped out of further assessment.

Potential receptors

Direct effects

- 14.7.16 Potential receptors which could be significantly affected by the Proposed Development as a result of direct loss or disturbance during construction activities are:
- Non-designated buried heritage assets of prehistoric or Romano-British date;
 - Non-designated buried heritage assets of post medieval date;
 - Non-designated buried heritage assets of WWII date; and
 - Non-designated built heritage assets of WWII date.

Effects on setting

- 14.7.17 Heritage assets identified during the Stage 1 process as being subject to potentially significant effects as a result of changes to their settings are:
- Grade II listed Windmill House (LB1158202);
 - Long barrow, 350m south-west of Cornerpool Farm (SM1008291);
 - Oval barrow on Felton Hill, 100m east of The Round House (SM1008300);
 - Two confluent bowl barrows on Felton Hill (SM1008361);
 - Bowl barrow, 420m ENE of Quarry Farm: part of the Redhill round barrow cemetery (SM1011126);
 - Two bowl barrows, 400m north-east of Quarry Farm: part of the Redhill round barrow cemetery (SM1011127);
 - Bowl barrow, 300m NNE of Quarry Farm: part of the Redhill round barrow cemetery (SM1011128); and
 - Bowl barrow, 230m NNE of Quarry Farm: part of the Redhill round barrow cemetery (SM1011129).
- 14.7.18 All of these heritage assets are within 500m of the application site. No assets over 500m away have been identified as being subject to potential effects arising from changes to setting due to the nature of the surrounding topography, the current built form of the existing Bristol Airport infrastructure and the nature of the Proposed Development.

- 14.7.19 Bristol Airport is located on the Broadfield Down Plateau with the runway and its southern side at elevations of between 196m and 183m AOD. The northern part of the application site is at a maximum of 185m AOD, falling away to 165m AOD at the northern boundary. Beyond the Broadfield Down Plateau, in which Bristol Airport is located, the land gently falls in all directions. This means that most designated assets at a distance of over 500m are effectively screened from the application site by surrounding topography.
- 14.7.20 In addition, the Proposed Development will take place largely within the existing footprint of Bristol Airport, with only limited additional land-take. Therefore, the Silver Zone Car Park Extension (Phase 2) is the only element of the Proposed Development which will involve new development closer to a designated asset.

Likely significant effects

- 14.7.21 The Historic Environment receptors that have been taken forward for assessment are summarised in **Table 14.6**.

Table 14.6 Historic Environment receptors scoped in for further assessment

Receptor	Relevant assessment criteria	Likely significant effects
Non-designated buried heritage assets of prehistoric or Romano-British date	NPPF	Loss or disturbance as a result of construction, particularly within the area of new land-take for the Silver Zone Car Park Extension (Phase 2).
Non-designated buried heritage assets of post medieval date	NPPF	Loss or disturbance as a result of construction, particularly within the area of new land-take for the Silver Zone Car Park Extension (Phase 2).
Non-designated buried heritage assets of WWII date	NPPF	Loss or disturbance as a result of construction, particularly within the area of new land-take for the Silver Zone Car Park Extension (Phase 2).
Non-designated built heritage assets of WWII date	NPPF	Loss or disturbance as a result of construction, particularly within the area of new land-take for the Silver Zone Car Park Extension (Phase 2).
Grade II listed Windmill House (LB1158202)	NPPF HE (2015) The Setting of Heritage Assets	Loss of heritage significance due to change to setting of the asset.
Long barrow 350m southwest of Cornerpool Farm (SM1008291)	NPPF HE (2015) The Setting of Heritage Assets	Loss of heritage significance due to change to setting of the asset.
Oval barrow on Felton Hill 100m east of The Round House (SM1008300)	NPPF HE (2015) The Setting of Heritage Assets	Loss of heritage significance due to change to setting of the asset.
Two confluent bowl barrows on Felton Hill (SM1008361)	NPPF HE (2015) The Setting of Heritage Assets	Loss of heritage significance due to change to setting of the asset.
Bowl barrow 420m ENE of Quarry Farm: part of the Redhill round barrow cemetery (SM1011126)	NPPF HE (2015) The Setting of Heritage Assets	Loss of heritage significance due to change to setting of the asset.
Two bowl barrows 400m north-east of Quarry Farm: part of the Redhill round	NPPF HE (2015) The Setting of Heritage Assets	Loss of heritage significance due to change to setting of the asset.

Receptor	Relevant assessment criteria	Likely significant effects
barrow cemetery (SM1011127)		
Bowl barrow 300m NNE of Quarry Farm: part of the Redhill round barrow cemetery (SM1011128)	NPPF HE (2015) The Setting of Heritage Assets	Loss of heritage significance due to change to setting of the asset.
Bowl barrow 230m NNE of Quarry Farm: part of the Redhill round barrow cemetery (SM1011129)	NPPF HE (2015) The Setting of Heritage Assets	Loss of heritage significance due to change to setting of the asset.

14.7.22 All other potential Historic Environment receptors have been scoped out of any further assessment because the potential effects are not considered likely to be significant. This is because any increase in size and scale of buildings, noise and lighting levels are not currently expected to be sufficient to cause potentially significant effects on the setting of any other heritage assets in the context of the existing airport.

14.8 Environmental measures embedded into the development proposals

14.8.1 A number of environmental measures have been embedded into the development proposals, as outlined in **Chapter 2: Description of the Proposed Development**, specifically **Section 2.5. Table 14.7** outlines how these embedded measures will influence the Historic Environment assessment.

Table 14.7 Summary of the embedded environmental measures

Receptor	Changes and effects	Embedded measures
Remains of former lead extraction (HER 2186)	Potential disturbance as a result of ecological enhancements.	Ecological enhancement will be designed to avoid disturbance to these remains, ensuring that they are not affected.
Long barrow 350m southwest of Cornerpool Farm (SM1008291)	Change in setting as a result of extension of Silver Zone Car Park Extension (Phase 2) to the north of the monument.	Earth bund will be created as the first phase of construction within this area. This is a measure which has been used in previous phases of development at Bristol Airport and it will screen the monument from later construction activities and will therefore limit the duration of construction effects on this monument.

14.9 Assessment methodology

14.9.1 The generic project-wide approach to the assessment methodology is set out in **Chapter 4: Approach to Preparing the Environmental Statement**, specifically in **Sections 4.5 to 4.7**. However, whilst this has informed the approach that has been used in the Historic Environment assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of this assessment.

Methodology for predicted effects

- 14.9.2 To understand the significance of direct effects, the presence of any heritage assets that are known to be, or could potentially be, within the area that will be disturbed by the Proposed Development have been assessed. Comparison of the distribution of known and potential archaeological features within the study area allows the potential extent and nature of any direct disturbance to be characterised.
- 14.9.3 The methodology adopted for the assessment of effects arising from change in setting, follows the approach set out by HE⁸. In this case, the potential for loss of heritage significance is most likely to occur as a result of intervisibility or direct views between the asset and the Proposed Development. Change to views of an asset from a third viewpoint, even where there is no direct intervisibility between development and asset, may also be relevant.
- 14.9.4 In addition to purely visual considerations, other effects of the Proposed Development, such as operational lighting, noise (which, in the case of an airport development may derive from ground or airborne sources) or vibration, may also have an effect, although this is normally only relevant in relatively close proximity to the Proposed Development. These effects are understood in terms of the relationship of the asset with its current setting and may be positive, enhancing the heritage significance of the asset, or value-neutral or harmful, depending on the nature of the change, the character of the setting and its contribution to the heritage significance of the asset.

Significance evaluation methodology

- 14.9.5 The assessment of significance of any effect on a heritage asset is largely a product of the heritage significance of an asset and magnitude of the effect that may give rise to harm, qualified by professional judgement. An assessment of effects on an asset involves an understanding of the heritage significance of the asset and in the case of an indirect effect, the contribution of the setting to the heritage significance of the asset.
- 14.9.6 The conservation of the significance of heritage assets is considered in HE guidance, in which change is characterised as an inevitable process, but one that can be managed⁹. In this context, it is important to note that loss of archaeological interest is usually considered to be only partially mitigated through archaeological fieldwork, as archaeological investigation cannot fully capture the informative potential of a heritage asset. This is often set against the knowledge that in many cases, archaeological interest of an asset may decline over time as a result of natural processes such as erosion, or cultural processes including cultivation. Heritage significance does not depend on the preservation of a feature in its current condition and can be enhanced through sensitive management. The NPPF (Paragraph 126)¹ directs the decision-maker to take account of viable uses that sustain the significance of the Historic Environment, consistent with the conservation of heritage assets.
- 14.9.7 Rather than just characterising the potential physical effects of development, any assessment therefore needs to understand the effects on the significance of heritage assets and/or significant places. The heritage significance of the asset is determined by reference to the heritage interests set out in the NPPF¹. These are:
- Archaeological interest: the potential of a place to yield evidence about the past;
 - Historic interest: how the past can be connected to the present through a place through association with or illustration of the past; and
 - Architectural/artistic interest: how sensory and intellectual stimulation is drawn from a place either through design or fortuitous development over time.

- 14.9.8 For the purposes of assessing the significance of effects in EIA terms, heritage significance has also been assigned to one of four classes, with reference to the heritage interests (paragraph 14.9.7) and relying on professional judgement as informed by policy and guidance. The hierarchy given in **Table 14.8** reflects the NPPF distinction between designated and non-designated heritage assets. The NPPF further distinguishes between designated assets of the highest heritage significance (i.e. SMs, protected wreck sites, battlefields, Grade I and II* listed buildings, Grade I and II* RPGs, and WHS) and other designated heritage assets. This further distinction is relevant to planning policy but has less influence on the establishment of the significance of an effect in EIA terms.

Table 14.8 Definition of heritage significance

Heritage Significance	Summary rationale	Example asset class
High	Asset has significance for an outstanding level of archaeological, architectural, historic and/or artistic interest.	Designated Heritage Assets. Nationally and internationally significant non-designated archaeological sites.
Medium	Asset has significance for a high level of archaeological, architectural, historic and/or artistic interest.	Locally listed buildings and other local/county-based designations. Regionally significant non-designated archaeological sites.
Low	Asset has significance for elements of archaeological architectural, historic or artistic interest.	Locally-significant archaeological site.
Negligible	Due to its nature of form/condition/survival, cannot be considered as an asset in its own right.	Non-extant HER record.

Magnitude of change

- 14.9.9 Direct effects are qualified by the extent and nature of remains associated with an asset which would be disturbed or lost, and the effect of this loss on the heritage significance of the asset. In respect of buried archaeological remains with no visible above ground remains, this would normally result in the loss of archaeological interest, but elements of architectural and historic interest can also be affected.
- 14.9.10 The effects of change in the setting of a heritage asset may depend on individual aspects of that setting, and assessments must be, by their nature, specific to the individual assets being considered. HE guidance⁸ advises that the following aspects of setting should be considered in addition to any identified key attributes:
- The physical surroundings of the asset, including its relationship with other assets;
 - The way the asset is appreciated; and
 - The asset's associations and patterns of use.
- 14.9.11 It should also be noted that not all change necessarily detracts from the heritage significance of the asset. In the assessment of effects on the setting of heritage assets, the nature of the effect, i.e. positive, adverse or neutral, of development is a subjective matter, usually taken to constitute an adverse effect where change will constitute new and different elements to the setting of designated features, either to an imagined 'contemporary' setting or to their existing setting. While subjective, this decision is based on professional judgement and an informed understanding of the potential change arising through development, the asset, its heritage significance and the contribution of its

present setting within a framework of published guidance⁸ (as issued by HE) and planning policy¹. The decision of whether an effect is adverse or not is a matter of fact and degree that is explained in individual assessments, and therefore does not bias the assessment.

14.9.12 Effects on receptors are assigned to one of four classes of magnitude, as defined in **Table 14.9**.

Table 14.9 Methodology criteria for magnitude of change

Magnitude of change	Summary rationale
High	Loss of heritage significance of an order of magnitude that would result from total or substantial demolition or disturbance of a heritage asset or from the disassociation of an asset from its setting.
Medium	Loss of heritage significance arising from partial disturbance or inappropriate alteration of asset which will adversely affect its importance. Change to the key characteristics of an asset's setting, which gives rise to harm to the heritage significance of the asset, but which still allows its archaeological, architectural or historic interest to be appreciated.
Low	Minor loss to or alteration of an asset which leaves its current heritage significance largely intact. Minor and short-term changes to setting which do not affect the key characteristics and in which the historical context remains substantially intact.
Negligible	Minor alteration of an asset which does not affect its heritage significance in any discernible way. Minor and short term or reversible change to setting which does not affect the heritage significance of the asset.

Determination of significance

14.9.13 The matrix in **Table 14.10** has been prepared to guide the assessment of whether effects on the Historic Environment for the purposes of EIA are to be considered significant or not. For this assessment, a Major effect would be considered to be significant and a Moderate effect potentially significant in EIA terms. Additionally, a Low magnitude of change may be potentially significant which would be determined depending on the heritage significance of the asset and the exercise of professional judgement.

Table 14.10 Significance evaluation matrix

		Magnitude of change			
		High	Medium	Low	Negligible
Heritage Significance	High	Major (Significant)	Major (Significant)	Moderate (Possibly significant)	Minor (Not significant)
	Medium	Major (Significant)	Moderate (Possibly significant)	Minor (Not significant)	Negligible (Not significant)
	Low	Moderate (Possibly significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)
	Negligible	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)	Negligible (Not significant)

14.10 Assessment of effects: buried heritage assets of prehistoric or Romano-British date

Baseline conditions

- 14.10.1 The prehistoric period spans an immense time frame, from the Lower Palaeolithic (500,000 BP) through to the late Iron Age 43AD. The application site lies within an area known for prehistoric activity. This is best represented by the presence of numerous scheduled barrows and hillforts in the local area. Further barrows have also been identified within 500m of the application site, including several within a barrow cemetery west of Butcombe Court (MNS620).
- 14.10.2 Within the application site, three features have been tentatively interpreted as ploughed out barrows at North Hill within the western area (HER 295; HER 297; HER 358). These are located within grassed areas alongside the runway and so associated sub-surface remains may be present. An undated mound in the southern area of the application site (HER 664) may have had a prehistoric origin, though this is within an extensive area of surface car parking and no remains of this can be expected to survive. These may have been associated with funerary practices within the wider area. Two Bronze Age axes have been recovered from the application site (HER 4687; HER 357) indicating presence during this period. Earlier prehistoric activity is represented by a flint scatter south of Down House (HER 625) and flint working site to the east of Cornerpool Farm (HER 665). A possible Mesolithic occupation site is also recorded to the west of Carlisle House (HER 679).
- 14.10.3 There has been little targeted archaeological research carried out on Broadfield Down, although prehistoric activity is known from standing monuments, stray artefact finds and archaeological remains recorded in development lead fieldwork, for example, that undertaken in advance of the new passenger terminal at Bristol Airport, or that associated with the diversion of the A38.
- 14.10.4 The Proposed Development will involve construction of a new surface car parking area within the Silver Zone Car Park Extension (Phase 2). This area is currently a pasture field and has not been previously developed. A geophysical survey was completed within this area in May 2018 and the

report on this is included at **Appendix 14A**. This identified a limited number of features of possible archaeological interest, including two positive linear anomalies which could form a rectilinear feature (**Appendix 14A**; 1 and 2). Whilst these may be natural features, the report notes some similarity to rectilinear features located 240m to the north-west which were identified during archaeological survey undertaken in 2016. There was some evidence to identify these as Romano-British ditches and so a similar date for the linear features in the Silver Zone Car Park Extension (Phase 2) was considered reasonable. Other linear features of possible archaeological interest were also identified (**Appendix 14A**; 3 and 4) and these were initially interpreted as possible former ditches. There were also a number of possible pit-like features (**Appendix 14A**; 5). Overall, these features were initially interpreted as potentially representing the fragmentary remains of a continuation of a small area of Romano-British activity which was identified on land to the north. As a result of this, a total of 11 trial trenches were excavated in order to test the anomalies identified in the geophysical survey as well as apparently blank areas. However, the results of the trial trenching were wholly negative, with no archaeological features identified (**Appendix 14B**). The anomalies recorded by the geophysical survey were apparently caused by variations in the underlying natural substrate, which comprised brown-orange clay with frequent limestone outcrops. Therefore, it is concluded that there are no features of the prehistoric or Romano-British date within the site of the proposed Silver Zone Car Park Extension (Phase 2).

- 14.10.5 The remainder of the application site is largely previously developed land and there are no other identified features of potential prehistoric or Romano-British date which would be affected by the Proposed Development. Possible ploughed-out barrows at North Hill (HER 295; HER 297; HER 358) are considered to be of **low** heritage significance but these are not within an area which would be directly affected by the Proposed Development.

Predicted effects and their significance

- 14.10.6 The completion of geophysical survey and trial trenching has identified no features of possible archaeological interest within the area of the proposed Silver Zone Car Park Extension (Phase 2). Development within this area will therefore not result in any effect on archaeological remains.
- 14.10.7 There are no other known features of this date which would be lost or disturbed as a result of construction of the Proposed Development. Given the previously built nature of much of the application site, there is a very low potential for any previously unknown features of this date to be affected as a result of construction of the Proposed Development.
- 14.10.8 A summary of the results of the assessment of effects on buried heritage assets of prehistoric or Romano-British date is included in **Table 14.12**.

14.11 Assessment of effects: buried heritage assets of post medieval date

Baseline conditions

- 14.11.1 The application site contains a number of features of historic environment interest dating to the post medieval period. To the south-east of Cornerpool Farm is an area of former lead extraction locally referred to as 'Gruffy Ground' (HER 2186). This is visible as a series of small depressions surrounded by irregular earthworks and are likely to be mid-17th Century in date, representing small scale surface extraction of lead. This type of working ceased after this period due to the exhaustion of the near-surface ore deposits. In addition, the geophysical survey within the Silver Zone Car Park Extension (Phase 2) identified an area of magnetically variable responses associated with widespread rocks on the surface (**Appendix 14A**; 6). This was identified as possible

redeposited material related to former quarrying, and this could also represent former shallow lead extraction.

- 14.11.2 The site of Cornerpool Farm (HER 44432) is also likely to date to the post medieval period. The farm was shown as present on the Writington Tithe Map of 1839 and was within an area of irregular fields, suggesting enclosure no later than the 18th Century. Cornerpool Farm may also have dated to this period and comprised a farmhouse with a U-shaped range of farm buildings arranged to the north. It was demolished and cleared away in the late 20th Century.
- 14.11.3 From the post medieval period, the site contained a range of small-scale quarries and lime-kilns (HER 4014, 4030, 4083, 4084). These were likely to have been related to agricultural improvements of late 18th or early 19th Century date and none are still present.
- 14.11.4 Other recorded features of post Medieval date include a former milestone on the old route of the A38 (HER 44426).
- 14.11.5 A summary list of known post Medieval features within the application site, in relation to the Proposed Development, is included as **Table 14.11**.

Predicted effects and their significance

- 14.11.6 **Table 14.11** summaries the known features of post Medieval date in relation to the Proposed Development.

Table 14.11 Records of post Medieval features within the application site

Ref	Name	Location	Current Condition	Relation to Proposed Development
2186	Mound ('Gruffy Ground')	ST 5052 6444	Within pasture field with scrub. Still extant.	Not affected. Potential for management of this area for ecological enhancement.
4014	Limekiln, S Backwel	ST 4973 6503	Within grassed area alongside runway. Presumed infilled or destroyed.	Not affected.
4030	Limekiln, N of Goblin Combe Far	ST 4971 6497	Within grassed area alongside runway. Presumed infilled or destroyed.	Not affected.
4083	Limekiln	ST 5079 6551	Within grassed area alongside runway. Presumed infilled or destroyed.	Not affected.
4084	Limekiln, Felton Hill	ST 5144 6516	Within pasture fields east of re-aligned A38. No longer visible so presumed infilled or destroyed.	Not affected. Within area of proposed changes in management regime to provide ecological enhancement.
4096	Site of limekiln NE of Cornerpool Farm	ST 5065 6470	Within taxiway or South GA apron. Presumed destroyed.	Not affected.
44418	Site of Stone Farm, Lulsgate Airport	ST 5042 6578	Demolished late 20 th century.	Not affected.
44426	Milestone at Lulsgate airfield	ST 5100 6487	Recorded location on Bristol Airport site boundary, on former route of A38.	Not affected.

Ref	Name	Location	Current Condition	Relation to Proposed Development
44429	Site of 'stone', Lulgate airfield	ST 5113 6509	Within grassed area alongside runway. Presumed removed or destroyed.	Not affected.
44432	Site of Cornerpool Farm, Lulgate	ST 5042 6450	Demolished late 20 th century. Within an area of surface car parking. Destroyed.	Not affected.
44580	Site of old quarry, Bristol airport	ST 4892 6508	Within grassed area alongside runway. Presumed infilled or destroyed.	Not affected.

- 14.11.7 As identified in **Table 14.11**, none of the surviving features of post Medieval date recorded on the HER within the application site will be affected by the Proposed Development. Most recorded features of this date have been removed or destroyed in the past, and of those that still survive, an area of former lead extraction working (HER 2186) will be retained within a pasture field. Whilst, there may be some ecological enhancement in this area, this will be designed to avoid any disturbance to the surviving archaeological remains. A milestone recorded at the eastern edge of the application site (HER 44426) will not be affected in any way. Geophysical survey within the site of the proposed Silver Zone Car Park Extension (Phase 2) identified likely redeposited material which may be associated with former lead extraction. The nature of these remains, with the visible remains surviving as surface rocks suggests that this is not well preserved and so they have only limited historic interest and are considered to be of **negligible** heritage significance. The loss of this area of possible former mining or quarrying remains would be of **medium** magnitude, which would be a **Negligible** effect (**not significant**).
- 14.11.8 A summary of the results of the assessment of the effects on buried heritage assets of post medieval date is included in **Table 14.12**.

14.12 Assessment of effects: buried and built heritage assets of WWII date

Baseline conditions

- 14.12.1 RAF Lulgate Bottom was first established as a relief landing ground in 1940 and was then developed from 1941 as a satellite airfield for fighter squadrons based at RAF Colerne. As a satellite airfield it was provided with a standard three runway arrangement comprising main and two subsidiary runways. From 1942 it was transferred to training command and used as a training airfield until its RAF use ceased in 1946. The airfield was provided with a range of technical, training, accommodation and dispersal buildings, many of which were temporary constructions, such as blister hangars. There were also a number of fighter pens around the perimeter of the airfield. The history of the WWII Airfield is documented in a history book entitled '*The Story of RAF Lulgate Bottom*'²³ and the HER incorporates a complete inventory of all the original buildings and structures which were present. In addition, a separate survey report of those WWII built features which were extant in 2006 was undertaken by Paul Francis (Airfield Research Publishing)²⁴. This included a full inventory of WWII buildings and structures which were present at that time.

²³ James, I (1989). *The Story of RAF Lulgate Bottom*. Redcliffe.

²⁴ Entec and Francis, P (2006). *Expansion of Bristol International Airport RAF Lulgate Bottom Gazetteer*. Entec and Airfield Research Publishing.

14.12.2 Whilst the runway and perimeter track layout has largely been retained, the majority of the WWII buildings and infrastructure have been lost to the subsequent development of the modern application site. Therefore, the remaining features are limited to:

- Runway and perimeter track design; and
- Dispersal Site 5 at the former Cornerpool Farm, comprising:
 - ▶ Stanton Air-Raid Shelter;
 - ▶ Airmen's Latrine Block and Drying Room;
 - ▶ Emergency Water Supply; and
 - ▶ Nissen Hut concrete floors.

14.12.3 These have some historic interest as they reflect the wartime use of the airfield and are of **low** heritage significance.

Predicted effects and their significance

14.12.4 The design of the Proposed Development retains the surviving WWII structures to the south of the former Cornerpool Farm (Dispersal Site 5). These are within an area of woodland which will be managed to encourage increased natural regeneration of canopy trees and to enhance bat roosting provision. Any such enhancements would be undertaken in a manner sensitive to the Historic Environment interest of the surviving buildings. There will therefore be **no effect** on these.

14.12.5 A summary of the results of the assessment of effects on buried and built heritage assets of WWII date is provided in **Table 14.12**.

Table 14.12 Summary of significance of adverse direct effects

Receptor and summary of predicted effects	Heritage significance of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale
Loss of or disturbance to buried heritage assets of prehistoric or Romano-British date	Low	None	No effect	Completion of geophysical survey and trial trenching within the site of the Silver Zone Car Park Extension (Phase 2) did not identify any features of archaeological interest. Therefore, development of this area will not result in any loss of archaeological remains. Possible ploughed-out barrows at North Hill (HER 295; HER 297; HER 358) are considered to be of low heritage significance but these are not within an area which would be directly affected by the Proposed Development.
Loss of or disturbance to buried heritage assets of post medieval date	Negligible	Medium	Negligible (Not Significant)	Features identified by geophysical survey may represent poorly preserved remains of former lead extraction or other form of quarrying. These would be lost as a result of construction of the Silver Zone Car Park Extension (Phase 2), though this would not be significant.
Loss of or disturbance to buried and built heritage assets of WWII date	Low	None	No effect	Surviving remains will be retained.

1. The heritage significance of a receptor is defined using the criteria set out in **Section 14.9** and is defined as negligible, low, medium and high.
2. The magnitude of change on a receptor resulting from activities relating to the development is defined using the criteria set out in **Section 14.9** and is defined as negligible, low, medium and high.
3. The significance of the environmental effects is based on the combination of the sensitivity/importance/value of a receptor and the magnitude of change and is expressed as major (significant), moderate (probably significant) or minor/negligible (not significant), subject to the evaluation methodology outlined in **Section 14.9**.

14.13 Assessment of effects: assets which could be affected through changes in setting

Grade II listed Windmill House (LB1158202)

Baseline conditions

Asset description and surroundings

- 14.13.1 This former windmill is located on the parish boundary on the very western edge of Felton Hill, and overlooks the application site, as well as across the unenclosed and unimproved grassland of Felton Hill. It is one of a small group of residential buildings arranged along Long Lane, which forms the western edge of Felton Hill, with enclosed agricultural fields located to the east. The windmill is heavily altered, with a white rendered exterior, tiled pyramidal roof and modern casement windows. Domestic single storey buildings are adjacent to the building.
- 14.13.2 The designation (**Appendix 14C**) describes this Grade II listed building as:
- 'Former windmill, now cottage. Late C18. Random rubble with some render and pyramidal plain tile roof. Circular on plan of 3 storeys. One C19 sash window with marginal glazing to ground floor on north facing section, 2-pane fixed lights to upper floors. Lean-to porch at rear (south facing) with plank door. Interior. Circular staircase.'*
- 14.13.3 The current setting of the building is split between the open grassland of Felton Hill and the expanse of Bristol Airport. Broadfield mill ceased operation in the late 1880s and was converted to a residential dwelling shortly afterwards. As such, it appears to be reduced in height and has had a roof added. It is approximately 200m east of the line of the A38 and approximately 460m south-east of the eastern end of the Bristol Airport runway. The building is enclosed by substantial hedgerows, with only the upper storey of the former windmill rising above these. The application site is visible from the edge of Felton Hill, immediately east of Windmill House and **Figure 9.11** shows a view of Windmill House from Felton Common with Bristol Airport also visible, including the ATC tower and the terminal building. However, the hedgerows surrounding Windmill House will screen views of Bristol Airport from all but the upper floor of the house itself.

Understanding and appreciation

- 14.13.4 Historic OS mapping from 1884 onwards shows the mill as 'Broadfield Windmill', on the western side of the parish boundary, located between enclosed agricultural land to the west and the open area of Felton Common to the east. In the 16th Century the power of the abbeys and manors, which were responsible for the establishment of mills in the area, began to decline and many windmills were abandoned. By the early 18th Century tower mills were replacing the earlier post mills in Somerset. In a tower mill, such as this example, only the cap and sails had to be turned to face the wind, unlike the entire structure with post mills. In many cases the tower mills were built on sites that had previously been occupied by post mills. There are no surviving post mills in Somerset and no windmills remain intact in North Somerset.
- 14.13.5 The majority of Somerset's windmills went into disuse by the mid-19th Century, principally as a consequence of the repeal of the Corn Laws in 1846 which saw cheap grain imports from the Americas flooding the market and prices dropped. Imported grain was milled close to the ports

where it arrived in the country. The decline in Somerset's windmills was accelerated by a move away from arable to pasture and a series of bad harvests in the 1870s²⁵.

- 14.13.6 The building has been altered since it ceased use as an active windmill, with the removal of the upper mill structure comprising the cap and sails, and their replacement with a roof structure suitable for its current residential use. The change to a residential use has been taken further in its immediate surroundings, with the addition of further domestic buildings and the establishment of a tall enclosing hedgerow, presumably to enhance the privacy of the occupants. These changes will have altered the perception of the building, reducing its local prominence, with an altered form which is partially screened. Despite the proximity of the A38 and Bristol Airport to the west, the setting of the asset retains a rural feel and background noise is not a constant detracting element of its setting, though aircraft can be seen and heard as they approach or depart Bristol Airport.

Heritage significance

- 14.13.7 The HE listed building description does not provide any specific reasons for its designation and therefore its heritage significance as a Grade II asset indicates that the building is "*of special interest, warranting every effort to preserve them.*"
- 14.13.8 As a listed building, this asset is of **high** heritage significance. The setting makes a contribution to its heritage significance as its location will have been to a large part determined by its function, on higher ground near to arable fields. Whilst it would not have been built to be seen, or with any designed views in mind, the nature of windmill structures and their prominent locations make them a distinctive feature of the historic landscape, though in the case of Windmill House, this is limited by the changes to its form and its enclosing hedgerow. This is also the only designated windmill in the vicinity, the other examples being in Bristol, Portishead and Worle.

Predicted effects and their significance

- 14.13.9 The application site is located immediately to the north of this asset, though this area is to be retained as pasture fields, with potential for ecological enhancements. Notable elements of new build, such as the West Terminal Extension, will be at a distance of approximately 1.1km. The principal changes which will be visible from the vicinity of Windmill House will be views of the proposed eastern walkway and east pier, the operation of the proposed new east taxiway and the proposed southern and western extensions to the terminal building. However, as noted above, these changes will be screened from all but the upper floor of the house itself.

Construction

- 14.13.10 There will be little change in the setting of the Grade II listed building as a result of the construction of the Proposed Development, which will be temporary and occur within and immediately adjacent to Bristol Airport. Construction activities would be seen as an incremental change within the already active site of Bristol Airport. This will not affect an appreciation of Windmill House within its local context of the immediately adjoining agricultural fields. Consequently, there would be a **negligible** magnitude of change to an asset of high heritage significance. The resulting effect would be **Minor** adverse (not significant).

Operation

- 14.13.11 There will be little change in the setting of the Grade II listed building as a result of the operation of the Proposed Development, which will be within and immediately adjacent to the application site.

²⁵ North Somerset Tourism (2017). Tag Archives: Broadfield Mill Felton Windmills, [online]. Available at: <http://discovernorthsomerset.co.uk/tag/broadfield-mill-felton/> [Checked 25/07/2018].

The changes to Bristol Airport would be seen as an incremental change within the already active site of Bristol Airport. The noise assessment (**Chapter 7: Noise and Vibration**) has included a prediction of changes to the overall exposure to air noise at identified residential receptors as a result of the increase in the number of flights involved in the Proposed Development in comparison to the permitted 10 mppa situation (refer to **Table 7.37**). This identified that the Proposed Development would not result in an increase in the overall exposure to air noise at the nearest residential receptors located at Lulsgate Bottom to the north and Redhill to the south-west. It is therefore concluded that there would not be an increase in air noise that would affect the perception or appreciation of this asset. Consequently, there would be **negligible** magnitude of change to an asset of **high** heritage significance. The resulting effect would be **Minor** adverse (not significant).

Long barrow 350m southwest of Cornerpool Farm (SM1008291)

Baseline conditions

Asset description and surroundings

- 14.13.12 The monument is located at the centre of an enclosed pasture field and now comprises the collapsed megalithic uprights and capstone, as the earthen mound which would have covered these has now all but eroded away. Small scrub trees are growing from the area between the stones. The surrounding landscape is flat, and improved pasture, with low hedge defined boundaries with occasional mature hedgerow trees, and with relatively open views across to the application site and surrounding fields
- 14.13.13 The designation (**Appendix 14C**) describes the asset as:
- '...a chambered long barrow situated on level ground 350m south-west of Cornerpool Farm. The monument has a long mound which is orientated NNE-SSW and is c.37m long, c.15m wide and c.0.5m high. The mound is composed of small stones, and a burial chamber is situated at the northern end. The chamber, which is now collapsed, includes a fallen portal stone and three supporting stones which have slumped. This would have provided the main depository for the burials and will have been a prominent visual feature of the monument since its construction. Running parallel with the long axis of the mound are two side ditches from which material was quarried during the construction of the monument. The ditches are no longer visible at ground level as they have become infilled over the years, but they survive as buried features c.3m wide. Prehistoric artefacts, including a chert axe and bronze palstave, have been discovered in the proximity of the monument'*

Understanding and appreciation

- 14.13.14 Long barrows are a distinctive form of Neolithic funerary monument that originally comprised a communal burial tomb made from large stone blocks with a covering capstone, which is then buried beneath an earthen mound, which extends for some distance behind the chamber itself. The material for the earthen mound is obtained from linear quarry pits which run parallel to the mound. There would have been an entrance to the chambered tomb which would have allowed access to the human remains inside for ceremonial purposes.
- 14.13.15 After thousands of years of erosion, many long barrows effectively lose their earthen mound, leaving the uprights and cap stones to form what are known as Dolmen. Some of these remain structurally intact though may collapse without the supporting earthen mound.
- 14.13.16 Such structures are often accompanied by folklore, and this is the case for this monument. Locally it is known as the 'The Water-stone Dolmen', due to the fact that a natural hollow in one of the

collapsed stones holds water, and is associated with a standing stone near Weston-super-Mare called 'The Wimblesstone', which is said to wander the Mendips on a full moon or on Mid-Summer Eve and go to the Water-Stone to drink.

- 14.13.17 Despite the proximity of Bristol Airport to the north, the setting of the asset retains a rural feel and background noise is not a constant detracting element of its setting, though aircraft can be seen and heard as they approach or depart Bristol Airport.

Heritage significance

- 14.13.18 The Historic England monument description (**Appendix 14C**) states that:

"... Certain sites provide evidence for several phases of funerary monument preceding the barrow and, consequently, it is probable that long barrows acted as important ritual sites for local communities over a considerable period of time. Some 500 long barrows are recorded in England. As one of the few types of Neolithic structure to survive as earthworks, and due to their comparative rarity, their considerable age and their longevity as a monument type, all long barrows are considered to be nationally important."

- 14.13.19 As a SM, this asset is of **high** heritage significance. Its setting makes a contribution to its heritage significance as it will have been located in relation to a contemporary understanding of the landscape, and possibly also in relation to existing monuments at the time of its construction. However, in this case, this monument lacks any clear relationship to topographic features and it is to some extent isolated within a considerably altered post Medieval and modern landscape. Views from the monument toward the application site do not contribute to its heritage significance, with views in this direction being curtailed by the 2m high perimeter bund which has been planted to screen the Silver Zone Car Park Extension (Phase 1).

Predicted effects and their significance

- 14.13.20 The application site lies 125m to the north of the long barrow, with the main works occurring approximately 140m away. In particular, the Silver Zone Car Park Extension (Phase 2) area would be built to include the field to the north of the monument. This parking area would be visible without landscaping mitigation, though it is proposed to build a vegetated earth mound along the southern perimeter of the new car parking area.

Construction

- 14.13.21 There will be a change to the setting of the long barrow as a result of the construction of the Proposed Development. In particular, there can be expected to be plant movements visible during groundworks involved in the creation of the perimeter earth bund. Whilst this earthworks phase can be expected to generate noise, the construction noise assessment (**Appendix 7G**) does not identify an increase above the baseline for receptors in the vicinity of this asset. The visual change in views from the asset will be temporary and take place at the outset of the construction period. Following completion of the bund, the monument will be effectively screened from all further construction activities.
- 14.13.22 Therefore, due to the temporary and short-term nature of the change in views from the asset during the construction phase of the Proposed Development, change to this asset would be of **negligible** magnitude to an asset of high heritage significance. The resulting effect would be **Minor** adverse (not significant).

Operation

- 14.13.23 Immediate views north will change from a further pasture field to a screening bund, as the new bund would be at a distance of approximately 140m compared to the existing perimeter bund which is at a distance of approximately 290m. With the proposals to plant the bund, much of the existing Bristol Airport site would be screened from view, with only a modest shortening of views to the north. Consequently, this limited curtailing of views would give rise to a change of **negligible** magnitude on an asset of **high** heritage significance. The resulting effect would be **Minor** adverse (not significant).

Oval barrow on Felton Hill 100m east of The Round House (SM1008300)

Baseline conditions

Asset description and surroundings

- 14.13.24 The monument is located on an area of flat and high ground to the immediate east of Bristol Airport, known as Felton Hill. This land contains few trees and is characterised by gently rolling topography and unenclosed and unimproved rough grassland with scrub and bracken. There are few trees and views across the landscape are open. The modern settlement of Felton can be seen to the north east and the former windmill (LB1158202) to the west. Bristol Airport can be seen low to the horizon to the north-west (**Photo 1, Appendix 14E**, also see **Figure 9.11**). The monument itself comprises a subtle earthwork and is not readily identifiable due to its low profile and the rough grass and scrub that grows on it and the surrounding area.
- 14.13.25 The designation (**Appendix 14C**) describes the asset as:
- 'The monument includes an oval barrow orientated north-south and situated 100m east of The Round House on Felton Hill. The oval barrow has a mound c.1m high and c.16m by 20m across. Several large stones which protrude from the northern area of the mound may represent a collapsed burial chamber. The smaller stones lying on the mound are likely to have been deposited during the clearance of the common during the Second World War. The barrow mound is surrounded by a ditch from which material was quarried during the construction of the monument. This is no longer visible at ground level, having become infilled over the years, but survives as a buried feature c.3m wide'*
- 14.13.26 The current setting of the barrow is defined by the post-medieval and modern agricultural landscape and industrial landscape. The monument itself sits within an area of open 'common' like ground, which due to the underlying geology and soils is likely to have been similar in prehistoric times. It is not possible to determine a conjectural past setting as factors such as tree cover and land division (that would have been present at the time the monument was established) are unknown. The gently rolling topography is likely to be the only consistent factor between the 'original' and existing settings of the monument. The visible late Neolithic or Bronze Age landscape has now all but vanished as a result of agricultural improvement and the imposition of post medieval and modern field boundaries, settlement and industrial structures. The existing Bristol Airport site is visible from and across the monument, due to the similar land height, however, the majority of existing structures are low profile and are not visually intrusive. The control tower and lighting pylons and the aircraft movements are the most prominent feature but are of sufficient distance not to create an adverse impact to the setting.
- 14.13.27 There are a number of surviving contemporary monuments in the area such as the double bowl barrow to the east (1008361) and the remnants of the long barrow at Cornerpool Farm (1008291). Cropmarks of other barrows at Redhill Round barrow cemetery further testify to the importance of the wider landscape in prehistoric times.

Understanding and appreciation

- 14.13.28 Barrows constructed during the prehistoric period come in a variety of forms, however they all have a functional commonality in that they are funerary monuments. Some were designed to be highly visible and linked with the importance of the ancestors in land ownership. While the function of barrows is relatively well understood, our current understanding, and that of the wider public is that as well as burial sites, they are markers or foci in the landscape, designed to be seen. They are both viewed in the landscape and the landscape is viewed from them. Therefore, the contribution of the setting to the heritage significance of this asset is based upon its open and wide views set within an unimproved grassland landscape formed by the common-like nature of Felton Hill. Despite the proximity of the A38 and Bristol Airport to the west, the setting of the asset retains a rural feel and background noise is not a constant detracting element of its setting, though aircraft can be seen and heard as they approach or depart Bristol Airport.

Heritage significance

- 14.13.29 The designation (**Appendix 14C**) describes the heritage significance as:
- "The oval barrow 100m east of The Round House survives well and will contain information relating to the monument and the landscape in which it was constructed. This is one of only very few examples of an oval barrow occurring in the south-west of England and one of only two known examples within Avon."*
- 14.13.30 As a SM, this asset is of **high** heritage significance. Its setting makes a contribution to its heritage significance, particularly as it is seen within the open area of Felton Hill, but it is its archaeological interest as an unusual monument type for this region which provides its greatest value.

Predicted effects and their significance

- 14.13.31 The Bristol Airport site boundary lies just under 100m from this barrow. The principal changes which will be visible from this asset will be views of the proposed eastern walkway and east pier, the operation of the proposed new east taxiway and the proposed southern and western extensions to the terminal building. These will be at a distance of approximately 750m to 1.2km from the asset.

Construction

- 14.13.32 Ground level construction activities would not be readily visible, with the only visible element being the extension to the terminal building some 1.2km from the barrow. In addition, the construction noise assessment (refer to **Appendix 7G**) does not identify an increase above the baseline for receptors in the vicinity of this asset. Therefore, any change to the setting of the barrow as a result of the construction of the Proposed Development would be temporary and give rise to a change that would be of **negligible** magnitude to an asset of **high** heritage significance. The resulting effect would be **Minor** adverse (not significant).

Operation

- 14.13.33 Changes to the setting of the barrow as a result of the operation of the Proposed Development will be limited due to the distance from the asset and the existing contribution that Bristol Airport currently makes to the setting of the monument. The proposed car parking will not be visible from the monument, while the extension to the existing terminal building will not create a notable change to the Bristol Airport profile. The noise assessment (**Chapter 7: Noise and Vibration**, specifically **Table 7.37**) identifies that the Proposed Development would not result in an increase in the overall exposure to air noise at the nearest residential receptors located at Lulsgate Bottom to

the north and Redhill to the south-west. It is therefore concluded that there would not be an increase in air noise that would affect the perception or appreciation of this asset.

- 14.13.34 Therefore, the operation of the Proposed Development would give rise to a change to the setting of the barrow that would be of **negligible** magnitude to an asset of **high** heritage significance. The resulting effect would be **Minor** adverse (not significant).

Two confluent bowl barrows on Felton Hill (SM1008361)

Baseline conditions

Asset description and surroundings

- 14.13.35 The monument is located on an area of flat ground to the east of Bristol Airport, known as Felton Hill. This land contains few trees and is characterised by gently rolling topography and unenclosed and unimproved rough grassland with scrub and bracken areas. There are few trees and views across the landscape are open. The settlement of Felton can be seen to the north east and the former windmill to the west. Only the upper part of the control tower of Bristol Airport can be seen low to the horizon to the north-west (Photo 2, **Appendix 14E**). The monument itself is subtle and not readily identifiable due to its low profile and the rough grass and scrub that grows on it and the surrounding area.
- 14.13.36 The designation (**Appendix 14C**) describes the asset as:
- 'Bowl barrows, the most numerous form of round barrow, are funerary monuments dating from the Late Neolithic period to the Late Bronze Age, with most examples belonging to the period 2400-1500 BC. They were constructed as earthen or rubble mounds, sometimes ditched, which covered single or multiple burials. They occur either in isolation or grouped as cemeteries and often acted as a focus for burials in later periods. Often superficially similar, although differing widely in size, they exhibit regional variations in form and a diversity of burial practices. There are over 10,000 surviving bowl barrows recorded nationally (many more have already been destroyed), occurring across most of lowland Britain. Often occupying prominent locations, they are a major historic element in the modern landscape and their considerable variation of form and longevity as a monument type provide important information on the diversity of beliefs and social organisations amongst early prehistoric communities. They are particularly representative of their period and a substantial proportion of surviving examples are considered worthy of protection'.*
- 14.13.37 The current setting of the barrow is defined by the post-medieval and modern agricultural landscape and industrial landscape. While the monument itself sits within an area of open 'common' ground, which due to the underlying geology and soils is likely to have been similar in prehistoric times. It is not possible to determine a conjectural past setting as factors such as tree cover and land division (that would have been present at the time the monument was established) are unknown. The gently rolling topography is likely to be the only consistent factor between the 'original' and existing settings of the monument. The visible late Neolithic or Bronze Age landscape has now all but vanished as a result of agricultural improvement and the imposition of post medieval and modern field boundaries, settlement and industrial structures. The existing Bristol Airport site is visible from and across the monument, due to the similar land height, however the majority of existing structures are low profile and are not visually intrusive. The control tower and lighting pylons are the most prominent feature but are of sufficient distance not to create an adverse impact to the setting. The setting of the asset therefore retains a rural feel and background noise is not a constant detracting element of its setting, though aircraft can be seen and heard as they approach or depart Bristol Airport.

- 14.13.38 There are a number of surviving broadly contemporary monuments in the area such as the oval bowl barrow to the north (1008300) and the remnants of the long barrow at Cornerpool Farm (1008291). Cropmarks of other barrows at Redhill Round barrow cemetery further testify to the nature of the wider landscape in prehistoric times.

Understanding and appreciation

- 14.13.39 Barrows constructed during the prehistoric period come in a variety of forms, however they all have a functional commonality in that they are funerary monuments. Some were designed to be highly visible and linked with the importance of the ancestors in land ownership. While the function of barrows is relatively well understood, our current understanding, and that of the wider public is that as well as burial sites, they are markers or foci in the landscape, designed to be seen. They are both viewed in the landscape and the landscape is viewed from them. Therefore, the contribution of the setting to the heritage significance of this asset is based upon its open and wide views set within an unimproved grassland landscape formed by the common like nature of Felton Hill.

Heritage significance

- 14.13.40 The HE monument description (**Appendix 14C**) states that:
- "The bowl barrows on Felton Hill survive well and contain archaeological and environmental information relating to the monument and the landscape in which it was constructed. Confluent bowl barrows are an unusual occurrence in this area of the country."*
- 14.13.41 As a SM, this asset is of **high** heritage significance. Its setting makes a contribution to its heritage significance, particularly as it is present along with other broadly contemporary monuments within the open area of Felton Hill. The group value derived from the presence of a number of contemporary monuments contributes to the historic interest of the assets as representing the remains of an apparent prehistoric funerary landscape. The contribution of direct intervisibility between the monuments is, however, limited by their lack of local prominence and so it is its archaeological interest as an unusual monument type for this region which provides its greatest value.

Predicted effects and their significance

- 14.13.42 The Bristol Airport boundary lies 410m from these barrows, with the nearest elements of the Proposed Development comprising the proposed eastern walkway and east pier, which will be a minimum of approximately 1km away from the asset. Due to topography, the only part of the application site that is visible from the asset is the upper element of the control tower and a small number of lighting pylons and the Proposed Development will not involve any further construction to the height of these. Therefore, no part of the Proposed Development will be visible from the monument.

Construction

- 14.13.43 Construction activities will be screened from the monument by topography and so there will be no discernible change to the setting of the barrow as a result of the construction of the Proposed Development, and so there would be **no effect** on this asset.

Operation

- 14.13.44 Due to topography, the new built elements of the Proposed Development will not be visible from this asset and so there will be no discernible change in the setting of the asset as a result of visual changes arising from the operation of the Proposed Development. The noise assessment (**Chapter**

7: Noise and Vibration, specifically **Table 7.37**) identifies that the Proposed Development would not result in an increase in the overall exposure to air noise at the nearest residential receptors located at Lulsgate Bottom to the north and Redhill to the south-west. It is therefore concluded that there would not be an increase in air noise that would affect the perception or appreciation of this asset. Therefore, there would be **no effect** on this asset.

The Redhill round barrow cemetery (SM1011126, SM1011127, 1011128, 1011129)

- 14.13.45 The Redhill round barrow cemetery comprises a group of round barrows, all of which have been almost ploughed out and therefore survive principally as sub-surface remains only. The cemetery is designated as four separate SMs which are:
- Bowl barrow 420m ENE of Quarry Farm: part of the Redhill round barrow cemetery (SM1011126);
 - Two bowl barrows 400m north-east of Quarry Farm: part of the Redhill round barrow cemetery (SM1011127);
 - Bowl barrow 300m NNE of Quarry Farm: part of the Redhill round barrow cemetery (SM1011128); and
 - Bowl barrow 230m NNE of Quarry Farm: part of the Redhill round barrow cemetery (SM1011129).
- 14.13.46 As these assets must be understood as a group and reflecting their similarity and close proximity these are considered as a single asset for this assessment.

Baseline conditions

Asset description and surroundings

- 14.13.47 The monuments are located in an agricultural field 300m south of the Bristol Airport site boundary, at the junction of the A38 and New Road. The field is flat pasture but has been used for hay/silage crop in the past (as evident from Google Earth imagery dating to 2005). Any surface features are now extremely subtle, and it is not apparent at first sight that there are barrows in this field. New Road follows the line of a shallow valley with the land rising up on either side. The fields are defined by hedged boundaries with sparse small hedgerow trees.
- 14.13.48 The designation (**Appendix 14C**) describes the assets as:
- SM1011128 'The monument includes a bowl barrow forming part of a wider round barrow cemetery and situated on the north-facing slope of Redhill, 300m NNE of Quarry Farm. The barrow has a mound 12m wide and c.0.5m high surrounded by a ditch from which material was quarried during its construction. This has become infilled over the years but survives as a buried feature c.2m wide. The monument is one of at least six barrows which originally formed the round barrow cemetery at Redhill.'*
- 1011129 'The monument includes a levelled bowl barrow forming part of a wider round barrow cemetery and situated on a terrace on the north-facing slope of Redhill, 230m NNE of Quarry Farm. Although the barrow mound was levelled by ploughing during the Second World War, the encircling ditch or 'ring ditch' can still be identified on aerial photographs defining an area c.15m across. It was from the ditch that material was quarried during the construction of the monument. This has subsequently become infilled but survives as a buried feature c.2m wide. The monument is one of at least six bowl barrows which originally formed the round barrow cemetery at Redhill.'*

SM1011126 *'The monument includes a bowl barrow forming part of a wider round barrow cemetery, situated on the north-facing slope of Redhill, 420m ENE of Quarry Farm. The barrow has a mound 24m wide and c.0.5m high surrounded by a ditch from which material was quarried during its construction. This has become infilled over the years but survives as a buried feature c.2m wide. Part of a sarsen stone c.0.5m by 0.3m has been exposed in the western area of the mound: this may form part of a cist covering the burial. The barrow is one of at least six bowl barrows which originally formed the round barrow cemetery at Redhill.'*

SM1011127 *'The monument includes two bowl barrows forming part of a wider round barrow cemetery. The barrows are aligned broadly north-east to south-west and are situated on the north-facing slope of Redhill, 400m north-east of Quarry Farm. The northern barrow has a mound 15m wide and c.0.75m high; the southern barrow has a mound 25m wide and c.0.8m high. Each mound is surrounded by a ditch from which material was quarried during their construction. These ditches have become infilled over the years but survive as buried features c.2m wide. The two bowl barrows belong to a group of at least six barrows which originally formed the Redhill round barrow cemetery. Excluded from the scheduling are all fence posts which lie within its boundary although the ground beneath them is included'.*

Understanding and appreciation

- 14.13.49 The nature of the individual barrows is described in the asset descriptions for the barrows on Felton Hill set out above. At this site the barrows are grouped together to form a round barrow cemetery and date to the Bronze Age. They often display considerable range of burial rite, plan and form, frequently including different types of round barrow, however in this case the barrows all appear to be of similar form. Barrow cemeteries often occupy prominent locations, and they are a major historic element in the modern landscape, whilst their diversity and their longevity as a monument type provide important information on the variety of beliefs and social organisation amongst early prehistoric communities. They are particularly representative of their period and a substantial proportion of surviving or partly-surviving examples are considered worthy of protection. Despite the proximity of the A38 to the west and Bristol Airport to the north, the setting of the asset retains a rural feel and background noise is not a constant detracting element of its setting, though aircraft can be seen and heard as they approach or depart Bristol Airport.

Heritage significance

- 14.13.50 The designation (**Appendix 14C**) describes the heritage significance as:
- 'The barrows form an integral part of one of only three round barrow cemeteries known in the county of Avon'.*
- 14.13.51 As a SM, these assets are of **high** heritage significance. Their setting makes some contribution to their heritage significance as they form a cemetery group and their topographic context is likely to have influenced their location. However, the very limited extent of visible remains greatly limits the contribution of any views of and from the monuments to an appreciation of the nature. Their archaeological interest as an unusual cemetery type for this region provides their greatest value.

Predicted effects and their significance

- 14.13.52 The Bristol Airport boundary lies approximately 300m to the north of this cemetery, with the nearest new build element of the Proposed Development being the Silver Zone Car Park Extension (Phase 2) at a distance of approximately 860m to the north-west. Other elements of the Proposed Development, including the proposed eastern walkway and east pier, the operation of the proposed new east taxiway and the proposed southern and western extensions to the terminal

building will be approximately 1.2-1.5km to the north. Due to topography, no part of the Bristol Airport site is visible from the monument, as established during the site visit.

Construction

- 14.13.53 Due to topography, no part of the construction activities will be visible from this asset and so there will be no discernible change to the setting of the barrow cemetery as a result of visual changes arising from the construction of the Proposed Development. The construction noise assessment (refer to **Appendix 7G**) does not identify an increase above the baseline for receptors in the vicinity of this asset, and consequently there will be **no effect**.

Operation

- 14.13.54 Due to topography, no newly built element of the Proposed Development will be visible from this asset and so there will be no discernible change to the setting of the barrow cemetery as a result of visual changes arising from the operation of the Proposed Development. The noise assessment (**Chapter 7: Noise and Vibration**, specifically **Table 7.37**) identifies that the Proposed Development would not result in an increase in the overall exposure to air noise at the nearest residential receptors located at Lulsgate Bottom to the north and Redhill to the south-west. It is therefore concluded that there would not be an increase in air noise that would affect the perception or appreciation of this asset. Consequently, there will be **no effect** on this asset.
- 14.13.55 A summary of the results of the assessment of the settings assessment is provided in **Table 14.13**.

Table 14.13 Summary of significance of adverse effects on settings of heritage assets

Receptor and summary of predicted effects	Heritage significance of receptor ¹	Magnitude of change ²	Significance ³	Summary rationale
Grade II listed Windmill House (LB1158202)	High	Construction: Negligible	Minor (Not Significant)	The asset is immediately adjacent to the eastern edge of the Bristol Airport site, in which there would be little if any construction activity.
		Operation: Negligible	Minor (Not Significant)	There would be little change in the eastern part of the Bristol Airport site.
Long barrow 350m southwest of Cornerpool Farm (SM1008291)	High	Construction: Negligible	Minor (Not Significant)	Initial construction would involve creation of a bund to screen further construction activities and limit duration of effect.
		Operation: Negligible	Minor (Not Significant)	Modest curtailing of views north from the monument.
Oval barrow on Felton Hill 100m east of The Round House (SM1008300)	High	Construction: Negligible	Minor (Not Significant)	Limited visibility of construction of the extension to the terminal building some 1.2km from the barrow will not substantially alter the existing setting.
		Operation: Negligible	Minor (Not Significant)	Changes to the setting of the barrow will be limited due to the distance from the built elements of the Proposed Development.
Two confluent bowl barrows on Felton Hill (SM1008361)	High	Construction: None	No effect	There will be no discernible change to the setting of the barrow cemetery as a result of the construction of the development.
		Operation: None	No effect	There will be no discernible change to the setting of the barrow cemetery as a result of the operation of the development.
Redhill round barrow cemetery (SM1011126, 1011127, 1011128, 1011129)	High	Construction: None	No effect	There will be no discernible change to the setting of the barrow cemetery as a result of the construction of the development.
		Operation: None	No effect	There will be no discernible change to the setting of the barrow cemetery as a result of the operation of the development.

1. The heritage significance of a receptor is defined using the criteria set out in **Section 14.9** and is defined as negligible, low, medium and high.
2. The magnitude of change on a receptor resulting from activities relating to the development is defined using the criteria set out in **Section 14.9** and is defined as negligible, low, medium and high.

3. The significance of the environmental effects is based on the combination of the sensitivity/importance/interest of a receptor and the magnitude of change and is expressed as major (significant), moderate (probably significant) or minor/negligible (not significant), subject to the evaluation methodology outlined in **Section 14.9**.

14.14 Consideration of optional additional mitigation or compensation

- 14.14.1 No additional mitigation measures are proposed to further reduce the historic environment effects that are identified in this ES. This is because all relevant and implementable measures have been embedded into the development proposals and are assessed in this chapter. These measures are considered likely to be effective and deliverable and address the likely significant effects of the Proposed Development.
- 14.14.2 Loss of any archaeological remains could be mitigated through a programme of archaeological recording, with dissemination of the results. However, the completion of trial trenching within the site of the Silver Zone Car Park Extension (Phase 2) did not identify any features of archaeological interest. Other than previously disturbed land at the A38/Downside Road junction, there are no other areas of new land-take included within the Proposed Development and so it is concluded that a programme of archaeological recording is not required. Effects on the setting of SM (Long barrow 350m southwest of Cornerpool Farm (SM1008291)) will be limited by the establishment of a new earth bund around the Silver Zone Car Park Extension (Phase 2). An earth bund is located around the existing Silver Zone Car Park (Phase 1) and this appropriately screens the view north from the monument.

14.15 Conclusions of significance evaluation

- 14.15.1 There will be **no significant effects** as a direct loss of or disturbance to any heritage assets as a result of the Proposed Development. Initial geophysical survey identified a number of features of potential archaeological interest within the site of the Silver Zone Car Park Extension (Phase 2). However, subsequent trial trenching did not identify any features of archaeological interest. Construction of Silver Zone Car Park Extension (Phase 2) has the potential to affect the setting of a SM (Long barrow 350m southwest of Cornerpool Farm (SM1008291)). However, with the establishment of a soil bund at the start of the construction phase, this will not be significant.

14.16 Implementation of environmental measures

- 14.16.1 **Table 14.14** describes the environmental measures embedded within the Proposed Development and the means by which they will be implemented, i.e. they will have been secured through the planning conditions and the Construction Environmental Management Plan (CEMP) (**Appendix 2B**).

Table 14.14 Summary of environmental measures to be implemented – relating to Historic Environment

Environmental measure	Responsibility for implementation	Compliance mechanism	ES section reference
Avoidance of disturbance to of former lead extraction (HER 2186)	Developer/Contractor	CEMP (Appendix 2B)	Section 14.11
Early construction of bund to screen Long barrow 350m southwest of Cornerpool Farm (SM1008291)	Developer/Contractor	CEMP (Appendix 2B) /Planning condition	Section 14.13