

LAND AT CHIVERTON CROSS BLACKWATER ST AGNES CORNWALL

Results of a Heritage Assessment and Geophysical Survey



South West Archaeology Ltd. report no. 190607



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Land at Chiverton Cross, Blackwater, St Agnes, Cornwall Results of a Heritage Assessment and Geophysical Survey

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Report Version: FINAL
7th June 2019

Work undertaken by SWARCH for a Private Client

SUMMARY

This report presents the results of a heritage assessment and geophysical survey carried out by South West Archaeology Ltd. (SWARCH) on land at Chiverton Cross, Blackwater, Cornwall. The site is located north-east of the village of Blackwater off the B3277 opposite the Chiverton Arms public house. Historic sources and the HER indicate that the site is located in a landscape of prehistoric settlement and funerary monuments, with later post-medieval mining. The surrounding landscape shows signs of medieval and post-medieval sub-division.

The geophysical survey identified predominantly a series of discrete ovoid anomalies distributed across the site and likely to represent pits and tree-throws, as well as linear anomalies reflecting recent ploughing across the site. Ploughing evident in the survey results will have truncated any buried potential archaeological resource to some extent. Despite being located in area of archaeological potential, it would appear that on the basis of the geophysical survey, the archaeological potential of the site is low, containing only features which are likely to be associated with the land having previously been wooded as evident on historic (19th century) mapping.

*In terms of indirect impacts, most of the designated heritage assets in the wider area are located at such a distance to minimise the impact of the proposed development, or else the contribution of setting to overall significance is less important than other factors. The landscape context of many of these buildings and monuments is such that they would be partly or wholly insulated from the effects of the proposed development by a combination of local blocking from trees, buildings or embankments, or that other modern intrusions have already impinged upon their settings. The only sites where there is the potential for an appreciable impact are: the Gwennap Mining District World Heritage Site (**negative-minor**); the Scheduled Ancient Monuments of Bowl Barrow south of St Peters (**neutral**), the Three Burrows (**neutral**), and Two Bowl Barrows at Two Burrows (**neutral**); and the Grade II Listed Church of St Peter (**negligible**), Highlands (**negligible**), School Rooms (**neutral**), Vicarage (**neutral**)*

*With this in mind, the overall impact of the proposed development can be assessed as **negligible** to **negative/minor**. The impact of the development on any buried archaeological resource may be **permanent** and **irreversible**, although the significance of any buried archaeological deposits remains unknown at present, though appears limited, this can be determined and mitigated through a pre-commencement planning condition.*



June 2019

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ACKNOWLEDGEMENTS

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1.0 INTRODUCTION

LOCATION:	CHIVERTON CROSS, BLACKWATER
PARISH:	ST AGNES
COUNTY:	CORNWALL
NGR:	SW 74470 46917
PLANNING NO.	PA19/01865
SWARCH REF.	ABC19

1.1 PROJECT BACKGROUND

South West Archaeology Ltd. (SWARCH) was commissioned to undertake an archaeological impact assessment and geophysical survey on land at Chiverton Cross, Blackwater, Cornwall, as part of a planning application for a proposed hotel and restaurant. This work was undertaken in accordance with best practice and CifA guidelines.

1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

The Chiverton Cross Roundabout links the A30, A390, A3075 and B3277 roads approximately 1.2km north-east of the village of Blackwater, and is located c.4.2km south-east of St Agnes and c.8km north-west of Truro. The site is situated within fields opposite the Chiverton Arms public house south of the B3277 road, c.230m west of the roundabout at an altitude of c.145m AOD (Figure 1). The soils of this area are the well-drained fine loamy soils of the Denbigh 2 Association where they border the slowly permeable seasonally waterlogged fine loamy soils of the Sportsmans Association (SSEW 1983), which overlie the mudstones and sandstones of the Porthtowan Formation, part of the Gramscatho Group (BGS 2019).

1.3 METHODOLOGY

The desk-based assessment follows the guidance as outlined in: *Standard and Guidance for Archaeological Desk-Based Assessment* (CifA 2014a) and *Understanding Place: historic area assessments in a planning and development context* (English Heritage 2012).

The historic visual impact assessment follows the guidance outlined in: *Conservation Principles: policies and guidance for the sustainable management of the historic environment* (English Heritage 2008a), *The Setting of Heritage Assets* (Historic England 2015), *Seeing History in the View* (English Heritage 2011b), *Managing Change in the Historic Environment: Setting* (Historic Scotland 2010), and with reference to *Visual Assessment of Wind Farms: Best practice* (University of Newcastle 2002) and *Guidelines for Landscape and Visual Impact Assessment 3rd edition* (Landscape Institute 2013).

This geophysical survey was undertaken in accordance with best practice and the gradiometer survey follows the general guidance as outlined in: *Geophysical Survey in Archaeological Field Evaluation* (English Heritage 2008b) and *Standard and Guidance for Archaeological Geophysical Survey* (CifA 2014b).

1.4 HISTORICAL & ARCHAEOLOGICAL BACKGROUND

Blackwater is situated within the mining district and parish of St. Agnes, and the hundred and deanery of Pyder (Lysons 1814). The surrounding landscape is littered with the copper and tin mines of the Gwennap-Chacewater mining district, known as ‘the richest square mile on Earth’

due to its extensive copper and arsenic production; producing over one third of the global copper in the late 18th century.

The site is situated within a landscape rich with prehistoric monuments, the Cornwall and Scilly Historic Environment Record (HER) recording a number of Bronze Age barrows in close proximity to the proposal site, including on land immediately north of the B3277; additional monuments and Iron Age or Romano-British settlements within the wider landscape. Most of the other known heritage assets in the vicinity are related to the post-medieval mining of the area, but include an early medieval cross. A post-medieval milestone is situated to the immediate south-east of the proposal site.



FIGURE 1: SITE LOCATION.

2.0 HERITAGE IMPACT ASSESSMENT

2.1 HERITAGE IMPACT ASSESSMENT - OVERVIEW

The purpose of heritage impact assessment is twofold: Firstly, to understand – insofar as is reasonably practicable and in proportion to the importance of the asset – the significance of a historic building, complex, area, monument or archaeological site (the ‘heritage asset’). Secondly, to assess the likely effect of a proposed development on the heritage asset (direct impact) and/or its setting (indirect impact). This methodology employed in this assessment is based on the approach outlined in the relevant DoT guidance (DMRB vol.11; WEBTAG), used in conjunction with the ICOMOS (2011) guidance and the staged approach advocated in *The Setting of Heritage Assets* (GPA3 Historic England 2015). The methodology employed in this assessment can be found in Appendix 3.

2.2 NATIONAL POLICY

General policy and guidance for the conservation of the historic environment are now contained within the *National Planning Policy Framework* (Department for Communities and Local Government 2012). The relevant guidance is reproduced below:

Paragraph 128

In determining applications, local planning authorities should require the applicant to describe the significance of any heritage assets affected, including the 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 be consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which a 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.

Paragraph 129

Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset’s conservation and any aspect of the proposal.

A further key document is the Planning (Listed Buildings and Conservation Areas) Act 1990, in particular section 66(1), which provides *statutory protection* to the setting of Listed buildings:

In considering whether to grant planning permission for development which affects a listed building or its setting, the local planning authority or, as the case may be, the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses.

2.3 LOCAL POLICY

Policy 24: *Historic Environment* in *The Cornwall Local Plan: Strategic Policies 2010-2030* makes the following statement:

All development proposals should be informed by proportionate historic environment assessments and evaluations... identifying the significance of all heritage assets that would be affected by the proposals and the nature and degree of any affects and demonstrating how, in order of preference, any harm will be avoided, minimised or mitigated.

Great weight will be given to the conservation of Cornwall's heritage assets... Any harm to the significance of a designated or non-designated heritage asset must be justified... In those exceptional circumstances where harm to any heritage assets can be fully justified, and the development would result in the partial or total loss of the asset and/or its setting, the applicant will be required to secure a programme of recording and analysis of that asset, and archaeological excavation where relevant, and ensure the publication of that record to an appropriate standard in public archive.

2.4 STRUCTURE OF ASSESSMENT – DIRECT AND INDIRECT IMPACTS

This assessment is broken down into two main sections. Section 3.0 addresses the *direct impact* of the proposed development i.e. the physical effect the development may have on heritage assets within, or immediately adjacent to, the development site. Designated heritage assets on or close to a site are a known quantity, understood and addressed via the *design and access statement* and other planning documents. Robust assessment, however, also requires a clear understanding of the value and significance of the *archaeological* potential of a site. This is achieved via the staged process of archaeological investigation detailed in Section 3.0. Section 4.0 assesses the likely effect of the proposed development on known and quantified designated heritage assets in the local area. In this instance the impact is almost always indirect i.e. the proposed development impinges on the *setting* of the heritage asset in question, and does not have a direct physical effect.

3.0 DIRECT IMPACTS

3.1 STRUCTURE OF ASSESSMENT

For the purposes of this assessment, the *direct effect* of a development is taken to be its direct physical effect on the buried archaeological resource. In most instances the effect will be limited to the site itself. However, unlike designated heritage assets (see Section 4.0) the archaeological potential of a site, and the significance of that archaeology, must be quantified by means of a staged programme of archaeological investigation. Sections 3.2-3.5 examine the documentary, cartographic and archaeological background to the site; Section 3.6 details the results of a geophysical survey; Section 3.7 summarises this information in order to determine the significance of the archaeology, the potential for harm, and outlines mitigation strategies as appropriate. Appendix 1 details the methodology employed to make this judgement.

3.2 DOCUMENTARY HISTORY

Blackwater is situated within the mining district and parish of St. Agnes, and the hundred and deanery of Pyder (Lysons 1814). Blackwater (ModE *black* + *water*), formerly 'Black Water Coomb' c.1696, means 'black stream' (Watts 2010) and is likely to relate to either the appearance of the nearby stream as it runs through the local slates; or has been linked in contrast to nearby 'Chacewater' ('hunting ground'), and perhaps relates to an absence of game or the topography preventing its hunting.

The surrounding landscape is littered with the copper and tin mines of the Gwennap-Chacewater mining district, known as 'the richest square mile on Earth' due to its extensive copper and arsenic production; producing over one third of the global copper in the late 18th century. These mines include: Great Wheal busy (copper and arsenic); North Treskerby (copper and tin); East Downs (copper); Hallenbeagle (copper and tin); Killifreth (copper and tin); Wheal Rose (copper and tin); Wheal Daniell (ochre and lead); Stencoose and Mawla Mine (copper); Wheal Unity Wood (copper and tin); and Great North Downs (copper and tin) all within 2.5km of Blackwater. The Wheal Busy mines are thought to have been mined since the 16th century, and were formerly known as Chacewater mine, a notable copper producer from the early 1720's. The North Wheal Busy mine included the Boscawen (formerly Hallenbeagle) mine and together formed a sett known as 'Wheal Truro' with numerous shafts (Cornwall in Focus 2015). The North Wheal Busy mine was in operation from 1854 under the ownership of the North Busy Mining Company, though work was suspended in 1863-65, and finally ceased in 1886.

3.3 CARTOGRAPHIC DEVELOPMENT

The earliest detailed cartographic source available to this study is the tithe map of c.1841 (Figure 2). This shows the site as two small rectangular fields on the end of a much larger field running along the side of the road and surrounding common land. The accompanying tithe apportionment (Table 1) indicates that the land within the proposal area was owned by Davey, Stephen and Richard, and occupied by William Chenoweth.

The curving and irregular field boundaries of the wider landscape indicate that the straight bounded fields of the proposal site form part of the post-medieval enclosure of larger medieval landscape. The field names are largely prosaic, *Croft* and *Common and Roads*.

The 1841 map depicts the western half of the site as being woodland, though by 1842 the apportionment indicates that this use had changed, *Croft* being laid to pasture and *Field* to the south being arable. This change is demonstrated on the later historic mapping, the 1st edition Ordnance Survey map of 1887 (Figure 3) depicting *Croft* as an open field, with woodland being

retained within the field to the west. However, it does indicate that *Field* still retained its woodland element.

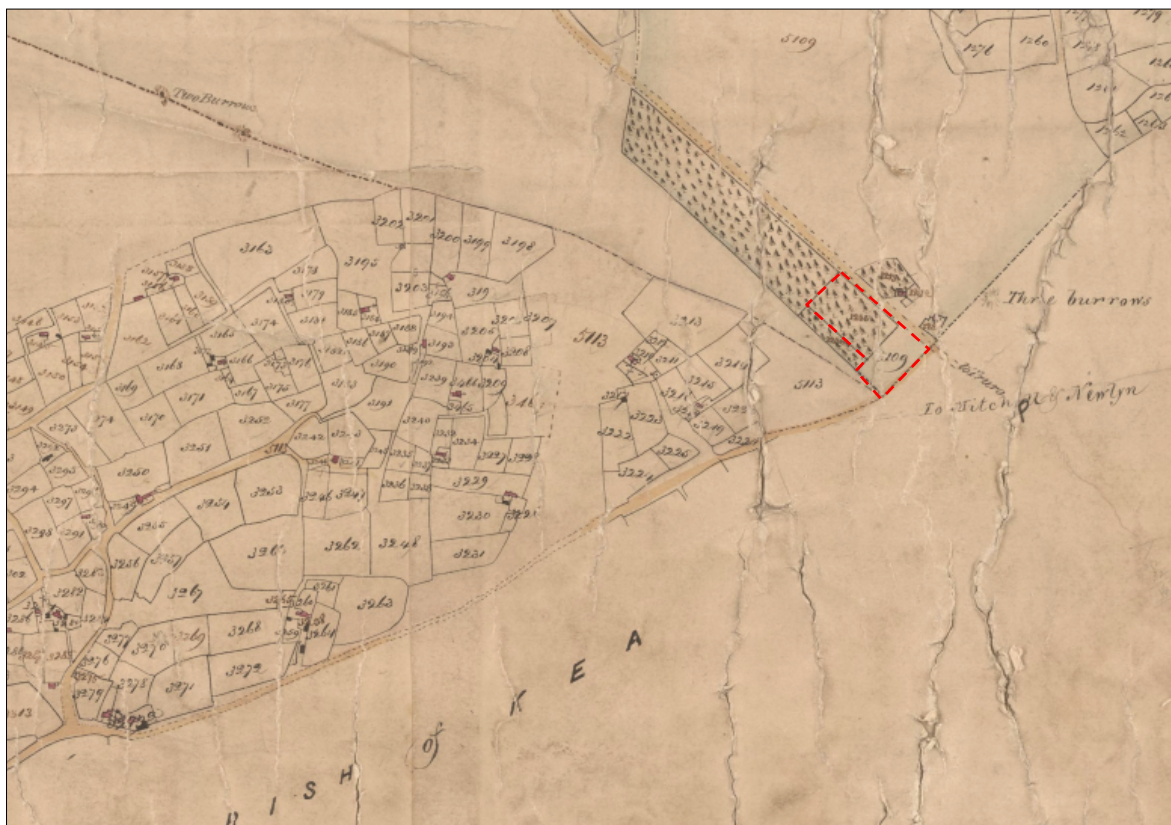


FIGURE 2: EXTRACT FROM THE 1841 ST AGNES TITHE MAP (CRO); THE SITE IS INDICATED.

TABLE 1: EXTRACT FROM THE 1842 ST AGNES TITHE APPORTIONMENT.

Number	Landowner	Tenant	Field Name	Cultivation
Mithian				
1255	Davey, Stephen and Richard	William Chenoweth	Croft	Pasture
1256			Field	Arable
5109			Common & Roads	

By 1893, the later tithe map (Figure 4) indicates that *Field* may indeed have become arable, although its depiction as woodland again by the 1908 Ordnance Survey 2nd edition map (Figure 4) may suggest that this was a stylistic choice. The historic mapping indicates that there had been very little change in the immediate landscape besides limited boundary alteration and small scale settlement growth.

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FIGURE 3: EXTRACT FROM THE 1887 1ST ND EDITION OS 6" MAP (SURVEYED 1886) (CORNWALL SHEET LVII.NW); THE SITE IS INDICATED.



FIGURE 4: EXTRACT FROM THE 1893 ST AGNES TITHE MAP (CRO); THE SITE IS INDICATED.



FIGURE 5: EXTRACT FROM THE 1908 2ND EDITION OS 6" MAP (REVISED 1906) (CORNWALL SHEET LVII.NW); THE SITE IS INDICATED.

3.4 ARCHAEOLOGICAL BACKGROUND

There has been little or no archaeological investigation within the immediate area of the proposed site, those that have been carried out largely associated with large scale surveys and assessments of the wider landscape area. Episodes of geophysical survey (Bartlett and Allen 2005) and watching brief during works associated with the renovation of the Chiverton Cross Roundabout (Cole 2006) identifying only evidence of field boundary alteration and agricultural practices.

The site is situated within a landscape rich with prehistoric monuments, the Cornwall and Scilly Historic Environment Record (HER) recording a number of Bronze Age barrows in close proximity to the proposal site, including on land immediately north of the B3277 (SAM1016057, MCO1992, MCO34801, MCO3560), with additional monuments and possible Iron Age or Romano-British enclosure settlements within the wider landscape. Most of the other known heritage assets in the vicinity are related to the post-medieval mining of the area, but include an early medieval cross (MCO5914). A post-medieval milestone (MCO55088) is located to the immediate south-east of the proposal site (see Table 2 and Figure 6).

The historic fieldscape in this area is characterised by the Cornwall and Scilly HLC as *post-medieval enclosed land*, though there are elements of medieval farmland. Medieval farmland is described as *Anciently Enclosed Land* (AEL) and formed the agricultural heartland of Cornwall with the settlements and field systems typically having clear medieval antecedents. AEL has also been strongly demonstrated to indicate areas first settled, enclosed and farmed during later Prehistory and continuing into the early Medieval period. It is considered highly likely that buried archaeology dating to the Prehistoric and Romano-British periods generally survives within areas of AEL.

3.4.1 PREHISTORIC 4000BC - AD43

The evidence for Prehistoric activity in this area is relatively substantial, probably reflecting the elevated landscape. The earliest evidence dates to the Bronze Age and includes numerous

funerary monuments identified across the landscape (including SAM1016056, SAM1016057, SAM1016355). It was not until the Iron Age that there is evidence for settlement, with sites identified through cropmarks at Two Burrows (MCO34887) and Chiverton (MCO34824, MCO34825, MCO34826), though it is likely that there are more scattered throughout the landscape.

3.4.2 ROMANO-BRITISH AD43 – AD409

The evidence for Romano-British activity is sparse. However, it is probable that the Iron Age settlements of the area continued into this period.

3.4.3 MEDIEVAL AD410 – AD1540

The archaeology of the medieval period is poorly represented, the only indicative site in the vicinity being a possible early medieval cross fragment (MCO5914) at Three Burrows. Cartographic evidence records much of the surrounding landscape as common land in the early post-medieval period and it is likely that much of the landscape was used as woodland and for grazing animals; though with elements of open and strip field agriculture existing in the wider field systems.

3.4.4 POST-MEDIEVAL AND MODERN AD1540 - PRESENT

Population and settlement expanded during the post-medieval period, those farms that do survive, including Kea Farm (MCO34794) being constructed during this period. However, much of the development of this area was associated with the growth of the industrial economy, mines including Prince Coburg (MCO12456) and Burra Burra (MCO11903) being worked in what had formerly been the common ground. These mines led to the creation and expansion of settlements such as Blackwater and Chiverton with the construction of St Peter's Church and associated buildings (List1141481, List1141482, List1328719).

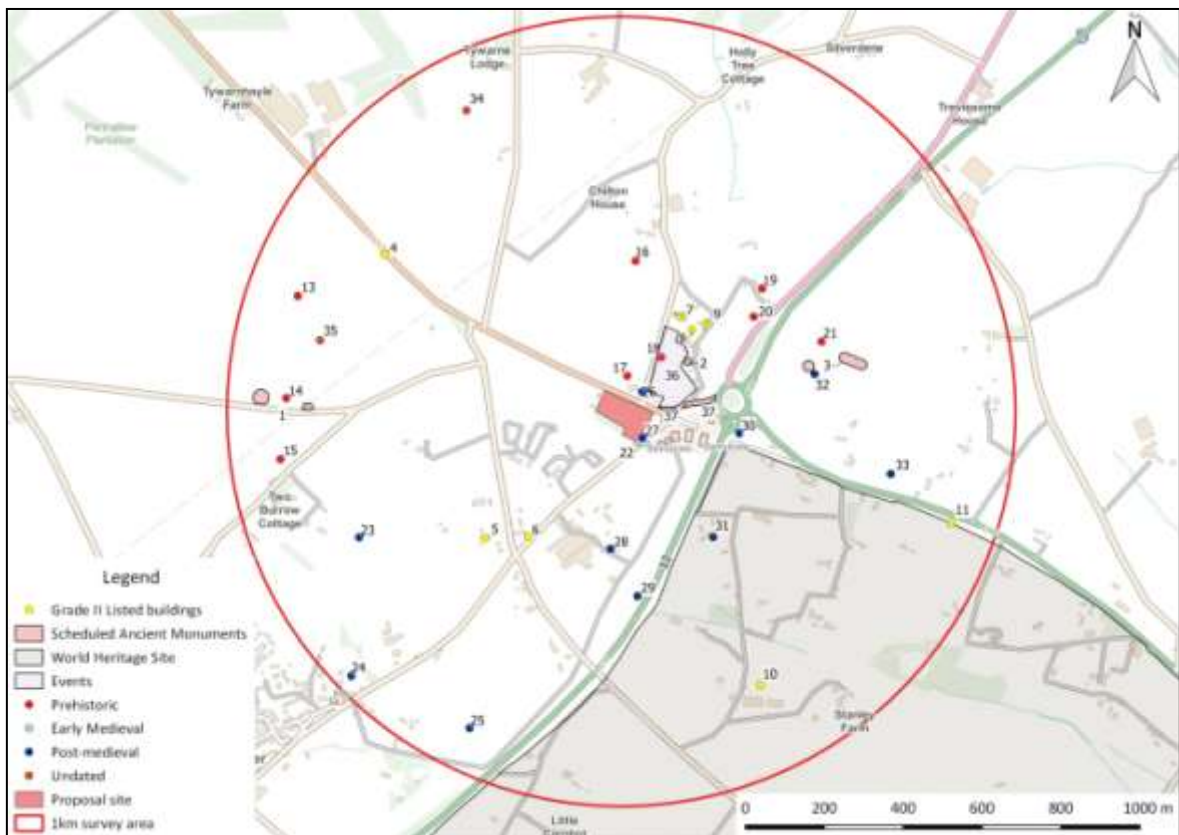


FIGURE 6: NEARBY HERITAGE ASSETS (THE SITE IS INDICATED) (SOURCE: CORNWALL & SCILLY HER).

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TABLE 2: TABLE OF NEARBY DESIGNATED AND UNDESIGNATED HERITAGE ASSETS (SOURCE: CORNWALL & SCILLY HER).

No.	Mon ID.	Name	Record	Details
Designated Assets				
1	SAM1016355	Two Bowl Barrows at Two Burrows, 500m north and 510m north-east of Two Burrows Farm	Scheduled Monument	Two Bronze Age bowl barrows survive as earthworks.
2	SAM1016057	Bowl Barrow 125m south of St Peter's Church at Three Burrows	Scheduled Monument	A Bronze Age bowl barrow survives as an earthwork.
3	SAM1016056	The Three Burrows	Scheduled Monument	A series of three plough-reduced Bronze Age barrows survive as earthworks.
4	List1137226	Milestone at SW738472	Listed Building	Grade II Listed early 19 th century milestone.
5	List1328688	Highlands	Listed Building	Grade II Listed 18 th century house and two cottages, now one house.
6	List1328972	Milestone at SW741465	Listed Building	Grade II Listed 18 th century milestone.
7	List1141481	Church of St Peter	Listed Building	Grade II Listed church built in 1847 and designed by William White.
8	List1328719	Vicarage	Listed Building	Grade II Listed former vicarage built c.1847 and designed by William White.
9	List1141482	School Room immediately east of Church of St Peter	Listed Building	Grade II Listed school room or church hall, built in the mid 19 th century and possibly designed by William White.
10	List1140954	Primrose Farmhouse	Listed Building	Grade II Listed early 19 th century farmhouse.
11	List1328983	Milestone at SW753466	Listed Building	Early 19 th century, or re-cut in the early 19 th century, milestone.
12		Gwennap Mining District	World Heritage Site	The Gwennap district of the Cornish Mining World Heritage Site.
Undesignated Assets				
13	MCO34887	Two Burrows – Prehistoric Enclosure	Cropmark	A possible sub-rectangular enclosure is partially visible as a cropmark on aerial photographs.
14	MCO2018 MCO3924 MCO3926 MCO3927	Two Burrows – Bronze Age Barrow Cemetery	Earthwork	A group of six or seven barrows at the western end of an elongated upland plateau. Associated with SAM 1016355.
15	MCO3928 MCO3929	Two Burrows – Bronze Age Barrow	Documentary	Two barrows mentioned by Thomas in 1851.
16	MCO34824	Chiverton – Iron Age Round, Romano-British Round	Cropmark	A possible curvilinear, multivallate enclosure visible as a series of cropmark ditches on aerial photographs.
17	MCO1992	Three Burrows – Bronze Age Barrow	Earthwork	One of a group of nine or ten barrows at the eastern end of an elongated plateau.
	MCO3560	Three Burrows – Bronze Age Barrow	Earthwork	A barrow recorded by Symons in 1870 and visible as an irregular, low grassy mound.
	MCO34801	Three Burrows – Bronze Age Barrow	Earthwork	A possible round barrow, visible as a low circular mound.
18	MCO3557	Three Burrows – Bronze Age Barrow	Documentary	The site of a barrow recorded by Symons in 1870.
	MCO3558 MCO3559	Three Burrows – Bronze Age Barrow	Documentary	Two features described by the Ordnance Survey as 'ditched features'.
19	MCO34826	Chiverton – Bronze Age Round, Romano-British Round	Cropmark	A possible curvilinear round is visible as a faint cropmark ditch on aerial photographs.
20	MCO34825	Chiverton – Iron Age Round, Romano-British Round	Cropmark	A possible curvilinear round is partially visible as an indistinct low earth bank on aerial photographs.
21	MCO34797 MCO34799	Three Burrows – Bronze Age Barrow	Cropmark	A possible small round barrow is visible as cropmark mound on aerial photographs.
22	MCO5914	Three Burrows – Early Medieval Cross, Early Medieval Boundary Stone	Structure	A plain granite pillar situated at this location is suggested to be cross, and may be early medieval in date.
23	MCO12456	Prince Coburg – Post-medieval Mine	Documentary	The Prince Coburg mine is recorded at this location on 19 th century mapping.
24	MCO33558	Blackwater – Post-medieval Pump	Documentary	A water pump is recorded at this location on the 1878 OS map.
25	MCO34787	Carnhot – Post-medieval Farmstead	Cropmark	A (likely) post-medieval farmstead is visible on aerial photographs, having still been in use in 1946.
26	MCO9018	Chiverton Arms – Post-medieval	Structure	A smithy is recorded outside the Chiverton

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		Blacksmiths Workshop		Arms on the 1878 OS map. It is now used as a store for the public house.
27	MCO55088	Three Burrows – Post-medieval Milestone	Structure	A granite milestone is situated at this location.
28	MCO32320	Three Burrows – Post-medieval Non-conformist Chapel	Structure	A 19 th century Wayside Primitive Methodist Chapel has been converted into a dwelling.
29	MCO34794	Kea Farm – Post-medieval Farmstead	Cropmark	A 19 th century farmstead is visible at this location on aerial photographs, having still been in use in 1946.
30	MCO56103	Chiverton Cross – Post-medieval/modern Well	Structure	A stone-lined well was discovered during works next to Chiverton Cross roundabout.
31	MCO11903	Burra Burra – Post-medieval Mine	Documentary	Burra Burra mine, which was worked for tin, copper and zinc, is recorded here from the mid 19 th century.
32	MCO31905	Three Burrows – Post-medieval Field System	Cropmark	Ditched field boundaries are visible as cropmarks on aerial photographs.
33	MCO31884	Hartley Farm – Post-medieval Field System	Cropmark	Linear ditches are visible as cropmarks on aerial photographs.
34	MCO21592	Greenacres – Undated Enclosure	Cropmark	A rectangular enclosure is visible as cropmarks on aerial photographs.
35	MCO35169	Two Burrows – Undated Linear Earthwork	Cropmark	An unusual linear feature is visible as a cropmark on aerial photographs.
Events				
36	ECO863	Geophysical Survey		
37	ECO2533	Watching Brief		

3.5 AERIAL PHOTOGRAPHY AND LIDAR

Aerial photographs from the 1940s onwards are the primary source of evidence of cropmarks for a number of the heritage assets listed in Table 2, including: the possible settlements at Two Burrows (MCO34887) and Chiverton (MCO24824, MCO34825, MCO34826); and several of the barrow monuments which do not necessarily survive as upstanding earthworks (MCO34797, MCO34799).

Assessment of the readily-available aerial photography and LiDAR for the proposal site indicates that the site is largely clear of visible earthworks, though there is the suggestion of a sub-oval feature on the aerial photographs (Figure 7). However, the overall shape of this appears to change and it is likely to be the result of animal/man tracks.

The available LiDAR data only provides partial coverage of the area surrounding the site, and does not include the proposal site itself.



FIGURE 7: AERIAL PHOTOGRAPH OF THE SITE TAKEN IN 2013 (© GOOGLE EARTH 2017) SHOWING NO CLEAR SIGN OF VISIBLE EARTHWORKS (POSITION OF TRACKS IS INDICATED).

3.6 GEOPHYSICAL SURVEY

3.6.1 INTRODUCTION

An area of c.0.81ha (c.0.31ha Field 1, c.0.49ha Field 2) was the subject of a magnetometry (gradiometer) survey. The purpose of this survey was to identify and record magnetic anomalies within the proposed site. While identified anomalies may relate to archaeological deposits and structures, the dimensions of recorded anomalies may not correspond directly with any associated features. The following discussion attempts to clarify and characterise the identified anomalies. The survey was undertaken on the 29th of May 2019 by P. Bonvoisin; the survey data was processed by P. Bonvoisin.

3.6.2 METHODOLOGY

The gradiometer survey follows the general guidance as outlined in: *Geophysical Survey in Archaeological Field Evaluation* (English Heritage 2008) and *Standard and Guidance for Archaeological Geophysical Survey* (ClfA 2014b).

The survey was carried out using a twin-sensor fluxgate gradiometer (Bartington Grad601). These machines are sensitive to depths of up to 1.50m. The survey parameters were: sample intervals of 0.25m, traverse intervals of 1m, a zigzag traverse pattern, traverse orientation was circumstantial, grid squares of 30x30m. The gradiometer was adjusted ('zeroed') every 0.5-1ha. The survey grid was tied into the Ordnance Survey National Grid. The data was downloaded onto *Grad601 Version 3.16* and processed using *TerraSurveyor Version 3.0.25.0*. The primary data plots and analytical tools used in this analysis were *Shade* and *Metadata*. The details of the data processing are as follows:

Processes: Clip +/- 3SD; DeStripe all traverses, median. DeStagger of particular grids.

Field 1 Details: 0.31635ha surveyed; Max. 98.57nT, Min. -100.00nT; Standard Deviation 19.38nT, mean -0.86nT, median 0.20nT.

Field 2 Details: 0.49455ha surveyed; Max. 99.06nT, Min. -100.82nT; Standard Deviation 13.04nT, mean -0.08nT, median 0.00nT.

3.6.3 SITE INSPECTION

The site is divided into two sub-rectangular fields (F1 and F2) south-west of the Chiverton Cross Roundabout. The survey area was fairly flat, bounded on all sides by Cornish hedgebanks. The site was bordered to the north-east by the B3277, to the north-west and south-east by residential properties and to the south by a small area of woodland. The site was under pasture at the time of survey. A single possible earthwork, a sub-oval depression up to c.0.20m deep was identified towards the centre of Field 2. No finds were recovered. A full complement of site photographs can be found in Appendix 2.



FIGURE 8: DETAIL OF THE HEDGEBANK BOUNDARY BETWEEN F1 AND F2; VIEWED FROM THE SOUTH-WEST.

3.6.4 RESULTS

Table 3, with the accompanying Figures 9 and 10, show the analyses and interpretation of the geophysical survey data. Additional graphic images of the survey data and numbered grid locations can be found in Appendix 1.

TABLE 3: INTERPRETATION OF GRADIOMETER SURVEY DATA.

Anomaly Group	Class and Certainty	Form	Archaeological Characterisation	Comments
1	Weak/moderate positive, possible	Ovoid	Possible pits/tree-throws	Indicative of discrete anomalies such as pits/tree-throws. Responses of c.+10.56nT to +41.38nT.
2	Weak positive, possible	Ovoid	Possible pits/tree-throws	Indicative of discrete anomalies such as pits/tree-throws. Weak responses indicate likely natural features. Responses of c.+4.61nT to +10.36nT.
3	Weak positive and negative	Linear	Agricultural activity	Linear striations covering the entire site with regularity. Weak mixed positive and negative responses suggest shallow ploughing. Responses between -3.19nT and +2.57nT.
4	Di-polar, alternate strong positive and negative, probable	Linear	Probable utility/disturbed ground	Indicative of a modern utility, but may reflect heavily disturbed ground with significant metallic/thermoremnant debris. Responses of between -100.00nT to +98.21nT.
5	Strong mixed, possible	Irregular	Disturbed ground	Irregular area of mixed strong responses including bipolar and possible thermoremnant debris. Responses of between -100.29nT and +98.21nT.

3.6.5 DISCUSSION

The survey identified five groups of anomalies. These were predominantly discrete ovoid anomalies likely to be associated with pits or tree throws. The general geological variation across the site was between +/-3nT. The identified anomaly groups include: a number of possible pits/tree throws; and possible buried ferrous/metallic items. A series of linear anomalies, very close to the natural responses, also cover the site and reflect various episodes of ploughing and agricultural practices. Responses around the edges of the fields are indicative of heavily disturbed ground, though include dipolar responses that are indicative of modern services.

Anomaly Group 1 consists of a number of weak-moderate (+10.56nT to +41.38nT) positive ovoid responses indicative of cut and filled discrete features such as pits or tree-throws. The overall strength of these responses indicates that they are more likely pits than natural features.

Anomaly Group 2 consists of weak (+4.61nT to +10.36nT) positive ovoid responses indicative of cut and filled discrete features such as pits or tree-throws. The overall strength of these features indicates that they are more likely natural features, and may indicate that the woodland surrounding the proposal site on the historic mapping at one point extended into the site.

Anomaly Group 3 consists of a series of weak mixed positive (+1.08nT to +2.57nT) and negative (-0.37nT to 3.19nT) linear responses orientated broadly north-west to south-east across the site. They are narrowly and consistently spaced and likely to represent the most recent episode of ploughing across the site.

Anomaly Group 4 consists of strong dipolar (-11.54nT to -100.29nT; +20.09nT to +98.21nT) linear anomalies indicative of modern utility features. They are positioned against the existing field boundaries in areas that are also subject to modern disturbance, Di-polar anomalies and magnetic disturbance likely due to modern or metallic debris and metallic components along the boundaries of the field (Group 5), and it is possible that they indicate stronger elements of the same.

LAND AT CHIVERTON CROSS, BLACKWATER, ST AGNES, CORNWALL



FIGURE 9: SHADE PLOT OF GRADIOMETER SURVEY DATA; MINIMAL PROCESSING (SITE BOUNDARY OUTLINED IN BLUE).

LAND AT CHIVERTON CROSS, BLACKWATER, ST AGNES, CORNWALL



FIGURE 10: INTERPRETATION OF GRADIOMETER SURVEY DATA (SITE BOUNDARY OUTLINED IN BLUE).

3.7 ARCHAEOLOGICAL POTENTIAL AND IMPACT SUMMARY

The direct *effect* of the development would be the disturbance or destruction of archaeological features or deposits present within the footprint of the development; the *impact* of the development would depend on the presence and significance of archaeological features and deposits.

Based on the results of the desk-based assessment and geophysical survey, the archaeological potential of the site would appear to be *Low*. Further archaeological works on this site would not appear to be worthwhile.

TABLE 4: SUMMARY OF DIRECT IMPACTS.

Asset	Type	Distance	Value	Magnitude of Impact	Assessment	Overall Assessment
Direct Impacts						
Unidentified archaeological features	U/D	Onsite	Unknown	Major	Medium	Negative/Minor
<i>After mitigation</i>			Negligible	Minor	Neutral/Slight	Neutral/Negligible

4.0 INDIRECT IMPACTS

4.1 STRUCTURE OF THE ASSESSMENT

For the purposes of this assessment, the *indirect effect* of a development is taken to be its effect on the wider historic environment. The principal focus of such an assessment falls upon identified designated heritage assets like Listed buildings or Scheduled Monuments. Depending on the nature of the heritage asset concerned, and the size, character and design of a development, its effect – and principally its visual effect – can impact on designated assets up to 20km away.

The methodology adopted in this document is based on that outlined in *The Setting of Heritage Assets* (GPA3 Historic England 2015), with reference to ICOMOS (2011) and DoT (DMRB, WEBTAG) guidance. The assessment of effect at this stage of a development is an essentially subjective one, but one based on the experience and professional judgement of the authors. Appendix 1 details the methodology employed.

This report follows the staged approach to proportionate decision making outlined in *The Setting of Heritage Assets* (Historic England 2015, 6). *Step one* is to identify the designated heritage assets that might be affected by the development. The first stage of that process is to determine an appropriate search radius, and this would vary according to the height, size and/or prominence of the proposed development. For instance, the search radius for a wind turbine, as determined by its height and dynamic character, would be much larger than for a single house plot or small agricultural building. The second stage in the process is to look at the heritage assets within the search radius and assign to one of three categories:

- Category #1 assets: Where proximity to the proposed development, the significance of the heritage asset concerned, or the likely magnitude of impact, demands detailed consideration.
- Category #2 assets: Assets where location and current setting would indicate that the impact of the proposed development is likely to be limited, but some uncertainty remains
- Category #3 assets: Assets where location, current setting, significance would strongly indicate the impact would be no higher than negligible and detailed consideration both unnecessary and disproportionate. These assets are still listed in the impact summary table.

For *Step two* and *Step three*, and with an emphasis on practicality and proportionality (*Setting of Heritage Assets* p15 and p18), this assessment then groups and initially discusses heritage assets by category (e.g. churches, historic settlements, funerary remains etc.) to avoid repetitious narrative; each site is then discussed individually, and the particulars of each site teased out. The initial discussion establishes the baseline sensitivity of a given category of monument or building to the potential effect, the individual entry elaborates on local circumstance and site-specific factors. The individual assessments should be read in conjunction with the overall discussion, as the impact assessment is a reflection of both.

4.2 QUANTIFICATION

The size and location of the proposed development would indicate a search radius of 1km is sufficient to identify those designated heritage assets where an appreciable effect might be experienced. A search radius of up to 2.5km is appropriate for high-value assets where distance views are integral to the significance of the asset in question.

There are only a few designated heritage assets in the local area (see Figure 6 and Table 2): one World Heritage Site; five Scheduled Ancient Monuments; and four GII Listed structures. There are no Conservation Areas, Registered Parks and Gardens or Battlefields within proximity to the site.

With an emphasis on practicality and proportionality (see *Setting of Heritage Assets* p15 and p18), only those assets where there is the possibility for a effect greater than negligible (see Table 7 in Appendix 1) are considered here in detail – the rest have been scoped out of this assessment.

- Category #1 assets: Gwennap Mining District WHS; Bowl Barrow south of St Peter's; The Three Burrows; Church of St Peter; Highlands; Vicarage; School Room
- Category #2 assets: Two Bowl Barrows north and east of Two Burrows Farm
- Category #3 assets: Remaining GII assets

4.3 IMPACT BY CLASS OF MONUMENT OR STRUCTURE

4.3.1 CHURCHES AND PRE-REFORMATION CHAPELS

Church of England parish churches and chapels; current and former places of worship

Most parish churches tend to be associated with a settlement (village or hamlet), and therefore their immediate context lies within the setting of the village (see elsewhere). Church buildings are usually Grade II* or Grade I Listed structures, on the basis they are often the only surviving medieval buildings in a parish, and their nature places of religious worship.

In more recent centuries the church building and associated structures functioned as *the* focus for religious devotion in a parish. At the same time, they were also theatres of social interaction, where parishioners of differing social backgrounds came together and renegotiated their social contract.

In terms of setting, many churches are still surrounded by their church-towns. Viewed within the context of the settlement itself, churches are unlikely to be affected by the construction of a wind turbine unless it is to be located in close proximity. The location of the church within its settlement, and its relationship with these buildings, would remain unchanged: the church often being the visual focus on the main village street.

This is not the case for the church tower. While these structures are rarely open to the public, in rural communities they are frequently the most prominent visual feature in the landscape, especially where the church is itself located in a topographically prominent location. The towers of these structures were clearly *meant* to be highly visible, ostentatious reminders of the presence of the established church with its message of religious dominance/assurance. However, churches were often built and largely maintained by their laity, and as such were a focus for the *local* expression of religious devotion. It was this local devotion that led to the adornment of their interiors and the elaboration of their exteriors, including the tower.

Where parishes are relatively small, the tower would be visible to the residents of multiple parishes. This would have been a clear expression of the religious devotion – or rather, the competitive piety – of a particular social group. This competitive piety that led to the building of these towers had a very local focus, and very much reflected the aspirations of the local gentry. If the proposed development is located within the landscape in such a way to interrupt line-of-sight between church towers, or compete with the tower from certain vantages, then it would very definitely impact on the setting of these monuments.

As the guidance on setting makes clear, views from or to the tower are less important than the contribution of the setting to the significance of the heritage asset itself. The higher assessment for the tower addresses the concern it will be affected by a new and intrusive element in this landscape.

Churchyards often contained Listed gravestones or box tombs, and associated yard walls and curtilage are usually also Listed. The setting of all of these assets is usually extremely local in character, and local blocking, whether from the body of the church, church walls, shrubs and trees, and/or other buildings, always plays an important role. As such, the construction of a wind turbine is unlikely to have a negative impact.

What is important and why

Churches are often the only substantial medieval buildings in a parish, and reflect local aspirations, prosperity, local and regional architectural trends; they usually stand within graveyards, and these may have pre-Christian origins (evidential value). They are highly visible structures, identified with particular geographical areas and settlements, and can be viewed as a quintessential part of the English landscape (historical/illustrative). They can be associated with notable local families, usually survive as places of worship, and are sometimes the subject of paintings. Comprehensive restoration in the later 19th century means many local medieval churches are associated with notable ecclesiastical architects (historical/associational). The 19th century also saw the proliferation of churches and parishes in areas like Manchester, where industrialisation and urbanisation went hand-in-hand. Churches are often attractive buildings that straddle the distinction between holistic design and piecemeal/incremental development, all overlain and blurred with the 'patina of age' (aesthetic/design and aesthetic/fortuitous). They have great communal value, perhaps more in the past than in the present day, with strong commemorative, symbolic, spiritual and social value.

Asset Name: Church of St Peter	
<i>Parish:</i> St Agnes	<i>Value:</i> Medium
<i>Designation:</i> GII	<i>Distance to Development:</i> c.250m
<p><i>Summary:</i> Listing: Parish church. Church built for Peel parish in 1847, designed by William White. Tower rebuilt in 1898. Killas rubble with granite and freestone dressings. South-west (ritual south) wall mostly rendered. Grouted Delabole slate roofs with gable ends. Plan: Cruciform plan with nave, chancel, north and south transepts and tower at north-west (ritual west) end. Gothic style. Exterior: Unaltered elevations. 3-stage embattled tower. Pointed-arched doorway. 3 light window with intersecting tracery over doorway. 2-light windows to upper stage. Church has porch with pointed doorway towards left of south-west wall. All original windows with groups of 2, 3 or 4 lancets within pointed arched openings with plate tracery. Leaded glazing. Interior: Simple lofty interior with plastered walls, arch-braced roof structures. Painted zinc reredos screen. Otherwise circa late C19 fittings.</p>	
<p><i>Conservation Value:</i> Listed for its architectural value, but also valued for its aesthetic appearance and churchyard setting, historical associations and communal value.</p>	
<p><i>Authenticity and Integrity:</i> The church and yard appears to be in good condition.</p>	
<p><i>Setting:</i> The church is located within a small churchyard, the vicarage (GII Listed) to the east and Burrow Farm to the south-east. Located in a largely agricultural landscape with only limited residential properties nearby. Whilst views are open across the fields they are restricted by trees and hedgebank boundaries.</p>	
<p><i>Contribution of Setting to the Significance of the Asset:</i> The church stands in a fairly elevated location overlooking the valley to the north. Its tower a local landmark.</p>	
<p><i>Magnitude of Effect:</i> The proposed development would be located to the south-west and across roads. The tower is visible from the site, but views of the site are not possible from the church and churchyard, blocked by roadside hedgebanks. The only impact is a cumulative effect upon the wider setting of the church by increasing the modern developments of the landscape, but this is likely to be very negligible.</p>	
<p><i>Magnitude of Impact:</i> Medium value assets and Negligible = Slight.</p>	
<p><i>Overall Impact Assessment:</i> Negligible.</p>	

4.3.2 INDUSTRIAL BUILDINGS AND INFRASTRUCTURE

A range of industrial and extractive structures, often exhibiting elements of formal planning, rarely with a view to aesthetics

A whole range of structures relating to a whole range of industries falls under this broad category, and include ruined, standing and functioning buildings. This might include: bridges, canals, capstans, clay-drying facilities, engine houses, fish cellars, gunpowder mills, railways, warehouses and so forth. However, in most instances industrial buildings were not built with aesthetics in mind, despite the elements of formal planning that would often be present. The sensitivity of these structures to the visual intrusion of a solar development depends on type, age and location.

It is usually the abandoned and ruined structures, now overgrown and ‘wild’, that are most sensitive to intrusive new visual elements; solar pv panels in the immediate vicinity could compete for attention.

The setting of milestones, guideposts and fingerposts, are rarely affected by developments unless in very close proximity, e.g. road widening. The specificity of function, their roadside location and small size usually mean they are experienced and understood within highly restricted landscape contexts.

What is important and why

This is a very heterogeneous group, though all buildings and associated structures retain some evidential value, which ranges with the degree of preservation. Some structures are iconic (e.g. Luxulyan viaduct) and quite often others are, due to the rapid intensification of industry in the 18th and 19th centuries, innovative in both design and application (historical/illustrative). Some may survive as working examples – in which case the associational value is maintained – but many are ruinous or converted (historical/associational). All were designed, and many conform to a particular template (e.g. engine houses) although incremental development through use-life and subsequent decrepitude may conceal this. Fortuitous development may then lead to ruinous or deserted structures or building complexes taking on the air of a romantic ruin (e.g. Kennall Vale gunpowder works), imagery quite at odds with the bustle and industry of their former function. Some of the more spectacular or well-preserved structures may become symbolic (e.g. South Crofty Mine), but communal value tends to be low, especially where public access is not possible.

Asset Name: World Heritage Site – Gwennap Mining District	
<i>Parish:</i> Multiple	<i>Value:</i> Very High
<i>Designation:</i> WHS (contains Listed Bldgs, SAMs)	<i>Distance to Development:</i> c.210m
<p>Description: This extensive site comprises the most authentic and historically important components of the Cornwall and West Devon mining landscape dating principally from 1700 to 1914, the period during which the most significant industrial and social impacts occurred. The ten areas of the Site together form a unified, coherent cultural landscape and share common identity as part of the overall exploitation of metalliferous minerals. Copper and tin particularly were required in increasing quantities at this time through the growing needs of British industry and commerce. Copper was used to protect the hulls of ocean-going timber ships, for domestic ware, and as a major constituent of important alloys such as brass and, with tin, bronze. The useage of tin was also increasing greatly through the requirements of the tin plate industry, for use in canning of foods and in communications. The substantial remains within the Site are a prominent reminder of the contribution Cornwall and west Devon made to the Industrial Revolution in Britain and to the fundamental influence the area asserted on the development of mining globally. Innovative Cornish technology embodied in high-pressure steam engines and other mining equipment was exported around the world, concurrent with the movement of mineworkers migrating to live and work in mining communities based in many instances on Cornish traditions. The transfer of mining technology and related culture led to a replication of readily discernible landscapes overseas, and numerous migrant-descended communities prosper around the globe as confirmation of the scale of this influence.</p> <p>The site lies outside the arbitrary boundary of the mining district of Gwennap, known as the ‘richest</p>	

square mile anywhere on Earth’ during the late 18th and 19th centuries; containing numerous fine houses, well-preserved industrial remains and dramatic mining landscapes. It contains large areas of fertile countryside, historic mining villages, pretty woods, and tranquil river creeks. The open-air Methodist preaching place, [Gwennap Pit](#), along with the Area’s many roadside chapels, give us a fascinating insight into mining communities and their spiritual beliefs. Tramways – including two of Cornwall’s earliest and most important – thread through this Area, linking its mines the well-preserved ports at Devoran and Portreath. At Kennall Vale, the remains of the mills and waterways of the old gunpowder works have been reclaimed by the woodland and now form part of an important nature reserve managed by Cornwall Wildlife Trust.

Supplemental Comments: The mining landscape is spread of a wide area of steep hills and valleys, particularly about watercourses that feed the principle tributary of the Carnon River, which runs through Chacewater and is south of the site. The site is situated just outside the boundary of the WHS, to the north of the A30.

There is an inherent conflict between the protection and preservation of this landscape, the duty to ‘protect, conserve and enhance historical authenticity, integrity and historic character’ and the need to appreciate that this is a living landscape that continues to evolve and where sustainable development must be encouraged (WHS Management Plan). The upland parts of this landscape form a highly distinctive landform, in which the relicts of its mining heritage form prominent components. Anything that detracts from that comes into conflict with the need to conserve and enhance historic character.

Evidential Value: The district contains a very large number of historic buildings, structures and mining-related features, very few of which have been comprehensively surveyed, and which survive to varying degrees. Most of the mine sites, including many of the principal ones identified by the WHS management plan, have not been surveyed, and there is little understanding of the below-ground resource. In addition, as the LiDAR survey (above) and geophysical survey in the district indicates, mining activity was not restricted to the mine sites and lode-back pits etc. can be found at some distance to the established mines. Understanding of other key attributes of the WHS (infrastructure, settlements, great houses, mineralogy etc.) are subject to similar caveat.

Historical Value: ‘The landscapes of Cornwall and West Devon were radically reshaped during the eighteenth and nineteenth centuries by deep mining for predominantly copper and tin. The remains of mines, engine houses, smallholdings, ports, harbours, canals, railways, tramroads, and industries allied to mining, along with new towns and villages reflect an extended period of industrial expansion and prolific innovation. Together these are testimony, in an inter-linked and highly legible way, to the sophistication and success of early, large-scale, industrialised nonferrous hard-rock mining. The technology and infrastructure developed at Cornish and west Devon mines enabled these to dominate copper, tin and later arsenic production worldwide, and to greatly influence 19th century mining practice internationally’ (WHS Management Plan).

Aesthetic Value: The aesthetic value of the principal mine sites is variable: in some areas these ruinous complexes can be described as romantic, in others as blasted wastes with industrial structures best described as eyesores. In many ways, such sites have greatest aesthetic appeal when viewed from the middle distance. Chimneys provide key visual markers in the landscape, protruding above the trees that conceal many of the lowland sites. Some elements (e.g. great houses) were designed to be attractive, whereas others can be enhanced by their setting (e.g. cottage gardens).

Communal Value: Variable, dependant on individual elements (e.g. churches within mining settlements); none in this instance.

Relevant Attributes of the World Heritage Site: All, but only at a distance from the WHS. The site sits to the north-west of the WHS, which is being considered due to proximity.

Authenticity: Inscription as a WHS implies authenticity, but as an extensive site within a living landscape authenticity will vary. Most of the settlements have seen 20th and 21st century development. Significant development of transport infrastructure in the immediate vicinity has eroded the authenticity of views to/from the WHS.

Integrity: Inscription as a WHS implies integrity, but as an extensive site within a living landscape, integrity will vary. Structures of some of the mining sites survive in various stages of conservation.

Topographical Location and Landscape Context: The proposed development would be located to the north-west of the WHS.

Principal Views: The topography and terrain of the mining landscape restrict most views to specific

localised vistas. Views from high points are typically incidental in a landscape of steep and high valleys. There is a restricted view between the proposal site and the WHS, largely screened by trees but also including the A30. Views to and from the proposed site to the WHS are limited and largely screened.

Landscape Presence: As a whole the landscape is too vast to be appreciated in its entirety from one location on the ground. The many elements and features that constitute the landscape have a cumulative presence of the landscape as one explores it. Below ground elements have no significance on landscape presence, although evidence of their existence by tips, shafts and engine houses have significance within a localised environment and on an international industry history level; while roadside chapels and miners cottages may have a local community significance. Elements of the WHS in this area are visible on a landscape scale. The site sits on the edge of an existing settlement within fields screened by trees and hedgebanks. It should be noted that the extant housing surrounding the site are reasonably prominent, being a discrete block of buildings, many of which are painted white.

Direct Effects: The development would have a direct effect on any surviving archaeology beneath the site.

Indirect Effects: The landscape does not feature many housing estates, and those that do exist are located immediately adjacent to the proposed site. The further development of housing estates in this area would erode the regional distinctiveness of this landscape. However, the site sits outside of the designated WHS landscape. Local blocking from other structures and vegetation will reduce the impact on other WHS components.

Contribution of Setting to the Significance of the Asset: The key consideration here is the sense of openness experienced by the visitor to mining sites. On a landscape scale, further development here would have a cumulative but not an especially prominent visual effect on the wider landscape.

Magnitude of Impact: The proposed development sits outside of the WHS. Each heritage asset, whether designated or not, reflects one of the key attributes of the WHS. However, the authenticity and integrity of these assets varies considerably (as noted in the individual assessments).

Impact Assessment: *Very High* value + *Negligible* effect = *Moderate/Large* Impact. **Negative/Minor** impact overall.

4.3.3 LISTED COTTAGES AND STRUCTURES WITHIN HISTORIC SETTLEMENTS

Clusters of Listed Buildings within villages or hamlets; occasionally Conservation Areas

The context of the (usually) Grade II Listed buildings within settlement is defined by their setting within the village settlement. Their significance is determined by their architectural features, historical interiors or role/function in relation to the other buildings. The significance of their setting to the experience of these heritage assets is of key importance and for this reason the curtilage of a property and any small associated buildings or features are often included in the Listing and any changes must be scrutinised under relevant planning law.

Most village settlements have expanded significantly during the 20th century, with rows of cottages and modern houses and bungalows being built around and between the older 'core' Listed structures. The character of the settlement and setting of the heritage assets within it are continually changing and developing, as houses have been built or farm buildings have been converted to residential properties. The setting of these heritage assets within the village can be impacted by new residential developments especially when in close proximity to the settlement. The relationships between the houses, church and other Listed structures will not be altered, and it is these relationships that define their context and setting in which they are primarily to be experienced.

The larger settlements and urban centres usually contain a large number of domestic and commercial buildings, only a very small proportion of which may be Listed or protected in any way. The setting of these buildings lies within the townscape, and the significance of these buildings, and the contribution of their setting to that significance, can be linked to the growth and development of the individual town and any associated industries. The original context of any churches may have changed significantly since construction, but it usually remains at the heart of

its settlement. Given the clustering of numerous individual buildings, and the local blocking this inevitably provides, a distant development is unlikely to prove particularly intrusive.

What is important and why

Historic settlements constitute an integral and important part of the historic landscape, whether they are hamlets, villages, towns or cities. The physical remains of previous occupation may survive beneath the ground, and the built environment contains a range of vernacular and national styles (evidential value). Settlements may be archetypal, but development over the course of the 20th century has homogenised most, with streets of terraced and semi-detached houses and bungalow growths arranged around the medieval core (limited historical/illustrative value). As dynamic communities, there will be multiple historical/associational values relating to individuals, families, occupations, industry, retail etc. in proportion to the size and age of the settlement (historical/associational). Settlements that grew in an organic fashion developed fortuitously into a pleasing urban environment (e.g. Ledbury), indistinguishable suburbia, or degenerate urban/industrial wasteland (aesthetic/fortuitous). Some settlements were laid out quickly or subject to the attention of a limited number of patrons or architects (e.g. late 19th century Redruth and the architect James Hicks, or Charlestown and the Rashleigh family), and thus strong elements of design and planning may be evident which contribute in a meaningful way to the experience of the place (aesthetic/design). Component buildings may have strong social value, with multiple public houses, clubs, libraries (communal/social), chapels and churches (communal/spiritual). Individual structures may be commemorative, and whole settlements may become symbolic, although not always in a positive fashion (e.g. the Valleys of South Wales for post-industrial decline) (communal/symbolic). Settlements are complex and heterogeneous built environments filled with meaning and value; however, beyond a certain size threshold distant sight-lines become difficult and local blocking more important.

Asset Name: Highlands	
<i>Parish:</i> St Agnes	<i>Value:</i> Medium
<i>Designation:</i> GII	<i>Distance to Development:</i> c.420m
<i>Summary:</i> Listing: House and 2 cottages, now one house. Probably C18, extended in the C20. Painted rubble and cob walls. Wheat-reed thatched roof. Brick chimneys over the gable ends and over the cross walls. Large external stack on the right. Plan: Pair of one-room-plan cottages on the left with central rear pantry or stair outshut and 2-room-plan house on the right. Extended in the C20 on the left and behind the right-hand side. Exterior: 2 storeys. Overall 4-window south front. Pair of 1-window front cottages, on the left, with doorway on their right, and symmetrical 2 window front house with central doorway, on the right. C20 doors and windows in C18 openings. 4- pane casements and 12-pane casements.	
<i>Conservation Value:</i> Listed for its value as a vernacular structure of its type.	
<i>Authenticity and Integrity:</i> The house appears to be in good condition.	
<i>Setting:</i> The house is located within an area of relatively intensive farm settlements to the north-east of Blackwater. Located in what was formerly a largely agricultural landscape, but which has become increasingly developed. Whilst views are theoretically across open fields they are restricted by trees, buildings and hedgebank boundaries.	
<i>Contribution of Setting to the Significance of the Asset:</i> The house stands in a fairly elevated location amongst other buildings and trees, obscuring it from wider views.	
<i>Magnitude of Effect:</i> The proposed development would be located to the north-east and across roads. The house is not visible from the site, nor is the site visible from the house, blocked by roadside hedgebanks and trees.	
<i>Magnitude of Impact:</i> Medium value assets and Negligible = Slight.	
Overall Impact Assessment: Negligible.	

LAND AT CHIVERTON CROSS, BLACKWATER, ST AGNES, CORNWALL

<i>Asset Name:</i> School Room immediately east of the Church of St Peter	
<i>Parish:</i> St Agnes	<i>Value:</i> Medium
<i>Designation:</i> GII Listed	<i>Distance to Development:</i> c.250m
<i>Description Summary:</i> Listing Text: Schoolroom or church hall. Circa mid C19. Possibly designed by William White who designed the church and vicarage. Painted killas rubble walls, wooden lintels, steep grouted scantle slate roof with gable ends. Cast-iron ogee-section gutters. Plan: Rectangular plan. Probably one large room with possibly an entrance lobby at the right-hand end. Exterior: Single-storey 2-window south front. Integral buttress at left-hand end and a weathered buttress left of middle. Old, possibly original, 3-light casement windows with 3 panes per light. Old ledged door in original doorway on the right.	
<i>Conservation Value:</i> Scheduled for its association with the architect of the nearby church and vicarage and as a vernacular building of its type.	
<i>Authenticity and Integrity:</i> The building appears to be in good condition.	
<i>Setting:</i> The building sits in proximity to the nearby church and was associated with its use (as a church hall), as such the setting of the church is important as was its accessibility from nearby settlements. This setting has been retained.	
<i>Contribution of Setting to Significance of Asset:</i> Setting is only of importance to a schoolroom/church hall in terms of its accessibility for the local population, and through association with the church rather than by necessity. Whilst the church was intended to be seen, the church hall was not.	
<i>Magnitude of Effect:</i> The proposed development is located to the south-west of the building, across woodland and post-medieval/modern buildings. Whilst the proposal site is theoretically visible from church hall, it is screened entirely by woodland. The only impact is a cumulative effect upon the wider setting by increasing the density of modern buildings, but this is likely to be very negligible.	
<i>Magnitude of Impact:</i> Medium value asset + no change = neutral	
Overall Impact Assessment: Neutral	

<i>Asset Name:</i> Vicarage	
<i>Parish:</i> St Agnes	<i>Value:</i> Medium
<i>Designation:</i> GII Listed	<i>Distance to Development:</i> c.250m
<i>Description Summary:</i> Listing Text: Former vicarage, Circa 1847. Designed by William. White. Stuccoed. Delabole slate gabled roofs. Stuccoed gable and axial chimneys. Plan: Irregular reversed F-shaped plan: U-shaped plan plus possible extension at the right-hand end of principal range. Gothic style features. Exterior: 2 storeys plus attic (over right-hand wing). Stuccoed elevations with irregularly disposed mullioned windows (mullions removed from some of the windows). East front has gable end on the left, another gable end towards the right and a possible extension, with hipped end sweeping over an integral outshut, set back on the right. Left-and gable end has doorway with slate hood on corbels, on the right and outshut on its left with doorway and arched window above, and 2-light windows to middle of gable and below.	
<i>Conservation Value:</i> Scheduled for its association with the architect of the church and nearby church hall and as a vernacular building of its style.	
<i>Authenticity and Integrity:</i> The building appears in good condition.	
<i>Setting:</i> The building sits in proximity to the nearby church and was associated with its use (as a church hall), as such the setting of the church is important as was its accessibility from nearby settlements. This setting has been retained.	
<i>Contribution of Setting to Significance of Asset:</i> Setting is only of importance to the vicarage in terms of its accessibility for the local population, and through association with the church rather than by necessity. Whilst the church was intended to be seen, the church hall was not.	
<i>Magnitude of Effect:</i> The proposed development is located to the south-west of the building, across woodland and post-medieval/modern buildings. Whilst the proposal site is theoretically visible from church hall, it is screened entirely by woodland. The only impact is a cumulative effect upon the wider	

setting by increasing the density of modern buildings, but this is likely to be very negligible.
<i>Magnitude of Impact:</i> Medium value asset + no change = neutral
Overall Impact Assessment: Neutral

4.3.4 PREHISTORIC RITUAL/FUNERARY MONUMENTS

These monuments undoubtedly played an important role in the social and religious life of past societies, and it is clear they were constructed in locations invested with considerable religious/ritual significance. In most instances, these locations were also visually prominent, or else referred to prominent visual actors, e.g. hilltops, tors, sea stacks, rivers, or other visually prominent monuments. The importance of intervisibility between barrows, for instance, is a noted phenomenon. As such, these classes of monument are unusually sensitive to intrusive and/or disruptive modern elements within the landscape. This is based on the presumption these monuments were built in a largely open landscape with clear lines of sight; in many cases these monuments are now to be found within enclosed farmland, and in varying condition. Sensitivity to turbine is lessened where tall hedgebanks restrict line-of-sight.

What is important and why

Prehistoric ritual sites preserve information on the spiritual beliefs of early peoples, and archaeological data relating to construction and use (evidential). The better examples may bear names and have folkloric aspects (historical/illustrative) and others have been discussed and illustrated in historical and antiquarian works since the medieval period (historical/associational). It is clear they would have possessed design value, although our ability to discern that value is limited; they often survive within landscape palimpsests and subject to the ‘patina of age’, so that fortuitous development is more appropriate. They almost certainly once possessed considerable communal value, but in the modern age their symbolic and spiritual significance is imagined or attributed rather than authentic. Nonetheless, the location of these sites in the historic landscape has a strong bearing on the overall contribution of setting to significance: those sites located in ‘wild’ or ‘untouched’ places – even if those qualities are relatively recent – have a stronger spiritual resonance and illustrative value than those located within enclosed farmland or forestry plantations.

<i>Asset Name:</i> Bowl Barrow 125m south of St Peter’s Church at Three Burrows	
<i>Parish:</i> St Agnes	<i>Value:</i> High
<i>Designation:</i> Scheduled Monument	<i>Distance to Development:</i> c.185m
<i>Description Summary:</i> Listing Text: The monument includes a large bowl barrow situated astride the property boundary separating Burrow Farm from The Old Vicarage 100m south of St Peter's Church at Three Burrows. The barrow mound stands 3m high and 18m in diameter; it has formerly been ploughed around its edge leaving a vertical cut about 1m in height all around the circumference. A central pit at the summit of the barrow suggests antiquarian investigation or internal collapse. The barrow lies about 400m west of the three burrows from which the area takes its name. All fencing, fence posts, garden seats, a corrugated iron garden shed built into the south west side of the barrow mound and a concrete retaining wall against which the shed is built are excluded from the scheduling, although the ground beneath all these features is included.	
<i>Supplemental Comments:</i> The barrow is not visible as an earthwork monument, being heavily obscured by undergrowth.	
<i>Conservation Value:</i> Scheduled for its evidential value is potentially high as, despite some antiquarian activity, there may be additional burials or deposits associated with the cemetery and it is associated with a non-historical period for which archaeological data is vital. There will be a buried historic ground surface beneath the barrow which may also contain environmental evidence. Also some slight communal value of the asset is attested by the popularity of these past landscapes, both remote and funerary/ritualistic within modern tourism.	

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<p><i>Authenticity and Integrity:</i> The barrow is now covered in undergrowth and surrounded by woodland/hedgebanks and the funerary landscape character of its setting has significantly diminished. However, its integrity, whilst partially reduced by levelling can be presumed to be in moderate condition given the lack of modern development.</p>
<p><i>Setting:</i> The monument is set within the grounds of a working farmyard, when it would originally have been within an open landscape and arranged so as to be visible within a wider funerary landscape. It is now isolated and removed, despite proximity to other monuments of the same class.</p>
<p><i>Contribution of Setting to Significance of Asset:</i> Setting is paramount to the significance of a barrow, intended to be viewed as part of a wider funerary landscape as a means of memorialising the dead. The lack of shared ritual culture with our ancestors does not detract from our own appreciation of a setting and/or its use.</p>
<p><i>Magnitude of Effect:</i> The proposed development is located to the south-west of the monument, across woodland and post-medieval/modern buildings. Whilst the proposal site is theoretically visible from the monument, it is screened entirely and would sit behind already existing structures. The only impact is a cumulative effect upon the wider setting by increasing the density of modern buildings, but this is likely to be very negligible.</p>
<p><i>Magnitude of Impact:</i> High value asset + no change = neutral</p>
<p>Overall Impact Assessment: Neutral</p>

Asset Name: The Three Burrows	
Parish: St Agnes	Value: High
Designation: Scheduled Monument	Distance to Development: c.470m
<p><i>Description Summary:</i> Listing Text: The monument, which falls into two areas, includes three plough-reduced Bronze Age bowl barrows situated just east of Chiverton Cross and south east of St Peter's Church at Three Burrows. The three barrows probably gave rise to the place-name for the area. The two barrows which lie 450m south east of St Peter's Church lie about 25m apart and appear as mounds between 20m and 22m in diameter and 1m high; neither has any discernible sign of an encircling ditch. The third barrow, some 80m west of the pair, has a mound 1.5m high and 20m in diameter with traces of a surrounding quarry ditch.</p>	
<p><i>Supplemental Comments:</i> All three of the barrows survive as slight earthwork features within an open field under pasture.</p>	
<p><i>Conservation Value:</i> Scheduled for their evidential value is potentially high as, despite some antiquarian activity, there may be additional burials or deposits associated with the cemetery and it is associated with a non-historical period for which archaeological data is vital. There will be a buried historic ground surface beneath the barrow which may also contain environmental evidence. Also some slight communal value of the asset is attested by the popularity of these past landscapes, both remote and funerary/ritualistic within modern tourism.</p>	
<p><i>Authenticity and Integrity:</i> The barrows are situated overlooking a largely open landscape much as they were intended, although this landscape has been drastically altered by modern infrastructure and development. The integrity of the monuments can be presumed to be very good condition given the lack of modern development and presumed survival of most of the asset.</p>	
<p><i>Setting:</i> The monuments are set in a largely open landscape and arranged so as to be visible within a wider funerary landscape. These monuments can still be said to be within an open landscape, and are situated in proximity to other monuments of the same class though modern infrastructure and development has reduced the intervisibility between monuments.</p>	
<p><i>Contribution of Setting to Significance of Asset:</i> Setting is paramount to the significance of a barrow, intended to be viewed as part of a wider funerary landscape as a means of memorialising the dead. The lack of shared ritual culture with our ancestors does not detract from our own appreciation of a setting and/or its use.</p>	
<p><i>Magnitude of Effect:</i> The proposed development is located to the south-west of the monument, across woodland and post-medieval/modern buildings and infrastructure. Whilst the proposal site is theoretically</p>	

visible from the monument, it is screened entirely and would sit behind already existing structures. The only impact is a cumulative effect upon the wider setting by increasing the density of modern buildings, but this is likely to be very negligible.

Magnitude of Impact: High value asset + no change = neutral

Overall Impact Assessment: **Neutral**

Asset Name: Two Bowl Barrows at Two Burrows, 500m north and 510m north-east of Two Burrows Farm

Parish: St Agnes

Value: High

Designation: Scheduled Monument

Distance to Development: c.825m

Description Summary: Listing Text: The monument, which falls into two areas, includes two Bronze Age bowl barrows on an east-west axis, situated 500m north and 510m north east of Two Burrows Farm alongside the road from Two Burrows to Mount Hawke. The eastern barrow is 2.8m high and 22m across with a rounded profile. It has a large central depression which may be the result of antiquarian excavation or internal collapse. The barrow 125m to the west is larger, being 3.6m high with a full rounded top surmounting a vertical rim 1.8m high which is found around the entire circumference. This barrow is 24m in diameter. Neither barrow displays any visible sign of having possessed a surrounding ditch. The two barrows are almost certainly the barrows which have given their name to the area. Excluded from the scheduling are the metal poles located in the easternmost barrow, although the ground beneath them is included.

Supplemental Comments: Both barrows survive as earthworks within an open field, though both are heavily overgrown and a road runs immediately alongside.

Conservation Value: Scheduled for their evidential value is potentially high as, despite some antiquarian activity, there may be additional burials or deposits associated with the cemetery and it is associated with a non-historical period for which archaeological data is vital. There will be a buried historic ground surface beneath the barrow which may also contain environmental evidence. Also some slight communal value of the asset is attested by the popularity of these past landscapes, both remote and funerary/ritualistic within modern tourism.

Authenticity and Integrity: The barrows are situated overlooking a largely open landscape much as they were intended, although this landscape has been drastically altered by modern infrastructure and development. The integrity of the monuments can be presumed to be very good condition given the lack of modern development and presumed survival of most of the asset, though will be restricted by the incursion of a road.

Setting: The monuments are set in a largely open landscape and arranged so as to be visible within a wider funerary landscape. These monuments can still be said to be within an open landscape, and are situated in proximity to other monuments of the same class though modern infrastructure and development has reduced the intervisibility between monuments.

Contribution of Setting to Significance of Asset: Setting is paramount to the significance of a barrow, intended to be viewed as part of a wider funerary landscape as a means of memorialising the dead. The lack of shared ritual culture with our ancestors does not detract from our own appreciation of a setting and/or its use.

Magnitude of Effect: The proposed development is located to the east of the monument, across open fields and post-medieval/modern buildings and infrastructure. The proposal site sits lower on the hillside than the monument, as well as being screened by hedgebanks and already existing structures. The only impact is a cumulative effect upon the wider setting by increasing the density of modern buildings, but this is likely to be very negligible.

Magnitude of Impact: High value asset + no change = neutral

Overall Impact Assessment: **Neutral**

4.3.5 HISTORIC LANDSCAPE

General Landscape Character

The landscape of the British Isles is highly variable, both in terms of topography and historical biology. Natural England has divided the British Isles into numerous 'character areas' based on topography, biodiversity, geodiversity and cultural and economic activity. The County Councils and AONBs have undertaken similar exercises, as well as Historic Landscape Characterisation.

Some character areas are better able to withstand the visual impact of development than others. Rolling countryside with wooded valleys and restricted views can withstand a larger number of sites than an open and largely flat landscape overlooked by higher ground. The English landscape is already populated by a large and diverse number of intrusive modern elements, e.g. electricity pylons, factories, modern housing estates, quarries, and turbines, but the question of cumulative impact must be considered. The aesthetics of individual developments is open to question, and site specific, but as intrusive new visual elements within the landscape, it can only be **negative**.

The proposed site would be constructed within the *Redruth, Camborne and Gwennap* Landscape Character Area (LCA):

- The area is a small scale rolling landscape with underlying slates and siltstones running from the exposed north coast to the Fal ria in the south. The strong influence of over 300 years of tin and copper mining has affected both the present day land use and landscape pattern of this area. This is reflected in the Gwennap and Redruth and Camborne mining districts. Extensive areas of disturbed or derelict land from this earlier industrial activity are evident with many developing into fragmented semi-natural habitats with scrub, bracken and heath. Extensive areas of Lowland Heathland occur along the narrow coastal strip between Portreath and Porthowan. Pasture is the dominant land use. Small irregular fields of anciently enclosed land predominate in more sheltered valleys and hillsides with the often rather larger, straight sided fields of recently enclosed land on more exposed, marginal ground, containing both improved and rough pasture. Woodland occurs in semi-natural form in the valley floors and as mixed plantations on the upper valley sides. The Camborne-Pool-Redruth urban area is extensive and a military airfield lies east of Portreath on the coast. Outside these areas, settlement is dispersed but dense with small farms and some estate land. Miners' smallholdings have influenced the distinct field pattern. The proposed site lies in proximity to existing settlement and modern transport infrastructure. It will therefore blend in with the existing settlement. On that basis the impact is assessed as **neutral to negligible**.

4.3.6 AGGREGATE IMPACT

The aggregate impact of a proposed development is an assessment of the overall effect of a single development on multiple heritage assets. This differs from cumulative impact (below), which is an assessment of multiple developments on a single heritage asset. Aggregate impact is particularly difficult to quantify, as the threshold of acceptability will vary according to the type, quality, number and location of heritage assets, and the individual impact assessments themselves.

Based on the restricted number of assets where any appreciable effect is likely, the aggregate impact of this development is **negligible**.

4.3.7 CUMULATIVE IMPACT

Cumulative impacts affecting the setting of a heritage asset can derive from the combination of different environmental impacts (such as visual intrusion, noise, dust and vibration) arising from a single development or from the overall effect of a series of discrete developments. In the latter case, the cumulative visual impact may be the result of different developments within a single view, the effect of developments seen when looking in different directions from a single viewpoint, of the sequential viewing of several developments when moving through the setting of one or more heritage assets.

The Setting of Heritage Assets 2011a, 25

*The key for all cumulative impact assessments is to focus on the **likely significant** effects and in particular those likely to influence decision-making.*

GLVIA 2013, 123

An assessment of cumulative impact is, however, very difficult to gauge, as it must take into account existing, consented and proposed developments. The threshold of acceptability has not, however, been established, and landscape capacity would inevitably vary according to landscape character. The proposed development is not likely to cause any significant cumulative effect, and therefore an assessment of **negligible** is appropriate.

TABLE 5: SUMMARY OF IMPACTS.

Asset	Type	Distance	Value	Magnitude of Impact	Assessment	Overall Assessment
Indirect Impacts						
Church of St Peter	GII	250m	Medium	Negligible	Slight	Negligible
Gwennap Mining District	WHS	210m	Very High	Negligible	Moderate-large	Negative-minor
Highlands	GII	420m	Medium	Negligible	Slight	Negligible
School Rooms east of Church of St Peter	GII	280m	Medium	Neutral	Slight	Neutral
Vicarage	GII	250m	Medium	Neutral	Slight	Neutral
Bowl Barrow 125m south of St Peters Church at Three Burrows	SAM	185m	High	Neutral	Slight	Neutral
The Three Burrows	SAM	470m	High	Neutral	Slight	Neutral
Two Bowl Barrows at Two Burrows	SAM	825m	High	Neutral	Slight	Neutral
Indirect Impacts						
Historic Landscape	n/a	n/a	High	Minor	Neutral/Slight	Negligible
Aggregate Impact	n/a	n/a				Negligible
Cumulative Impact	n/a	n/a				Negligible

5.0 CONCLUSION

The site is located to the north-east of the settlement of Blackwater, close to the Chiverton Cross Roundabout linking the A30, A390, A3075 and B3277 roads. The site is situated within fields opposite the Chiverton Arms public house south of the B3277 road, c.230m west of the roundabout. The surrounding landscape contains evidence of prehistoric funerary monuments and medieval and post-medieval settlement and farming activity, the site itself appearing to have remained undeveloped despite the limited growth of settlement surrounding it.

Assessment of the readily-available aerial photography and LiDAR for the proposal site indicates that the site is largely clear of visible earthworks, though there is the suggestion of a possible (though unlikely) cropmark visible on aerial photographs which identified as a shallow depression during the site inspection. The cartographic sources indicate that the site was covered by woodland into the 19th century.

The geophysical survey identified predominantly a series of discrete ovoid anomalies distributed across the site and likely to represent pits and tree-throws, as well as linear anomalies reflecting recent ploughing across the site. Ploughing evident in the survey results will have truncated any buried potential archaeological resource to some extent.

On the basis of the geophysical survey, the archaeological potential of the site is *low*, containing only features which are likely to be associated with the land having previously been wooded.

In terms of indirect impacts, most of the designated heritage assets in the wider area are located at such a distance to minimise the impact of the proposed development, or else the contribution of setting to overall significance is less important than other factors. The landscape context of many of these buildings and monuments is such that they would be partly or wholly insulated from the effects of the proposed development by a combination of local blocking from trees, buildings or embankments, or that other modern intrusions have already impinged upon their settings. The only sites where there is the potential for an appreciable impact are: the Gwennap Mining District World Heritage Site (**negative-minor**); the Scheduled Ancient Monuments of Bowl Barrow south of St Peters (**neutral**), the Three Burrows (**neutral**), and Two Bowl Barrows at Two Burrows (**neutral**); and the Grade II Listed Church of St Peter (**negligible**), Highlands (**negligible**), School Rooms (**neutral**), Vicarage (**neutral**)

With this in mind, the overall impact of the proposed development can be assessed as **negligible** to **negative/minor**. The impact of the development on any buried archaeological resource may be **permanent** and **irreversible**, although the significance of any buried archaeological deposits remains unknown at present, though appears limited, this can be determined and mitigated through a pre-commencement planning condition.

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Cornwall Record Office

- St Agnes tithe map (1841) and apportionment (1842)
- St Agnes tithe map (1893)
- Ordnance Survey First Edition 25 Inch Map
- Ordnance Survey Second Edition 25 Inch Map

APPENDIX 1: ADDITIONAL GRAPHICAL IMAGES OF THE GRADIOMETER SURVEY

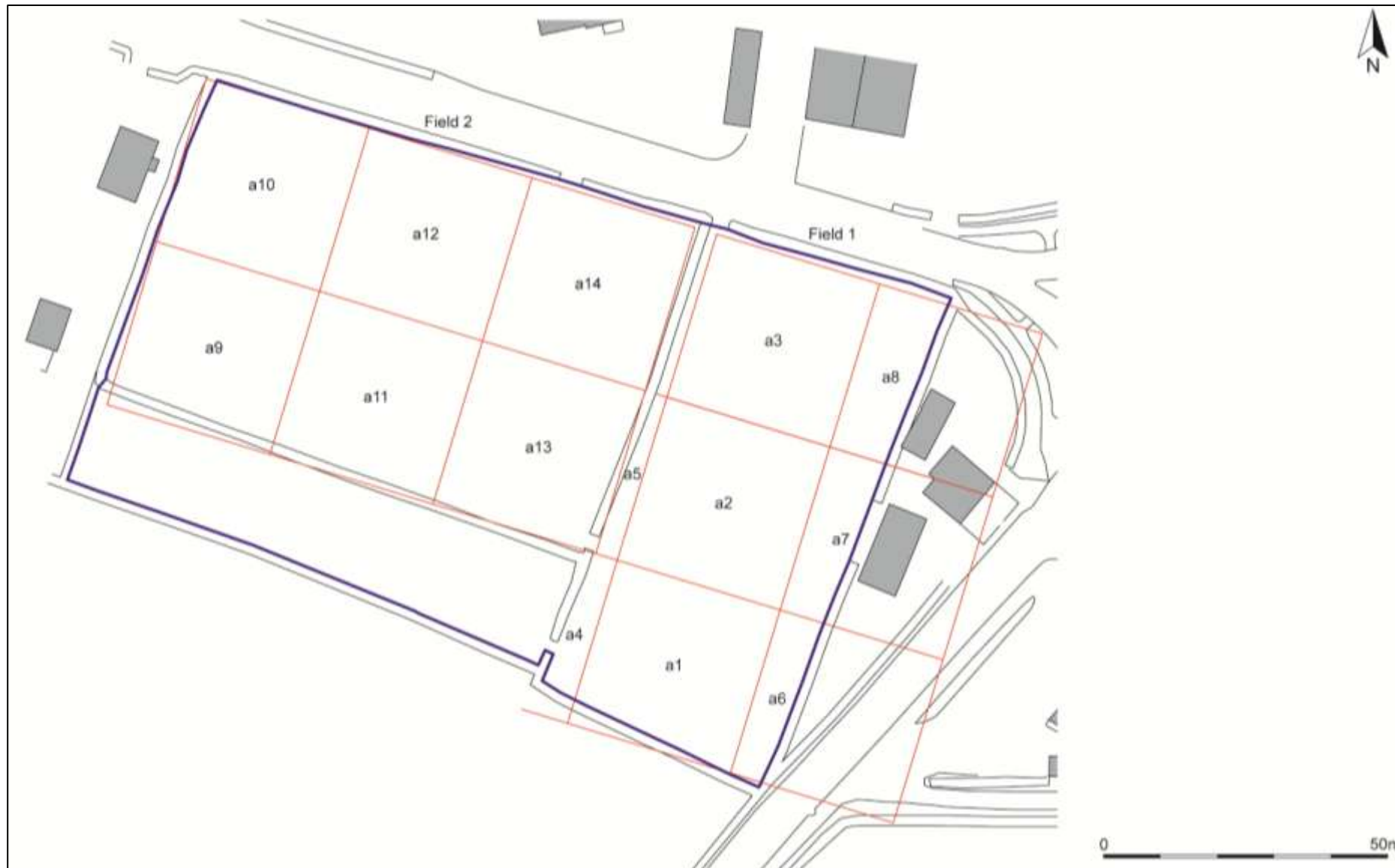


FIGURE 11: GEOPHYSICAL SURVEY GRID LOCATION AND NUMBERING.

LAND AT CHIVERTON CROSS, BLACKWATER, ST AGNES, CORNWALL

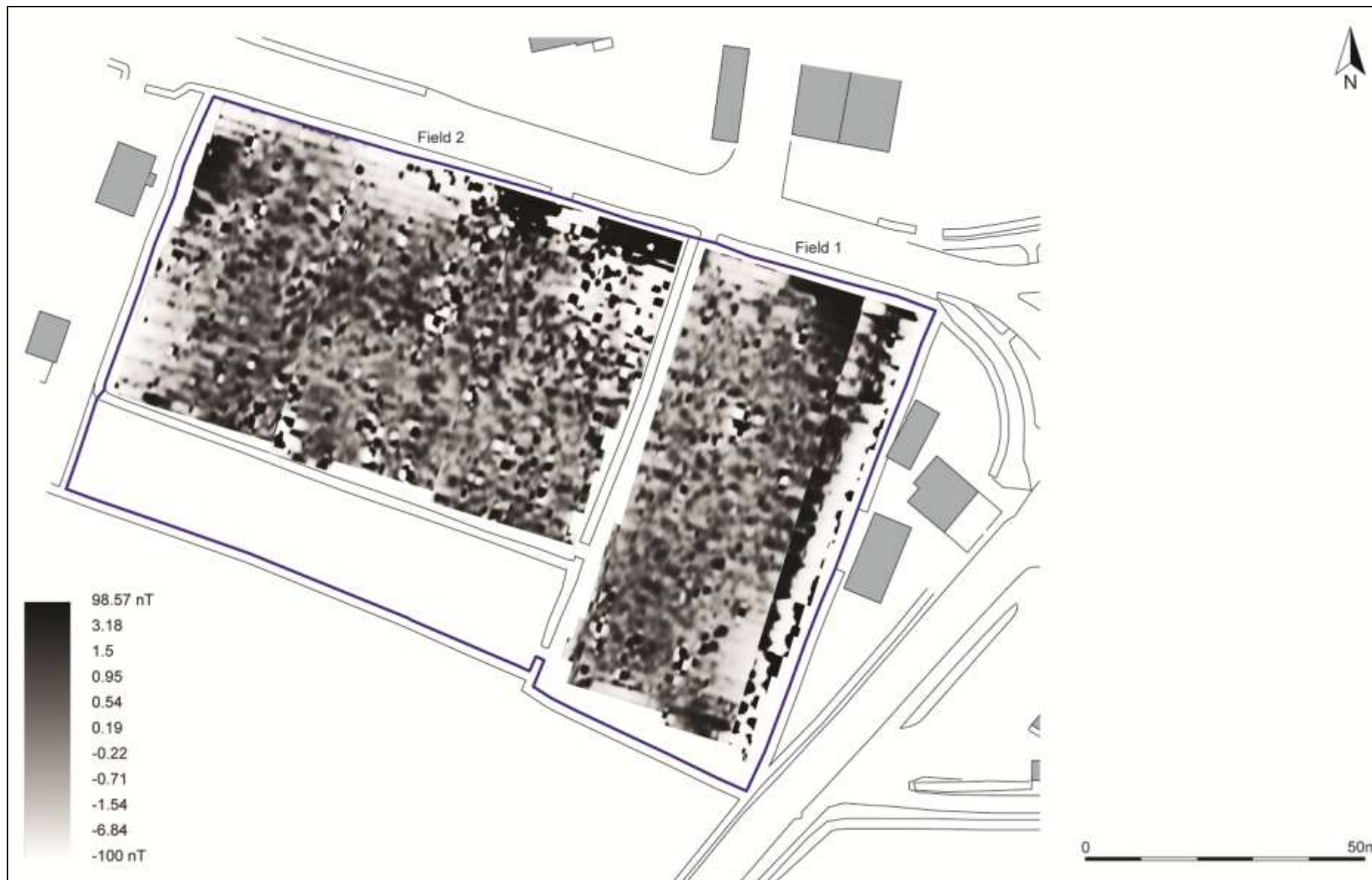


FIGURE 12: SHADE PLOT OF GRADIOMETER SURVEY DATA; GRADIATED SHADING, BAND WEIGHT EQUALISED.

LAND AT CHIVERTON CROSS, BLACKWATER, ST AGNES, CORNWALL

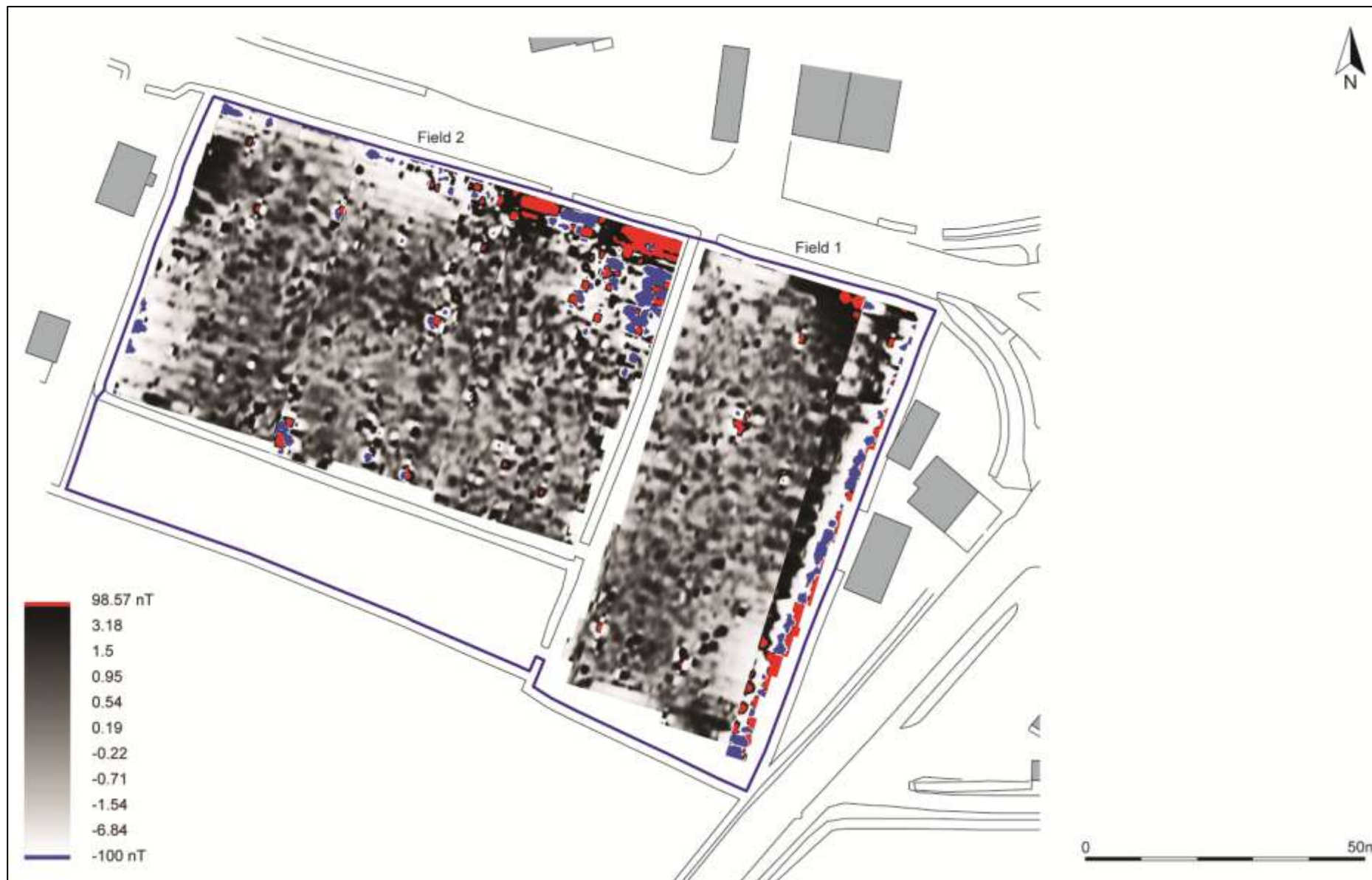


FIGURE 13: RED GREYSCALE BLUE SHADE PLOT OF GRADIOMETER SURVEY DATA; GRADIATED SHADING, BAND WEIGHT EQUALISED.

LAND AT CHIVERTON CROSS, BLACKWATER, ST AGNES, CORNWALL

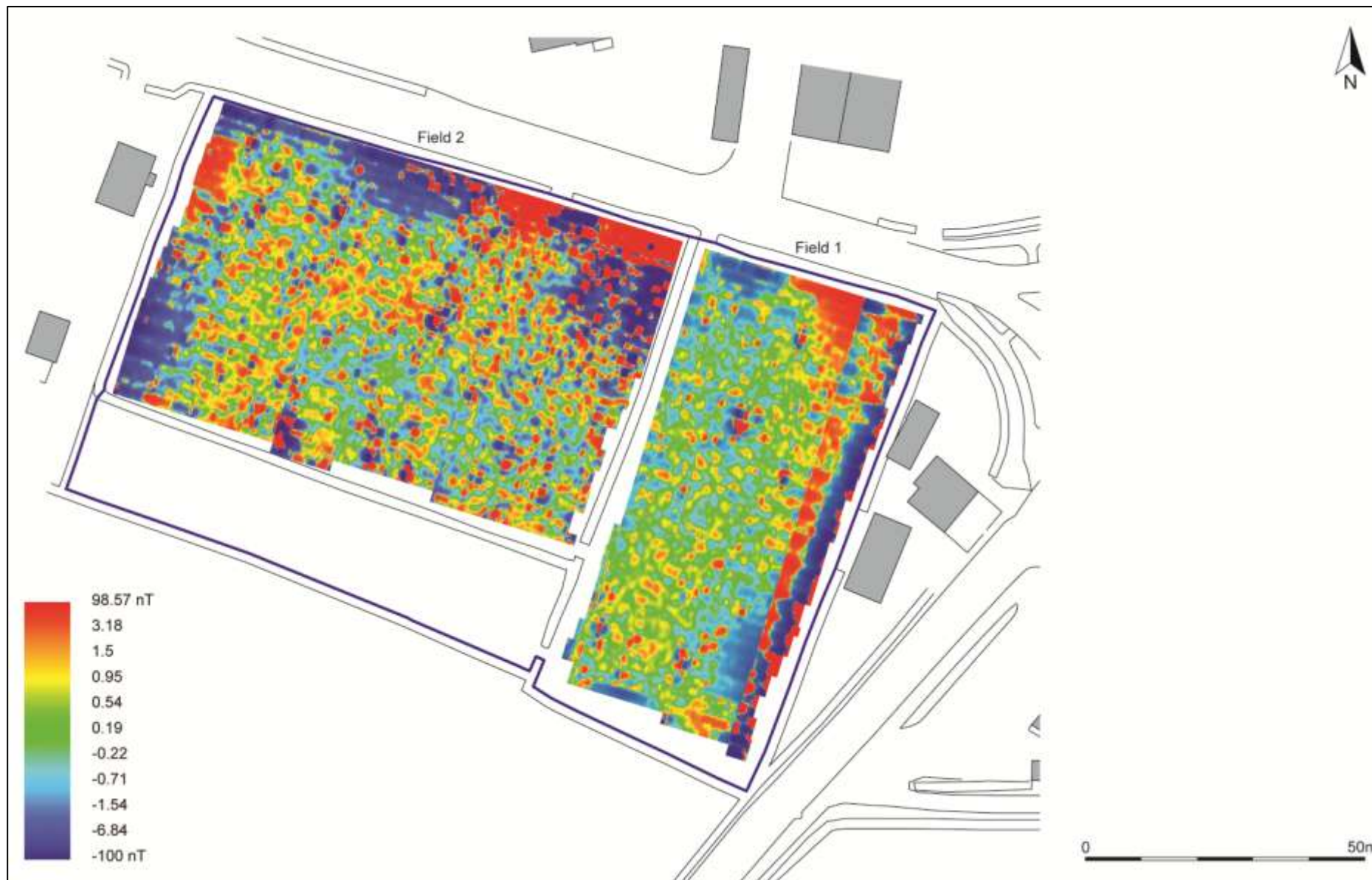


FIGURE 14: RED-BLUE-GREEN2 SHADE PLOT OF GRADIOMETER SURVEY DATA; GRADIATED SHADING, BAND WEIGHT EQUALISED.

APPENDIX 2: SUPPORTING PHOTOGRAPHS: SITE INSPECTION



VIEW ACROSS THE NORTHERN END OF FIELD 1; FROM THE NORTH-WEST.



VIEW ACROSS THE SOUTHERN END OF FIELD 1; FROM THE NORTH-WEST.

LAND AT CHIVERTON CROSS, BLACKWATER, ST AGNES, CORNWALL



VIEW ACROSS FIELD 1; FROM THE SOUTH-WEST.



DETAIL OF THE ROADSIDE ACCESS TO FIELD 1; FROM THE SOUTH.



DETAIL OF THE ACCESS BETWEEN FIELD 1 AND THE WOODLAND TO THE SOUTH OF FIELD 2; FROM THE SOUTH-EAST.



VIEW ACROSS FIELD 1 FROM THE ACCESS TO FIELD 2; FROM THE SOUTH-WEST.



DETAIL OF HEDGEBANK BOUNDARY BETWEEN FIELDS 1 AND 2; FROM THE SOUTH-WEST.



DETAIL OF THE ACCESS BETWEEN FIELDS 1 AND 2; FROM THE NORTH-WEST.

LAND AT CHIVERTON CROSS, BLACKWATER, ST AGNES, CORNWALL



VIEW ALONG THE NORTH BOUNDARY OF FIELD 2; FROM THE SOUTH-EAST.



VIEW ALONG THE EAST BOUNDARY OF FIELD 2; FROM THE NORTH-EAST.

LAND AT CHIVERTON CROSS, BLACKWATER, ST AGNES, CORNWALL



VIEW ACROSS THE SLIGHT HOLLOW WITHIN FIELD 2; FROM THE NORTH.



VIEW ALONG THE WEST BOUNDARY OF FIELD 2; FROM THE NORTH-EAST.

APPENDIX 3: IMPACT ASSESSMENT METHODOLOGY

Heritage Impact Assessment - Overview

The purpose of heritage impact assessment is twofold: Firstly, to understand – insofar as is reasonable practicable and in proportion to the importance of the asset – the significance of a historic building, complex, area or archaeological monument (the ‘heritage asset’). Secondly, to assess the likely effect of a proposed development on the heritage asset (direct impact) and its setting (indirect impact). This methodology employed in this assessment is based on the staged approach advocated in *The Setting of Heritage Assets* (GPA3 Historic England 2015), used in conjunction with the ICOMOS (2011) and DoT (DMRB vol.11; WEBTAG) guidance. This Appendix contains details of the methodology used in this report.

National Policy

General policy and guidance for the conservation of the historic environment are now contained within the *National Planning Policy Framework* (Department for Communities and Local Government 2012). The relevant guidance is reproduced below:

Paragraph 128

In determining applications, local planning authorities should require the applicant to describe the significance of any heritage assets affected, including the 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 be consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which a 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.

Paragraph 129

Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset’s conservation and any aspect of the proposal.

A further key document is the Planning (Listed Buildings and Conservation Areas) Act 1990, in particular section 66(1), which provides *statutory protection* to the setting of Listed buildings:

In considering whether to grant planning permission for development which affects a listed building or its setting, the local planning authority or, as the case may be, the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses.

Cultural Value – Designated Heritage Assets

The majority of the most important (‘nationally important’) heritage assets are protected through *designation*, with varying levels of statutory protection. These assets fall into one of six categories, although designations often overlap, so a Listed early medieval cross may also be Scheduled, lie within the curtilage of Listed church, inside a Conservation Area, and on the edge of a Registered Park and Garden that falls within a world Heritage Site.

Listed Buildings

A Listed building is an occupied dwelling or standing structure which is of special architectural or historical interest. These structures are found on the *Statutory List of Buildings of Special Architectural or Historic Interest*. The status of Listed buildings is applied to 300,000-400,000 buildings across the United Kingdom. Recognition of the need to protect historic buildings began after the Second World War, where significant numbers of buildings had been damaged in the county towns and capitals of the United Kingdom. Buildings that were considered to be of ‘architectural merit’ were included. The Inspectorate of Ancient Monuments supervised the collation of the list, drawn up by members of two societies: The Royal Institute of British Architects and the Society for the Protection of Ancient Buildings. Initially the lists were only used to assess which buildings should receive government grants to be repaired and conserved if damaged by bombing. The *Town and Country Planning Act 1947* formalised the process within England and Wales, Scotland and Ireland following different procedures. Under the 1979 *Ancient*

Monuments and Archaeological Areas Act a structure cannot be considered a Scheduled Monument if it is occupied as a dwelling, making a clear distinction in the treatment of the two forms of heritage asset. Any alterations or works intended to a Listed Building must first acquire Listed Building Consent, as well as planning permission. Further phases of 'listing' were rolled out in the 1960s, 1980s and 2000s; English Heritage advise on the listing process and administer the procedure, in England, as with the Scheduled Monuments.

Some exemption is given to buildings used for worship where institutions or religious organisations (such as the Church of England) have their own permissions and regulatory procedures. Some structures, such as bridges, monuments, military structures and some ancient structures may also be Scheduled as well as Listed. War memorials, milestones and other structures are included in the list, and more modern structures are increasingly being included for their architectural or social value.

Buildings are split into various levels of significance: Grade I (2.5% of the total) representing buildings of exceptional (international) interest; Grade II* (5.5% of the total) representing buildings of particular (national) importance; Grade II (92%) buildings are of merit and are by far the most widespread. Inevitably, accuracy of the Listing for individual structures varies, particularly for Grade II structures; for instance, it is not always clear why some 19th century farmhouses are Listed while others are not, and differences may only reflect local government boundaries, policies and individuals.

Other buildings that fall within the curtilage of a Listed building are afforded some protection as they form part of the essential setting of the designated structure, e.g. a farmyard of barns, complexes of historic industrial buildings, service buildings to stately homes etc. These can be described as having *group value*.

Conservation Areas

Local authorities are obliged to identify and delineate areas of special architectural or historic interest as Conservation Areas, which introduces additional controls and protection over change within those places. Usually, but not exclusively, they relate to historic settlements, and there are c.7000 Conservation Areas in England.

Scheduled Monuments

In the United Kingdom, a Scheduled Monument is considered an historic building, structure (ruin) or archaeological site of '**national importance**'. Various pieces of legislation, under planning, conservation, etc., are used for legally protecting heritage assets given this title from damage and destruction; such legislation is grouped together under the term 'designation', that is, having statutory protection under the *Ancient Monuments and Archaeological Areas Act 1979*. A heritage asset is a part of the historic environment that is valued because of its historic, archaeological, architectural or artistic interest; those of national importance have extra legal protection through designation. Important sites have been recognised as requiring protection since the late 19th century, when the first 'schedule' or list of monuments was compiled in 1882. The conservation and preservation of these monuments was given statutory priority over other land uses under this first schedule. County Lists of the monuments are kept and updated by the Department for Culture, Media and Sport. In the later 20th century sites are identified by English Heritage (one of the Government's advisory bodies) of being of national importance and included in the schedule. Under the current statutory protection any works required on or to a designated monument can only be undertaken with a successful application for Scheduled Monument Consent. There are 19,000-20,000 Scheduled Monuments in England.

Registered Parks and Gardens

Culturally and historically important 'man-made' or 'designed' landscapes, such as parks and gardens are currently "listed" on a non-statutory basis, included on the 'Register of Historic Parks and Gardens of special historic interest in England' which was established in 1983 and is, like Listed Buildings and Scheduled Monuments, administered by Historic England. Sites included on this register are of **national importance** and there are currently 1,600 sites on the list, many associated with stately homes of Grade II* or Grade I status. Emphasis is laid on 'designed' landscapes, not the value of botanical planting. Sites can include town squares and private gardens, city parks, cemeteries and gardens around institutions such as hospitals and government buildings. Planned elements and changing fashions in landscaping and forms are a main focus of the assessment.

Registered Battlefields

Battles are dramatic and often pivotal events in the history of any people or nation. Since 1995 Historic England maintains a register of 46 battlefields in order to afford them a measure of protection through the planning

system. The key requirements for registration are battles of national significance, a securely identified location, and its topographical integrity – the ability to ‘read’ the battle on the ground.

World Heritage Sites

Arising from the UNESCO World Heritage Convention in 1972, Article 1 of the Operational Guidelines (2015, no.49) states: ‘Outstanding Universal Value means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity’. These sites are recognised at an international level for their intrinsic importance to the story of humanity, and should be accorded the highest level of protection within the planning system.

Value and Importance

While every heritage asset, designated or otherwise, has some intrinsic merit, the act of designation creates a hierarchy of importance that is reflected by the weight afforded to their preservation and enhancement within the planning system. The system is far from perfect, impaired by an imperfect understanding of individual heritage assets, but the value system that has evolved does provide a useful guide to the *relative* importance of heritage assets. Provision is also made for heritage assets where value is not recognised through designation (e.g. undesignated ‘monuments of Schedulable quality and importance’ should be regarded as being of *high* value); equally, there are designated monuments and structures of *low* relative merit.

Table 6: The hierarchy of value/importance (based on the DMRB vol.11 tables 5.1, 6.1 & 7.1).

Hierarchy of Value/Importance	
Very High	Structures inscribed as of universal importance as World Heritage Sites; Other buildings of recognised international importance; World Heritage Sites (including nominated sites) with archaeological remains; Archaeological assets of acknowledged international importance; Archaeological assets that can contribute significantly to international research objectives; World Heritage Sites inscribed for their historic landscape qualities; Historic landscapes of international value, whether designated or not; Extremely well preserved historic landscapes with exceptional coherence, time-depth, or other critical factor(s).
High	Scheduled Monuments with standing remains; Grade I and Grade II* (Scotland: Category A) Listed Buildings; Other Listed buildings that can be shown to have exceptional qualities in their fabric or historical associations not adequately reflected in the Listing grade; Conservation Areas containing very important buildings; Undesignated structures of clear national importance; Undesignated assets of Schedulable quality and importance; Assets that can contribute significantly to national research objectives. Designated historic landscapes of outstanding interest; Undesignated landscapes of outstanding interest; Undesignated landscapes of high quality and importance, demonstrable national value; Well-preserved historic landscapes, exhibiting considerable coherence, time-depth or other critical factor(s).
Medium	Grade II (Scotland: Category B) Listed Buildings; Historic (unlisted) buildings that can be shown to have exceptional qualities in their fabric or historical associations; Conservation Areas containing buildings that contribute significantly to its historic character; Historic Townscape or built-up areas with important historic integrity in their buildings, or built settings (e.g. including street furniture and other structures); Designated or undesignated archaeological assets that contribute to regional research objectives; Designated special historic landscapes; Undesignated historic landscapes that would justify special historic landscape designation, landscapes of regional value; Averagely well-preserved historic landscapes with reasonable coherence, time-depth or other critical factor(s).
Low	Locally Listed buildings (Scotland Category C(S) Listed Buildings); Historic (unlisted) buildings of modest quality in their fabric or historical association; Historic Townscape or built-up areas of limited historic integrity in their buildings, or built settings

Hierarchy of Value/Importance	
	(e.g. including street furniture and other structures); Designated and undesignated archaeological assets of local importance; Archaeological assets compromised by poor preservation and/or poor survival of contextual associations; Archaeological assets of limited value, but with potential to contribute to local research objectives; Robust undesignated historic landscapes; Historic landscapes with importance to local interest groups; Historic landscapes whose value is limited by poor preservation and/or poor survival of contextual associations.
Negligible	Buildings of no architectural or historical note; buildings of an intrusive character; Assets with very little or no surviving archaeological interest; Landscapes with little or no significant historical interest.
Unknown	Buildings with some hidden (i.e. inaccessible) potential for historic significance; The importance of the archaeological resource has not been ascertained.

Concepts – Conservation Principles

In making an assessment, this document adopts the conservation values (*evidential, historical, aesthetic and communal*) laid out in *Conservation Principles* (English Heritage 2008), and the concepts of *authenticity* and *integrity* as laid out in the guidance on assessing World Heritage Sites (ICOMOS 2011). This is in order to determine the relative importance of *setting* to the significance of a given heritage asset.

Evidential Value

Evidential value (or research potential) is derived from the potential of a structure or site to provide physical evidence about past human activity, and may not be readily recognised or even visible. This is the primary form of data for periods without adequate written documentation. This is the least equivocal value: evidential value is absolute; all other ascribed values (see below) are subjective. However,

Historical Value

Historical value (narrative) is derived from the ways in which past people, events and aspects of life can be connected via a place to the present; it can be *illustrative* or *associative*.

Illustrative value is the visible expression of evidential value; it has the power to aid interpretation of the past through making connections with, and providing insights into, past communities and their activities through a shared experience of place. Illustrative value tends to be greater if a place features the first or only surviving example of a particular innovation of design or technology.

Associative value arises from a connection to a notable person, family, event or historical movement. It can intensify understanding by linking the historical past to the physical present, always assuming the place bears any resemblance to its appearance at the time. Associational value can also be derived from known or suspected links with other monuments (e.g. barrow cemeteries, church towers) or cultural affiliations (e.g. Methodism).

Buildings and landscapes can also be associated with literature, art, music or film, and this association can inform and guide responses to those places.

Historical value depends on sound identification and the direct experience of physical remains or landscapes. Authenticity can be strengthened by change, being a living building or landscape, and historical values are harmed only where adaptation obliterates or conceals them. The appropriate use of a place – e.g. a working mill, or a church for worship – illustrates the relationship between design and function and may make a major contribution to historical value. Conversely, cessation of that activity – e.g. conversion of farm buildings to holiday homes – may essentially destroy it.

Aesthetic Value

Aesthetic value (emotion) is derived from the way in which people draw sensory and intellectual stimulation from a place or landscape. Value can be the result of *conscious design*, or the *fortuitous outcome* of landscape evolution; many places combine both aspects, often enhanced by the passage of time.

Design value relates primarily to the aesthetic qualities generated by the conscious design of a building, structure or landscape; it incorporates composition, materials, philosophy and the role of patronage. It may have associational value, if undertaken by a known architect or landscape gardener, and its importance is enhanced if it is seen as innovative, influential or a good surviving example. Landscape parks, country houses and model farms all have design value. The landscape is not static, and a designed feature can develop and mature, resulting in the 'patina of age'.

Some aesthetic value developed *fortuitously* over time as the result of a succession of responses within a particular cultural framework e.g. the seemingly organic form of an urban or rural landscape or the relationship of vernacular buildings and their materials to the landscape. Aesthetic values are where a proposed development usually has their most pronounced impact: the indirect effects of most developments are predominantly visual or aural, and can extend many kilometres from the site itself. In many instances the impact of a development is incongruous, but that is itself an aesthetic response, conditioned by prevailing cultural attitudes to what the historic landscape should look like.

Communal Value

Communal value (togetherness) is derived from the meaning a place holds for people, and may be closely bound up with historical/associative and aesthetic values; it can be *commemorative, symbolic, social or spiritual*.

Commemorative and symbolic value reflects the meanings of a place to those who draw part of their identity from it, or who have emotional links to it e.g. war memorials. Some buildings or places (e.g. the Palace of Westminster) can symbolise wider values. Other places (e.g. Porton Down Chemical Testing Facility) have negative or uncomfortable associations that nonetheless have meaning and significance to some and should not be forgotten. *Social value* need not have any relationship to surviving fabric, as it is the continuity of function that is important. *Spiritual value* is attached to places and can arise from the beliefs of a particular religion or past or contemporary perceptions of the spirit of place. Spiritual value can be ascribed to places sanctified by hundreds of years of veneration or worship, or wild places with few signs of modern life. Value is dependent on the perceived survival of historic fabric or character, and can be very sensitive to change. The key aspect of communal value is that it brings specific groups of people together in a meaningful way.

Authenticity

Authenticity, as defined by UNESCO (2015, no.80), is the ability of a property to convey the attributes of the outstanding universal value of the property. 'The ability to understand the value attributed to the heritage depends on the degree to which information sources about this value may be understood as credible or truthful'. Outside of a World Heritage Site, authenticity may usefully be employed to convey the sense a place or structure is a truthful representation of the thing it purports to portray. Converted farm buildings, for instance, survive in good condition, but are drained of the authenticity of a working farm environment.

Integrity

Integrity, as defined by UNESCO (2015, no.88), is the measure of wholeness or intactness of the cultural heritage and its attributes. Outside of a World Heritage Site, integrity can be taken to represent the survival and condition of a structure, monument or landscape. The intrinsic value of those examples that survive in good condition is undoubtedly greater than those where survival is partial, and condition poor.

Summary

As indicated, individual developments have a minimal or tangential effect on most of the heritage values outlined above, largely because almost all effects are indirect. The principle values in contention are aesthetic/designed and, to a lesser degree aesthetic/fortuitous. There are also clear implications for other value elements (particularly historical and associational, communal and spiritual), where views or sensory experience is important. As ever, however, the key element here is not the intrinsic value of the heritage asset, nor the impact on setting, but the relative contribution of setting to the value of the asset.

Setting – The Setting of Heritage Assets

The principle guidance on this topic is contained within two publications: *The Setting of Heritage Assets* (Historic England 2015) and *Seeing History in the View* (English Heritage 2011). While interlinked and complementary, it is useful to consider heritage assets in terms of their *setting* i.e. their immediate landscape context and the environment within which they are seen and experienced, and their *views* i.e. designed or fortuitous vistas

experienced by the visitor when at the heritage asset itself, or those that include the heritage asset. This corresponds to the experience of its wider landscape setting.

Where the impact of a proposed development is largely indirect, *setting* is the primary consideration of any HIA. It is a somewhat nebulous and subjective assessment of what does, should, could or did constitute the lived experience of a monument or structure. The following extracts are from the Historic England publication *The Setting of Heritage Assets* (2015, 2 & 4):

The NPPF makes it clear that the setting of a heritage asset is the surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve.

Setting is not a heritage asset, nor a heritage designation. Its importance lies in what it contributes to the significance of the heritage asset. This depends on a wide range of physical elements within, as well as perceptual and associational attributes, pertaining to the heritage asset's surroundings.

While setting can be mapped in the context of an individual application or proposal, it does not have a fixed boundary and cannot be definitively and permanently described for all time as a spatially bounded area or as lying within a set distance of a heritage asset because what comprises a heritage asset's setting may change as the asset and its surroundings evolve or as the asset becomes better understood or due to the varying impacts of different proposals.

The HIA below sets out to determine the magnitude of the effect and the sensitivity of the heritage asset to that effect. The fundamental issue is that proximity and visual and/or aural relationships may affect the experience of a heritage asset, but if setting is tangential to the significance of that monument or structure, then the impact assessment will reflect this. This is explored in more detail below.

Landscape Context

The determination of *landscape context* is an important part of the assessment process. This is the physical space within which any given heritage asset is perceived and experienced. The experience of this physical space is related to the scale of the landform, and modified by cultural and biological factors like field boundaries, settlements, trees and woodland. Together, these determine the character and extent of the setting.

Landscape context is based on topography, and can vary in scale from the very small – e.g. a narrow valley where views and vistas are restricted – to the very large – e.g. wide valleys or extensive upland moors with 360° views. Where very large landforms are concerned, a distinction can be drawn between the immediate context of an asset (this can be limited to a few hundred metres or less, where cultural and biological factors impede visibility and/or experience), and the wider context (i.e. the wider landscape within which the asset sits).

When new developments are introduced into a landscape, proximity alone is not a guide to magnitude of effect. Dependant on the nature and sensitivity of the heritage asset, the magnitude of effect is potentially much greater where the proposed development is to be located within the landscape context of a given heritage asset. Likewise, where the proposed development would be located outside the landscape context of a given heritage asset, the magnitude of effect would usually be lower. Each case is judged on its individual merits, and in some instances the significance of an asset is actually greater outside of its immediate landscape context, for example, where church towers function as landmarks in the wider landscape.

Views

Historic and significant views are the associated and complementary element to setting, but can be considered separately as developments may appear in a designed view without necessarily falling within the setting of a heritage asset *per se*. As such, significant views fall within the aesthetic value of a heritage asset, and may be *designed* (i.e. deliberately conceived and arranged, such as within parkland or an urban environment) or *fortuitous* (i.e. the graduated development of a landscape 'naturally' brings forth something considered aesthetically pleasing, or at least impressive, as with particular rural landscapes or seascapes), or a combination of both (i.e. the *patina of age*, see below). The following extract is from the English Heritage publication *Seeing History in the View* (2011, 3):

Views play an important part in shaping our appreciation and understanding of England's historic environment, whether in towns or cities or in the countryside. Some of those views were deliberately designed to be seen as a

unity. Much more commonly, a significant view is a historical composite, the cumulative result of a long process of development.

The Setting of Heritage Assets (2015, 3) lists a number of instances where views contribute to the particular significance of a heritage asset:

- Views where relationships between the asset and other historic assets or places or natural features are particularly relevant;
- Views with historical associations, including viewing points and the topography of battlefields;
- Views where the composition within the view was a fundamental aspect of the design or function of the heritage asset;
- Views between heritage assets and natural or topographic features, or phenomena such as solar and lunar events;
- Views between heritage assets which were intended to be seen from one another for aesthetic, functional, ceremonial or religious reasons, such as military or defensive sites, telegraphs or beacons, Prehistoric funerary and ceremonial sites.

On a landscape scale, views, taken in the broadest sense, are possible from anywhere to anything, and each may be accorded an aesthetic value according to subjective taste. Given that terrain, the biological and built environment, and public access restrict our theoretical ability to see anything from anywhere, in this assessment the term *principal view* is employed to denote both the deliberate views created within designed landscapes, and those fortuitous views that may be considered of aesthetic value and worth preserving. It should be noted, however, that there are distance thresholds beyond which perception and recognition fail, and this is directly related to the scale, height, massing and nature of the heritage asset in question. For instance, beyond 2km the Grade II cottage comprises a single indistinct component within the wider historic landscape, whereas at 5km or even 10km a large stately home or castle may still be recognisable. By extension, where assets cannot be seen or recognised i.e. entirely concealed within woodland, or too distant to be distinguished, then visual harm to setting is moot. To reflect this emphasis on recognition, the term *landmark asset* is employed to denote those sites where the structure (e.g. church tower), remains (e.g. earthwork ramparts) or – in some instances – the physical character of the immediate landscape (e.g. a distinctive landform like a tall domed hill) make them visible on a landscape scale. In some cases, these landmark assets may exert landscape *primacy*, where they are the tallest or most obvious man-made structure within line-of-sight. However, this is not always the case, typically where there are numerous similar monuments (multiple engine houses in mining areas, for instance) or where modern developments have overtaken the heritage asset in height and/or massing.

Yet visibility alone is not a clear guide to visual impact. People perceive size, shape and distance using many cues, so context is critically important. For instance, research on electricity pylons (Hull & Bishop 1988) has indicated scenic impact is influenced by landscape complexity: the visual impact of pylons is less pronounced within complex scenes, especially at longer distances, presumably because they are less of a focal point and the attention of the observer is diverted. There are many qualifiers that serve to increase or decrease the visual impact of a proposed development (see Table 6), some of which are seasonal or weather-related.

Thus the principal consideration of assessment of indirect effects cannot be visual impact *per se*. It is an assessment of the likely magnitude of effect, the importance of setting to the significance of the heritage asset, and the sensitivity of that setting to the visual or aural intrusion of the proposed development. The schema used to guide assessments is shown in Table 6 (below).

Type and Scale of Impact

The effect of a proposed development on a heritage asset can be direct (i.e. the designated structure itself is being modified or demolished, the archaeological monument will be built over), or indirect (e.g. a housing estate built in the fields next to a Listed farmhouse, and wind turbine erected near a hillfort etc.); in the latter instance the principal effect is on the setting of the heritage asset. A distinction can be made between construction and operational phase effects. Individual developments can affect multiple heritage assets (aggregate impact), and contribute to overall change within the historic environment (cumulative impact).

Construction phase: construction works have direct, physical effects on the buried archaeology of a site, and a pronounced but indirect effect on neighbouring properties. Direct effects may extend beyond the nominal footprint of a site e.g. where related works or site compounds are located off-site. Indirect effects are both visual and aural, and may also affect air quality, water flow and traffic in the local area.

Operational phase: the operational phase of a development is either temporary (e.g. wind turbine or mobile phone mast) or effectively permanent (housing development or road scheme). The effects at this stage are largely indirect, and can be partly mitigated over time through provision of screening. Large development would have an effect on historic landscape character, as they transform areas from one character type (e.g. agricultural farmland) into another (e.g. suburban).

Cumulative Impact: a single development will have a physical and a visual impact, but a second and a third site in the same area will have a synergistic and cumulative impact above and beyond that of a single site. The cumulative impact of a proposed development is particularly difficult to estimate, given the assessment must take into consideration operational, consented and proposals in planning.

Aggregate Impact: a single development will usually affect multiple individual heritage assets. In this assessment, the term aggregate impact is used to distinguish this from cumulative impact. In essence, this is the impact on the designated parts of the historic environment as a whole.

Scale of Impact

The effect of development and associated infrastructure on the historic environment can include positive as well as negative outcomes. However, all development changes the character of a local environment, and alters the character of a building, or the setting within which it is experienced. change is invariably viewed as negative, particularly within respect to larger developments; thus while there can be beneficial outcomes (e.g. positive/moderate), there is a presumption here that, as large and inescapably modern intrusive visual actors in the historic landscape, the impact of a development will almost always be **neutral** (i.e. no impact) or **negative** i.e. it will have a **detrimental impact** on the setting of ancient monuments and protected historic buildings.

This assessment incorporates the systematic approach outlined in the ICOMOS and DoT guidance (see Tables 6-8), used to complement and support the more narrative but subjective approach advocated by Historic England (see Table 6). This provides a useful balance between rigid logic and nebulous subjectivity (e.g. the significance of effect on a Grade II Listed building can never be greater than moderate/large; an impact of negative/substantial is almost never achieved). This is in adherence with GPA3 (2015, 7).

Table 7: Magnitude of Impact (based on DMRB vol.11 tables 5.3, 6.3 and 7.3).

Factors in the Assessment of Magnitude of Impact – Buildings and Archaeology	
Major	Change to key historic building elements, such that the resource is totally altered; Change to most or all key archaeological materials, so that the resource is totally altered; Comprehensive changes to the setting.
Moderate	Change to many key historic building elements, the resource is significantly modified; Changes to many key archaeological materials, so that the resource is clearly modified; Changes to the setting of an historic building or asset, such that it is significantly modified.
Minor	Change to key historic building elements, such that the asset is slightly different; Changes to key archaeological materials, such that the asset is slightly altered; Change to setting of an historic building, such that it is noticeably changed.
Negligible	Slight changes to elements of a heritage asset or setting that hardly affects it.
No Change	No change to fabric or setting.
Factors in the Assessment of Magnitude of Impact – Historic Landscapes	
Major	Change to most or all key historic landscape elements, parcels or components; extreme visual effects; gross change of noise or change to sound quality; fundamental changes to use or access; resulting in total change to historic landscape character unit.
Moderate	Changes to many key historic landscape elements or components, visual change to many key aspects of the historic landscape, noticeable differences in noise quality, considerable changes to use or access; resulting in moderate changes to historic landscape character.
Minor	Changes to few key historic landscape elements, or components, slight visual changes to few key aspects of historic landscape, limited changes to noise levels or sound quality; slight changes to use or access: resulting in minor changes to historic landscape character.
Negligible	Very minor changes to key historic landscape elements, parcels or components, virtually unchanged visual effects, very slight changes in noise levels or sound quality; very slight changes to use or access; resulting in a very small change to historic landscape character.
No Change	No change to elements, parcels or components; no visual or audible changes; no changes

	arising from in amenity or community factors.
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Table 8: Significance of effects matrix (based on DRMB vol.11 tables 5.4, 6.4 and 7.4; ICOMOS 2011, 9-10).

Value of Assets	Magnitude of Impact (positive or negative)				
	No Change	Negligible	Minor	Moderate	Major
Very High	Neutral	Slight	Moderate/Large	Large/Very Large	Very Large
High	Neutral	Slight	Moderate/Slight	Moderate/Large	Large/Very Large
Medium	Neutral	Neutral/Slight	Slight	Moderate	Moderate/Large
Low	Neutral	Neutral/Slight	Neutral/Slight	Slight	Slight/Moderate
Negligible	Neutral	Neutral	Neutral/Slight	Neutral/Slight	Slight

Table 9: Scale of Impact.

Scale of Impact	
<i>Neutral</i>	No impact on the heritage asset.
<i>Negligible</i>	Where the developments may be visible or audible, but would not affect the heritage asset or its setting, due to the nature of the asset, distance, topography, or local blocking.
<i>Negative/minor</i>	Where the development would have an effect on the heritage asset or its setting, but that effect is restricted due to the nature of the asset, distance, or screening from other buildings or vegetation.
<i>Negative/moderate</i>	Where the development would have a pronounced impact on the heritage asset or its setting, due to the sensitivity of the asset and/or proximity. The effect may be ameliorated by screening or mitigation.
<i>Negative/substantial</i>	Where the development would have a severe and unavoidable effect on the heritage asset or its setting, due to the particular sensitivity of the asset and/or close physical proximity. Screening or mitigation could not ameliorate the effect of the development in these instances.

Table 10: Importance of setting to intrinsic significance.

Importance of Setting to the Significance of the Asset	
Paramount	Examples: Round barrow; follies, eye-catchers, stone circles
Integral	Examples: Hillfort; country houses
Important	Examples: Prominent church towers; war memorials
Incidental	Examples: Thatched cottages
Irrelevant	Examples: Milestones

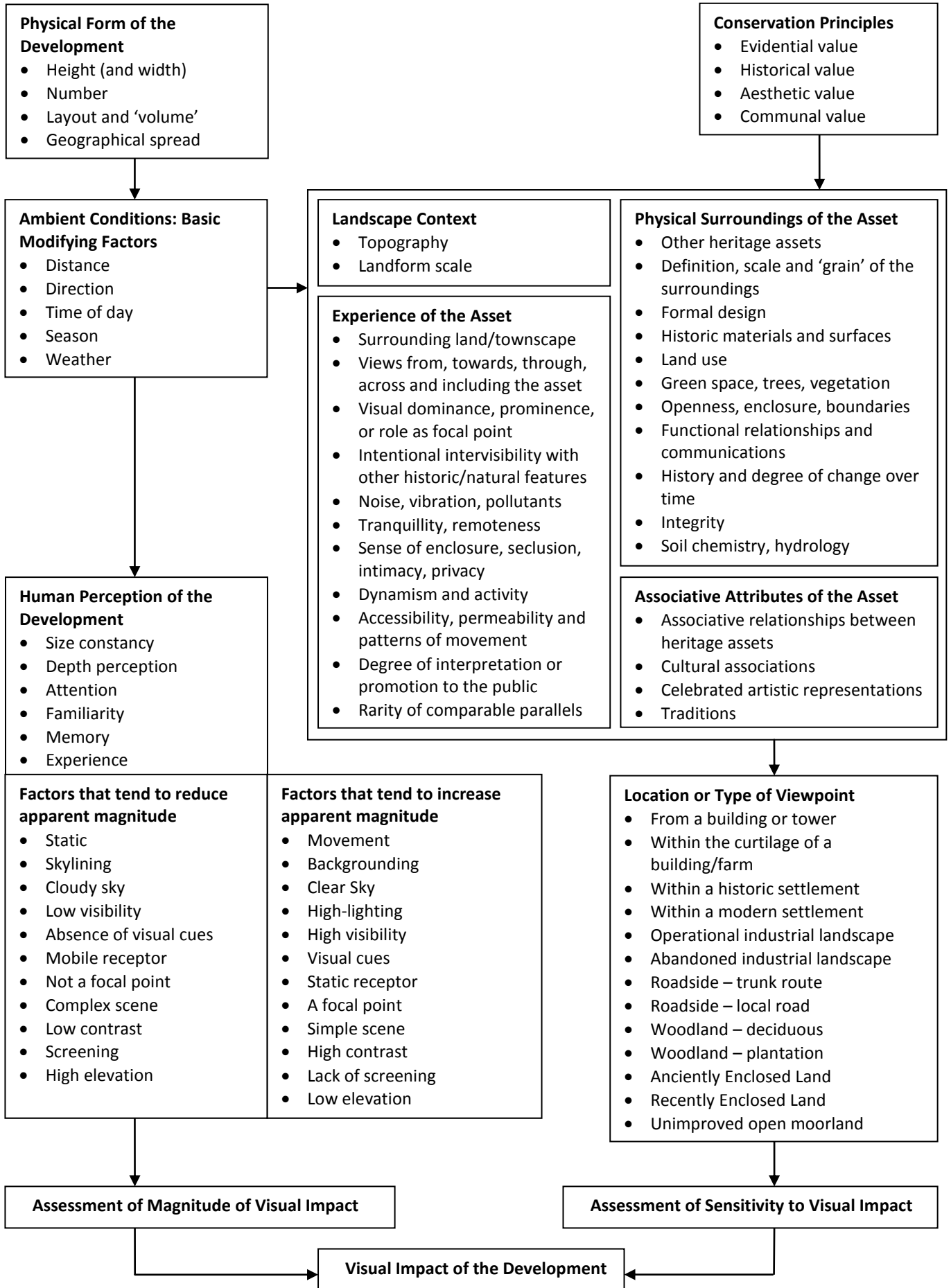


TABLE 11: THE CONCEPTUAL MODEL FOR VISUAL IMPACT ASSESSMENT PROPOSED BY THE UNIVERSITY OF NEWCASTLE (2002, 63), MODIFIED TO INCLUDE ELEMENTS OF ASSESSMENT STEP 2 FROM THE SETTING OF HERITAGE ASSETS (HISTORIC ENGLAND 2015, 9).



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