

# **WHEAL ELLEN ENGINE HOUSE PORTHTOWAN ST. AGNES CORNWALL**

Historic Building Recording & Heritage Impact Assessment



South West Archaeology Ltd. report no. 170612



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## Wheal Ellen Engine House, St. Agnes, Cornwall Historic Building Recording & HIA

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Report Version: FINAL  
12<sup>th</sup> June 2017

Work undertaken by SWARCH for  
Steve Hennessy (The Client)

### Summary

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*South West Archaeology Ltd. was commissioned to undertake historic building recording and a historic impact assessment (HIA) for the engine house at Wheal Ellen, Porthtowan, St. Agnes, Cornwall. This work was undertaken in order to assess the fabric affected by the conversion, restoration and development of this building, the impact it will have on its neighbours and the World Heritage Site and set the buildings in their historical and archaeological context.*

*The engine house is a fine example of its type, of 19<sup>th</sup> century date, standing in a valley group of other well preserved but derelict mining/industrial remains. The form and build of the engine house are crucial to its historic value, architectural interest and primarily to its visual contribution to the wider group, within the World Heritage Site. The engine house was constructed by the Ellen United Copper and Zinc Mining Company (Limited) who were bankrupted the following year. The engine was therefore never installed in this building, leaving its contribution to the mining landscape here as a purely visual one. The building shows signs of forced entries, patching and repairs, so has seen some use, although there are no fittings left to indicate function(s).*

*In addition to the impact on the engine house, a HIA was conducted to determine the impact on mining assets in close proximity to Wheal Ellen. The proposed conversion will have a **negligible to negative/minor** impact on 4 assets and a **negative/minor to negative/moderate** impact on the United Hills engine house. The impact on the World Heritage Site would be **negligible to negative/minor**.*



June 2017

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## ACKNOWLEDGEMENTS

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## 1.0 INTRODUCTION

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**LOCATION:** WHEAL ELLEN ENGINE HOUSE; PORTHTOWAN  
**PARISH:** ST. AGNES  
**COUNTY:** CORNWALL  
**NGR:** SW 7023 4698  
**SWARCH REF:** AWE17

### 1.1 PROJECT BACKGROUND

South West Archaeology Ltd. (SWARCH) was commissioned by Steve Hennessy (The Client) to undertake building recording and heritage impact assessment (HIA) for the Grade II Listed engine house at Wheal Ellen, St. Agnes, Cornwall. This work was undertaken in order to assess the fabric affected by the proposed conversion, restoration and development of this building and set it within its historical and archaeological context.

### 1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

Porthtowan is a small village on the north coast of Cornwall, 2km west of St. Agnes, 4km north of Redruth and approximately 10km west of Truro. The name derives from the Cornish words '*porth*' and '*tewynn*', meaning the landing place at the sand dunes. Wheal Ellen lies to the south-east of the village and forms part of the Cornwall and West Devon Mining Landscape World Heritage Site. The soils of this area are the well drained fine loamy soils over slate or rubble of the Denbigh 2 Association (SSEW 1983); these overlie the sedimentary mudstone and sandstone of the Porthtowan Formation (BGS 2016).

### 1.3 HISTORICAL & ARCHAEOLOGICAL BACKGROUND

The engine house at Wheal Ellen was constructed in 1866 by a company who were intending to rework both Wheal Ellen and Wheal Music and named themselves Ellen United Copper and Zinc Company. The engine was never fitted and there are no records to suggest that the new concern was progressed any further and an entry in the London Gazette (1867) suggests that the company was liquidated in July 1867. Wheal Ellen lies within the St. Agnes Mining District of the Cornwall and West Devon Mining World Heritage Site.

### 1.4 METHODOLOGY

The assessment of the buildings was conducted by Emily Wapshott in June 2017. The work was undertaken in line with best practice and follows the guidance outlined in: ClfA's *Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures* (2014) and Historic England's *Understanding Historic Buildings: A Guide to Good Recording Processes* (2016).

The heritage 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 2011), Managing Change in the Historic Environment: Setting (Historic Scotland 2010), and with

reference to Guidelines for Landscape and Visual Impact Assessment 3<sup>rd</sup> Edition (Landscape Institute 2013).



FIGURE 1: LOCATION MAP.

## 2.0 HISTORIC BUILDING RECORDING

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### 2.1 BUILDING DESCRIPTIONS

#### 2.1.1 BUILDING SUMMARY

19<sup>th</sup> century engine house of rubble build, with granite dressings and brick detailing. The building is rectangular in plan, with a round chimney clasping the south-east corner. The building rises three storeys over an engine pit. The building was constructed to contain a 'pumping beam engine' but no internal fittings or fixtures are evident.

#### 2.1.2 THE NORTH-EAST ELEVATION

The long north-east elevation is a tall three storeys, with three irregularly placed openings, the round chimney shaft bracing the south-east corner. Heavy dressed and faced granite quoins can be seen to the north corner, to the upper section of the wall. The base of the elevation exhibits heavier battered stonework, of more irregular build and form, using larger stones. The bottom quoins are more roughly dressed granite. The stonework above (approximately 2m) becomes looser spread, with a more typically 19<sup>th</sup> century rubble form. The stonework is graduated, becoming lighter weight as the wall rises. Patches of the stonework here exhibit a mix of the original mortar pointing, cement repairs and a large area of more recent pointing, a fresher cream-brown colour, evidence of ongoing maintenance. Three openings span the wall, one on each floor level at the north end; a large rectangular opening on the bottom, a low doorway, with granite reveals and timber lintel; a small square opening just above, with patched brick reveals and narrow timber lintel. On the second floor, there is a large sub-square irregular opening, with narrow timber lintel and sill, with ragged patched reveals, seemingly forced into the elevation. The chimney is a tapering round shape, built onto the engine house with straight joins, also of rubble build and tied in to the main building. The top of the chimney has a red brickwork top, with a projecting cornice to the top and crenulations.

#### 2.1.1 THE NORTH-WEST ELEVATION

The front wall, facing north-west, is the narrow former 'bob wall', a much more substantial build form, as would be expected. The wall only just rises to three storeys, the lowest of the elevations. It has heavy irregular stonework to the base, graduating as it rises to looser set and lighter weight stonework, all of killas rubble. There are formal quoins to the east and west corners, of dressed and faced granite blocks. There is a double height round-headed doorway raised up within the elevation, with granite block reveals and a segmental round-headed quadruple-row brick relieving arch. This elevation shows evidence of removed ivy and some mortar patching indicative of ongoing maintenance.





FIGURE 2: THE NORTH-EAST ELEVATION; FROM THE EAST, NORTH-EAST.

#### 2.1.2 THE SOUTH-WEST ELEVATION

The long south-west elevation is a tall three storeys, with four irregularly placed openings. Heavy dressed and faced granite quoins to the north and south corners. The elevation is of killas rubble, graduated as the wall rises becoming lighter weight, the stonework above 2m becomes looser, with a more typically 19<sup>th</sup> century rubble form. The stonework of this elevation exhibits the original mortar pointing, with some patches of cement repairs. On the ground floor there are two small rectangular low openings with granite reveals and timber lintels, the southern opening ragged and forced at the base. On the upper first floor is a large round-headed opening, with formalised granite block quoins to the reveals and double-row segmental brick arch. On the second floor, just above and to the south is a smaller square opening, with ragged reveals, indicative of possible forcing and a narrow timber lintel. This elevation is in the best condition of the elevations and survives to a greater height, with some ivy to the base.





FIGURE 3 (LEFT): THE CHIMNEY WHICH CLASPS THE CORNER OF THE ENGINE HOUSE, FROM THE SOUTH, SOUTH-EAST.

FIGURE 4 (RIGHT): INTERIOR FACES OF THE TWO LONG WALLS IN THE ENGINE HOUSE; FROM NORTH AND WEST.

#### 2.1.1 THE SOUTH-EAST ELEVATION

The rear, south-east elevation rises to a full three storeys, with three centrally positioned openings, one on each floor. It is dominated by the large round chimney shaft at its east side. Heavy dressed and faced granite block quoins on the west corner. The largest opening is on the lower level, a large round-headed arched doorway, with segmental quadruple-row brick relieving arch, similar to the opening in the front bob wall. This opening also has granite dressed reveals, obscured by dense ivy. Above this, on the first and second floors are small square windows, with granite block reveals; the middle opening has a narrow timber lintel, the top opening only part surviving. The chimney on its east, south-east side has a large arched opening at its base for feeding the fire, with rounded headed segmental double-row brick arch and stone reveals to the sides.

## 2.2 CONDITION/AUTHENTICITY & INTEGRITY

The building is a standing, roofless ruin; structurally quite complete, as the stone walls survive to three storeys, although the tops of the walls are all ragged. The interior floors and all machinery have been lost, affecting the overall integrity of the structure. The building has received some ongoing maintenance as it exhibits patches of repointing and repair, some of the timber lintels likely replaced. The building is wholly authentic, of strong post-industrial character and can clearly be identified by its surviving form.

The building stands out in a derelict former industrial area which has been somewhat reclaimed by nature with gorse, heather, rough grasses and other succulent type species claiming the spoil tips which are scattered across the landscape. The building is seen in contrast to and in the context of

vast views along the valley which include other engine houses, chimneys and ruins, from the same industrial period. This creates a somewhat picturesque and romantic ruin landscape, not reflective of its dirty, scarred, busy mining heritage. The landscape does however place the engine house within a cohesive context, even if the visuals of the landscape have softened and altered, the valley has not been modernised, with almost all of the surviving buildings left as managed ruins. The long term character of the wider mining landscape is protected by a World Heritage Site designation.

### 2.3 SIGNIFICANCE

The building has been designated Grade II and is therefore considered to be of national importance in its own right as a surviving heritage asset. It is of increased value as part of a wider group, surviving within a complete relict landscape of international importance. The long term character of the wider mining landscape is protected by a World Heritage Site designation, the Grade II building part of this 'heritage site'. The significance of the building is as a particularly good example of its type, surviving in relatively good condition. Its architectural interest is in its specific form, which indicates its intended former function, as well as some of its features, such as the segmental arches and tall chimney, of fine industrial workmanship.

### 2.4 HISTORIC PHASING OF THE BUILDING

There is evidence of some minor alteration or phasing within the openings, with the quality of build varying, some clearly forced into the wall at a later date. There is also evidence for repairs to the structure, such as the raise or rebuild to the top of the chimney. Overall the engine house appears to be of one build, with the only anomalous area the particularly heavy and irregular stonework to the base of the long north-east elevation. This area of marginally different stonework is not substantive enough to confirm a different phase, but it is worth pointing out that the engine house may be an enlargement or development of another of similar plan on the same spot.

### 3.0 HERITAGE IMPACT ASSESSMENT

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#### 3.1 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.

#### 3.2 METHODOLOGY

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.

The proposed development consists of the construction of two new water tanks within an existing structure (covered car park), together with surface water pipes. Given the highly restricted nature of this development – the tanks themselves would be concealed within an existing modern structure – the detail of the assessment methodology is relegated to Appendix 2.

##### 3.2.1 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 wind turbine 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.

##### **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 18<sup>th</sup> and 19<sup>th</sup> 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.

<b>Asset Name: Chimney at SW703472</b>	
<i>Parish:</i> St Agnes	<i>Designation:</i> Grade II
<i>Value:</i> Medium	<i>Distance to Development:</i> within 1km
<i>Summary:</i> 19 <sup>th</sup> century rubble built chimney, part of the Tywarnhaile Mine complex. Large round shaft, tapered to the top, surviving in a good but derelict condition, as part of the wider group of mine buildings within the valley, part of the World Heritage Site.	
<i>Conservation Value:</i> Historically important as part of the 19 <sup>th</sup> century mining industry and World Heritage Site. Evidential value as many of these buildings have been left derelict since closure with potential for further detailed physical archaeological works on and around the ruins.	
<i>Authenticity and Integrity:</i> The chimney is derelict and semi-ruinous but upstanding, having been left abandoned. It can still clearly be identified as a former industrial complex and survives with other undesignated remains.	
<i>Setting:</i> Having been left abandoned, the industrial setting is returning to a wilder character, with gorse, rough grasses and typical upland succulents dominating, with a few low scrub trees on the lower slopes and within the valley bottom. Loose stone, former tips, potential shafts, and the ruins of other assets can be seen in wider views. A small mine workers cottage and two converted mine buildings lie directly to the south and south-east, making up the rest of the former Wheal Ellen mine complex.	
<i>Contribution of Setting to the Significance of the Asset:</i> The wider area is protected by its World Heritage Site status and a lack of overall development in the valley landscape has allowed the post-industrial character to remain strongly dominant if softened by foliage, forming a 'reserve' style landscape. The wider group of surviving assets in the valley create a unique context in which to interpret the chimney, allowing an appreciation for how closely set the various mining businesses were and how intensively mined the landscape was. Wheal Ellen is already of domestic character, with one surviving cottage and other small mine buildings which have been converted into holiday cottages. This creates something of a mixed use immediate setting to the engine house.	
<p><i>Magnitude of Effect:</i> The conversion of a mine engine house within the valley is unlikely to greatly alter its exterior appearance. It is the potential for change in the character of the setting of the engine house which is a cause for concern, as a domestic dwelling would be expected to develop/landscape a garden and have some form of driveway/parking area, where currently the engine house is flanked by overgrown mining tips and is very open in views. The Wheal Ellen engine house sits at the heart of all inward views to the valley. Any change in its surroundings will effect impressions of the whole. For example, the chimney at SW703472 is a standalone feature of tall profile but limited presence in comparison with the engine houses and this asset would be negatively affected by the draw of focus to the newly converted building which is conveniently near to the road.</p> <p>Once one building in this landscape has been developed there is a risk of setting precedent and the generally open and unrestricted nature of the valley would change, as an area of private land would inevitably be marked out and the general public would be limited from exploring and experiencing the engine house as part of the wider group. All of these potential issues have an indirect effect on the other assets which make up the valley grouping.</p> <p>The chimney is less impacted by changes as it stands to the north-east along the curving tributary valley away from the road and more obvious assets on the brow of the hill; there is some localised screening from scrub trees.</p>	
<i>Magnitude of Impact:</i> Medium value asset and Minor change = Slight impact.	
<i>Overall Impact Assessment:</i> Negative/minor impact.	

<b>Asset name: United Hills Engine House (SW700472)</b>	
<i>Parish:</i> St Agnes	<i>Designation:</i> Grade II
<i>Value:</i> Medium	<i>Distance to Development:</i> less than 1km
<i>Summary:</i> Large 19 <sup>th</sup> century pumping beam engine house of typical killas rubble build with granite dressings and an aggrandised granite ashlar frontage. The building is roofless, of rectangular plan with round chimney to	

north-west corner. Multiple openings to each wall, with timber lintels. Attached buildings, also ruinous, just below on the slope. This is a significantly larger engine house, with a clear investment of money represented in its strong architecturally considered presentation front.

*Conservation value:* Aesthetic value, of post-industrial picturesque 'romantic-ruin' appearance, on the skyline and of added aesthetic value as its appearance was considered, with its ashlar frontage. Historically important as part of the 19<sup>th</sup> century World Heritage Site.

Evidential value as many of these buildings have been left derelict since closure with potential for further detailed physical archaeological works on and around the ruins.

*Authenticity and Integrity:* The engine house is derelict and semi-ruinous but upstanding, having been left abandoned. It has strong historic industrial character and survives with other undesignated remains in its immediate vicinity.

*Setting:* The engine house sits just off the peak of the curving ridge which forms the north and east side of the valley, in a visually dominant position. It stands on an exposed slope, with low building remains to the south-east, tips to the south-west and open ground behind, creating a powerful vertical visual profile on the skyline. This engine house has been purposefully set to dominate the valley and make a powerful statement on the success of its associated mine business/company.

*Contribution of Setting to the Significance of the Asset:* The wider area is protected by World Heritage status and therefore a lack of overall development in the valley landscape has allowed the post-industrial character to remain strongly dominant if somewhat softened by foliage, forming a 'reserve' style landscape. The wider group of surviving assets in the valley create a unique context in which to interpret the engine house, allowing an appreciation for how intensively mined the landscape was.

The United Hills engine house is considerably larger than its neighbours, with a clear investment of money represented in its strong, architecturally considered presentation front; when combined with its purposeful skyline setting, this engine house was fully intended to dominate the valley.

*Magnitude of Effect:* The conversion of an engine house is unlikely to greatly alter its exterior appearance, and therefore will not have a direct visual impact on the United Hills engine house. However, Wheal Ellen and United Hills have a very unique and specific spatial relationship, with the two frontages of the engine houses facing each other, respecting or addressing each other in the landscape.

With its conversion to a domestic dwelling, there is potential for a change in the character of the setting of the Wheal Ellen engine house and therefore an indirect impact on United Hills. As a domestic dwelling, Wheal Ellen would be expected to develop a garden and have some form of driveway/parking area. There is the risk of unintentional aggrandisement of the setting of Wheal Ellen, drawing attention to it in views and detracting from the United Hills engine house which currently has landscape primacy.

*Magnitude of Impact:* Medium value asset + Minor change = Slight.

*Overall Impact Assessment:* Negative/minor to moderate impact.

<b>Asset Name: Boiler House at approx 150m south-east of Lower Engine House</b>	
Parish: St Agnes	Designation: Grade II
Value: Medium	Distance to Development: approx 1-1.5km
Summary: Early 19 <sup>th</sup> century boiler house of killas rubble construction built into the bank, and enclosed by an L-shaped yard. Roofless, with a rounded arched furnace structure to the rear. No fittings survive. On the side of the road, in a complex of mine buildings, standing to the south of a large roofed killas and granite mine building, with more ruins and a 19 <sup>th</sup> century workers cottage; the ruins clad in ivy and foliage.	
Conservation Value: Historic value as part of the World Heritage site. Evidential value as many of the mining buildings have been left derelict since closure with potential for further archaeological works on and around the ruins.	
Authenticity and Integrity: Surviving in a roofless but structurally quite complete state, with upstanding walls and surviving historic detailing, such as the furnace. This is abandoned and ruinous but clearly of strong historic industrial character.	
Setting: The ruins stand in a compound with stone walls and gate, by the side of the road, in the base of the valley. To the immediate north one of the larger mine buildings is complete and roofed, with an occupied mine	

workers cottage beyond, and other ruined buildings built into the bank in and around the building. The engine house and chimney stand up on the slope just to the north-east, the visually dominant United Hills engine house to the south-east, at the top of the slope.

Contribution of Setting to the Significance of the Asset: The wider area is protected by World Heritage status and therefore a lack of overall development in the valley has allowed the post-industrial character to remain strongly dominant if softened by foliage, forming a 'reserve' style landscape. The exceptional group of surviving assets in the valley and particularly the survival of so many standing ruins in the immediate setting create a unique and cohesive context in which to interpret the boiler house, as part of a vast mining complex.

Magnitude of Effect: There is no direct view from the ruined boiler house to the engine house at Wheal Ellen, as it is screened by other buildings to the south, but there is a general view from along the road, adjacent to the group of assets, back to the engine house.

The conversion of the engine house is unlikely to change its exterior appearance so distant views will not change.

However, once one building in this landscape has been developed there is a risk of setting precedent and the generally open and unrestricted nature of the valley would change, as an area of private land would inevitably be marked out around the newly converted building. The general public would be limited from exploring and experiencing the Wheal Ellen engine house as part of this wider group, including the boiler house. All of these potential issues have an indirect effect on the other assets which make up the valley grouping.

Magnitude of Impact: Medium value asset + Minor to Negligible change = Neutral/Slight

Overall Impact Assessment: Negligible impact.

Asset Name: <b>Lower Engine House (AT SW698472)</b>	
Parish: St Agnes	Designation: Grade II
Value: Medium	Distance to Development: approx 1-1.5km
Summary: Early 19 <sup>th</sup> century engine house of killas rubble, now ruinous, of rectangular plan and typical three storeys. Tall doorway and large opening in front wall, facing west across the valley, the building is terraced into the slope to the east side.	
Conservation Value: Historic value as this is supposedly the last engine house fitted with a wooded bob engine, although none of its machinery survives today. Additional historic value as part of the World Heritage site. Evidential value is considerable due to unusual design, with reported plaster to its interior wall faces.	
Authenticity and Integrity: Whilst ruined the building is upstanding, with three storey walls and, although roofless, is actually quite complete structurally. It is of strong historic industrial character, although a little obscured by foliage and therefore less easily identified, giving it an inappropriate older, 'romantic ruin' appearance.	
Setting: The engine house sits on the low to mid slopes, above the road, on the east side of the valley. Immediately to the north is its chimney and below is a larger complex of ruins, a standing building and mine workers cottage. The engine house sits in the narrow v-shaped section of the valley to the north, as it runs out to the sea.	
Contribution of Setting to the Significance of the Asset: The wider area is protected by World Heritage status and therefore a lack of overall development in the valley has allowed the post-industrial character to remain strongly dominant if softened by foliage, forming a 'reserve' style landscape. The exceptional group of surviving assets in the valley and particularly the survival of so many standing ruins in the immediate setting, create a unique and cohesive context in which to interpret the engine house, as part of a vast mining complex.	
Magnitude of Effect: There is a direct, if slightly limited view from the Lower Engine house to the engine house at Wheal Ellen, partly framed by the v-shaped valley, partly screened by the curve in the eastern slope. The conversion of the engine house is unlikely to change its exterior appearance so distant views will not change. The spatial relationship between the engine houses in the valley, so important for our appreciation of mining intensity in these parts, would not be affected.	
However, once one building in this landscape has been developed there is a risk of setting precedent and the generally open and unrestricted nature of the valley would change, as an area of private land would inevitably be marked out around the newly converted building. The general public would be limited from exploring and experiencing the Wheal Ellen engine house as part of this wider group, including the boiler house. All of these	



potential issues have an indirect effect on the other assets which make up the valley grouping.
Magnitude of Impact: Medium value asset + minor change = Slight.
Overall Impact Assessment: Negligible to negative/minor impact.

Asset Name: <b>Chimney immediately west of Tywarnhaile Lower Engine House</b>	
Parish: St Agnes	Designation: Grade II
Value: Medium	Distance to Development: approx 1-1.5km
Summary: Detached early 19 <sup>th</sup> century chimney for the adjacent Lower Engine House. Built of killas rubble, the chimney is round and tapered to the top. The lower parts of this chimney are somewhat obscured by ivy foliage, like the engine house.	
Conservation Value: Historic value as part of the World Heritage site. Evidential value as many of these buildings have been left derelict since closure with potential for further archaeological works on and around the ruins.	
Authenticity and Integrity: The chimney survives largely intact structurally, is of strong historic industrial character and survives in context with its associated engine house.	
Setting: The chimney sits with its engine house on the low to mid slopes, above the road, on the east side of the valley. Immediately to the south is its associated engine house and below is a larger complex of ruins, a standing building and mine workers cottage. The complex sits in the narrow v-shaped section of the valley to the north, as it runs out to the sea.	
Contribution of Setting to the Significance of the Asset: The wider area is protected by World Heritage status and therefore a lack of overall development in the valley has allowed the post-industrial character to remain strongly dominant if somewhat softened by foliage, forming a 'reserve' style landscape. The exceptional group of surviving assets in the valley and particularly the survival of so many standing ruins in the immediate setting create a unique and cohesive context in which to interpret the chimney, as part of a vast mining complex.	
Magnitude of Effect: There is a direct, if slightly limited view from the chimney to the engine house at Wheal Ellen, partly framed by the v-shaped valley, partly screened by the curve in the eastern slope. The engine house screens some views and dominates all views south due to its association and proximity. The conversion of a distant engine house will have little direct effect on a chimney shaft. Once a building in this landscape has been developed there is a risk of setting precedent and the generally open and unrestricted nature of the valley would change, as an area of private land would inevitably be marked out around the newly converted building. The general public would be limited from exploring and experiencing the Wheal Ellen engine house as part of this wider group, including the chimney. All of these potential issues have an indirect effect on the other assets which make up the valley grouping.	
Magnitude of Impact: Medium value asset + Negligible change = Neutral/slight.	
Overall Impact Assessment: Negligible impact.	

### 3.2.2 WORLD HERITAGE SITE

*The UNESCO summary for the World Heritage Site 'Cornwall and West Devon Mining Landscape': Ref: 1215:*

*Much of the landscape of Cornwall and West Devon was transformed in the 18th and early 19th centuries as a result of the rapid growth of pioneering copper and tin mining. Its deep underground mines, engine houses, foundries, new towns, smallholdings, ports and harbours, and their ancillary industries together reflect prolific innovation which, in the early 19th century, enabled the region to produce two-thirds of the world's supply of copper. The substantial remains are a testimony to the contribution Cornwall and West Devon made to the Industrial Revolution in the rest of Britain and to the fundamental influence the area had on the mining world at large. Cornish technology embodied in engines, engine houses and mining equipment was exported around the world. Cornwall and West Devon were the heartland from which mining technology rapidly spread.*

Criterion IV in the more detailed discursive text lays particular prominence on the engine houses, within the landscape and their wider influence through technological advancement and overall significance to the value of the World Heritage Site.

**Criterion (iv):** *The mining landscape of Cornwall and west Devon, and particularly its characteristic engine houses and beam engines as a technological ensemble in a landscape, reflect the substantial contribution the area made to the Industrial Revolution and formative changes in mining practices around the world.*

The authenticity and cohesive character of the landscape and the assets which survive within and across it are also valued highly and are a main feature of the 'outstanding value' designation of the World Heritage site. This section on authenticity also emphasises the importance of planning control to ensure ongoing protection against inappropriate development.

**Authenticity:** *The property as a whole has high authenticity in terms of form, design and materials and, in general, the location and setting of the surviving features. The mines, engine houses, associated buildings and other features have either been consolidated or await work. In the villages and towns there has been some loss of architectural detail, particularly in the terraced housing, but it is considered that this is reversible.*

*The ability of features within the property to continue to express its Outstanding Universal Value may be reduced, however, if developments were to be permitted without sufficient regard to their historic character as constituent parts of the Site. The spatial arrangements of areas such as Hayle Harbour and the settings of Redruth and Camborne are of particular concern and these may be vulnerable unless planning policies and guidance are rigorously and consistently applied.*

Engine houses are considered the primary architectural element of the historic landscape and also play a major role in the international value of the area, representing the technology which drove and advanced the industrial revolution, influencing the modern world. These are therefore individually valuable as constituent parts and of increased value as a group. Wheal Ellen is a particularly good example, both for its architectural details and its upstanding and almost complete condition. However, the Ellen United Copper and Zinc Mining Company, who built the engine house in 1866, went bankrupt in 1867, the engine was never installed and the building is therefore cohesive with the other buildings in the World Heritage Site for its architecture rather than for a common function.

We cannot look at the physical impact of the building conversion alone, which will alter the appearance by adding a roof and restoring floors and glazing; we must consider the impact that alteration may have on the engine houses in the immediate vicinity and in any alteration to the character of the wider valley.

The lack of development in the valley has allowed the post-industrial character to remain strongly dominant, although softened by foliage, obscuring the scarring of the former agricultural fields and valleys by the mining tips or open-cast works; forming a 'reserve' style landscape. The buildings and ruins are in a managed, ruinous state, many consolidated. With the onset of foliage a romantic ruin aspect has been created, out of sync with the landscapes industrial past. The wider group of surviving assets in the valley below Porthtowan is less representative of this picturesque character with clear tips and scars, still post-industrial in character.

The exceptional group of mine buildings in the valley create a unique context in which to interpret the Wheal Ellen engine house, allowing an appreciation for how closely set the various mining businesses were and how intensively the landscape was mined. Wheal Ellen is already of domestic character, with one surviving cottage and other small mine buildings which have been converted to holiday cottages. The engine house is of historic industrial appearance but, as mentioned above was

never fitted with an engine, used for other purposes until falling into dereliction. The holiday use of the rest of the Wheal Ellen site does also create something of a mixed use immediate setting to the engine house. The conversion of the engine house at Wheal Ellen is unlikely to greatly alter its exterior appearance, and therefore it will likely only have a very slight direct visual impact on the valleys views. It is the potential for change in the character of the setting of the engine house which is a cause for concern and the indirect impact on wider valley views. A domestic dwelling would be expected to develop/landscape a garden and have some form of driveway/parking area, where the engine house is currently flanked by overgrown mining tips and is very open in views. In all inward views Wheal Ellen engine house sits at the heart of the valley as a visual focus, from the west, along Chapel Hill and from the high ridge to the north east, near United Hills. Although the addition of a garden or parking space would have the potential to impact the character of the building, it did not function as an engine house, so our understanding is already privy to misdirection. The building is already the focus of views inward, so the “draw” of a garden or parking space would be of little consequence. It would have potential impact on the visual primacy experienced by the United Hills Engine House, whose large size; fine architecture and placement make a statement. Improvements to Wheal Ellen may divert views from the United Hills engine house on the skyline while traversing the valley.

There is a risk of setting precedent with the development of Wheal Ellen and the generally open and unrestricted nature of the valley would change, as an area of private land would inevitably be marked out around converted dwellings, however, the converted mine buildings at Wheal Ellen have already given the site a more domestic feel, so it would not be out of keeping with its immediate group. The general public would be limited from exploring and experiencing the engine house as part of the wider group, with much of the area being open access land.

The conversion of the Wheal Ellen engine house will have a very limited impact on the external appearance of the building and will not mask the identification of the function it was intended to perform, although the intention was never realised. Views inwards will retain the building as a focus, with a potentially slight change to the immediate setting. The impact on the primacy of the United Hills engine house is more tangible, but could be reduced with careful design and mitigation. The overall impact on the World Heritage Site is therefore deemed to be **negligible to negative/minor**.

## 4.0 CONCLUSIONS AND RECOMMENDATIONS

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### 4.1 CONCLUSIONS

The engine house is a fine example of its type, of 19<sup>th</sup> century date, standing in a valley group of other well preserved but derelict mining/industrial remains. The form and build of the engine house are crucial to its historic value, architectural interest and primarily to its visual contribution to the wider group, within the World Heritage site. The engine house was constructed by the Ellen United Copper and Zinc Mining Company (Limited) who were bankrupted the following year. The engine was therefore never installed in this building, leaving its contribution to the mining landscape here as a purely visual one. The building shows signs of forced entries, patching and repairs, so has seen some use, although there are no fittings left to indicate function(s).

In addition to the impact on the engine house, a HIA was conducted to determine the impact on mining assets in close proximity to Wheal Ellen. The proposed conversion will have a **negligible to negative/minor** impact on four assets and a **negative/minor to negative/moderate** impact on the United Hills engine house. The impact on the World Heritage Site would be **negligible to negative/minor**.

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APPENDIX 1: LISTING TEXT

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ST AGNES WHEAL ELLEN

SW 74 NW

7/258 Engine house at SW70234698

GV II

Pumping beam engine house at Wheal Ellen Mine, disused. Circa mid C19. Granite and slate killas rubble with granite dressings. Brick to upper part of chimney. Brick arches and timber lintels.

Plan: Rectangular plan engine house with round chimney clasping the rear left-hand corner. No surviving wooden floors, roof structure or machinery.

Exterior: 3 storeys over basement. Unaltered elevations except that rear gable has fallen and front upper corners of the wing walls have been demolished. Front (bob) wall has central round-headed doorway. Rear formerly gable end wall has large round-headed cylinder doorway and window opening to each floor above. Right-hand (nearside) wall has 2 ground floor openings, a central round-headed window opening to the first floor and another opening slightly above and to the right of the windows. Left-hand (offside) wall has small doorway on the right and a small opening to each of the upper floors. The tapered chimney has a brick collar near the top and brick battlements over a brick cornice, at the top. Interior has no machinery. Source: Sharpe, Adam and Smith, John. Engine Houses in St Agnes Parish. (Cornwall Archaeological Unit survey for Carrick District Council.



## APPENDIX 2: IMPACT ASSESSMENT METHODOLOGY

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### 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.

#### 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 19<sup>th</sup> 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 20<sup>th</sup> 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.

#### 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 19<sup>th</sup> 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*.

### 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 1: 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 (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 have 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 farmbuildings, 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 principal 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 4), 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 4 (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.

APPENDIX 3: SUPPORTING PHOTOGRAPHS

BUILDING RECORDING



THE NORTH-EAST ELEVATION; FROM THE EAST, NORTH-EAST.



LEFT: THE FRONT 'BOB WALL'; FROM THE NORTH, NORTH-WEST.

RIGHT: THE LONG SOUTH-WEST FACING ELEVATION; FROM THE WEST





LEFT: THE CHIMNEY WHICH CLASPS THE CORNER OF THE ENGINE HOUSE, FROM THE SOUTH, SOUTH-EAST.

RIGHT: THE REAR WALL OF THE ENGINE HOUSE; FROM THE SOUTH-WEST.



THE OPENING AT THE BASE OF THE CHIMNEY; FROM THE SOUTH.





THE LARGE DOORWAY IN THE REAR ELEVATION; FROM THE SOUTH-WEST.



DETAIL OF OPENING WITH A WEATHERED ORIGINAL TIMBER LINTEL, IN THE REAR WALL OF THE ENGINE HOUSE; FROM THE SOUTH-WEST.





LEFT: VIEW OF THE JOINT BETWEEN THE CHIMNEY AND ENGINE HOUSE; FROM THE NORTH, NORTH-EAST.

RIGHT: THE DRESSED AND FACED QUOINS TO THE NORTH CORNER; FROM THE EAST.



LEFT: DETAILED VIEW OF THE OPENINGS, OF DIFFERING STYLE IN THE LONG SOUTH WEST ELEVATION; FROM THE WEST.

RIGHT: DETAIL OF THE QUOINS TO THE WEST CORNER; FROM THE WEST, SOUTH-WEST.





LEFT: VIEW INTO THE INTERIOR OF THE ENGINE HOUSE, LOOKING UP; FROM THE NORTH, NORTH-WEST.

RIGHT: INTERIOR FACES OF THE TWO LONG WALLS IN THE ENGINE HOUSE; FROM NORTH AND WEST.



VIEW OF THE ENGINE PIT IN THE BUILDING; FROM THE NORTH, NORTH-WEST.





VIEW LOOKING UP THE INTERIOR FACE OF THE CHIMNEY SHAFT; FROM THE WEST.



VIEW OF THE PARTICULARLY HEAVY BASE OF THE WALL TO THE LONG NORTH-EAST ELEVATION; FROM THE EAST.





WIDER ANGLED VIEW OF THE ENGINE HOUSE, WITHIN ITS SETTING; FROM THE NORTH.

## HIA



VIEW DOWN INTO THE VALLEY FROM CHAPEL HILL, LOOKING ACROSS THE WORLD HERITAGE SITE; FROM THE SOUTH-WEST.





MORE DETAILED VIEW SHOWING THE ENGINE HOUSE IN THE FOREGROUND; FROM THE SOUTH-WEST



VIEW TOWARDS THE ENGINE HOUSE AND INTO THE VALLEY FROM THE ROAD TO HAWKE SETTLEMENT; FROM THE EAST





THE ADJACENT COTTAGE AND OTHER MINE RUINS AT WHEAL ELLEN; FROM THE WEST, NORTH-WEST.



THE OTHER MINE RUINS AND BUILDINGS, SOME CONVERTED, SOME ALREADY DOMESTIC, LIKE THE COTTAGE; FROM THE NORTH





VIEW TO MINE RUINS ON THE LOWER SLOPES TO THE NORTH-EAST OF THE ENGINE HOUSE; FROM THE SOUTH, SOUTH-WEST.



AS ABOVE





VIEW UP THE VALLEY, SHOWING THE VISUAL SKYLINE DOMINANCE OF THE UNITED HILLS ENGINE HOUSE TO THE NORTH; FROM THE SOUTH, SOUTH-EAST.



VIEW TO THE LISTED CHIMNEY TO THE NORTH-EAST, SHOWING SOME MINOR LOCALISED SCREENING FROM TREES AND A SMALL, OCCUPIED MINE COTTAGE ON THE LOWER SLOPES; FROM THE WEST, SOUTH-WEST.





VIEW ALONG THE VALLEY FROM THE MAIN ROAD TO PORTHTOWAN, SHOWING THE MINE BUILDINGS FRAMED BY THE DEEP V-SHAPE OF THE VALLEY; FROM THE NORTH, NORTH-WEST.



VIEW OF THE CHIMNEY AT THE HEAD OF THE VALLEY; FROM THE SOUTH-EAST.





VIEW ALONG THE MID SLOPES OF THE EAST SIDE OF THE VALLEY; FROM THE NORTH.



VIEW OF UNITED HILLS ENGINE HOUSE ON THE BREAK OF THE SLOPE; FROM THE WEST, NORTH-WEST.





VIEW BACK DOWN TO WHEAL ELLEN ENGINE HOUSE, FROM UNITED HILLS ENGINE HOUSE; FROM THE NORTH, NORTH-EAST.



VIEW TO FURTHER MINE BUILDINGS ON THE TOP OF THE RIDGE, TO THE EAST OF UNITED HILLS ENGINE HOUSE; FROM THE WEST.





WIDER VIEW ALONG AND ACROSS THE VALLEY, PART OF THE WORLD HERITAGE SITE, SHOWING THE WHEAL ELLEN ENGINE HOUSE AT ITS HEART; FROM THE NORTH-EAST.



The Old Dairy  
Hacche Lane Business Park  
Pathfields Business Park  
South Molton  
Devon  
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