



Chapter 8: Cultural Heritage

Cossans Solar & BESS EIA Report

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Acronyms and Abbreviations

AOD	Above Ordnance Datum
CifA	Chartered Institute for Archaeologists
CUCAP	Cambridge University Centre for Aerial Photographs
DTM	Digital Terrain Model
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
ESRI	Environmental Systems Research Institute
GDL	Garden and Designed Landscape
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
HEP	Historic Environment Policy
HEPS	Historic Environment Policy for Scotland
HER	Historic Environment Record
HES	Historic Environment Scotland
HLAMap	Historic Land-use Assessment
ICOMOS	Incorporated International Council on Monuments and Sites
IEMA	Institute of Environmental Management & Assessment
LiDAR	Light Detection and Ranging
NCAP	National Collection of Aerial Photographs
NLS	National Library of Scotland
NPF4	The National Planning Framework for Scotland
NRHE	National Record of the Historic Environment
NTS	Non-Technical Summary
ORCA	Orkney Research Centre for Archaeology
PAN	Planning Advice Note
PiC	HES Property in Care
RO	Registered Organisation
RTPI	Royal Town Planning Institute
SM	Scheduled Monument
SNH	Scottish Natural Heritage
WSI	Written Scheme of Investigation



8. Cultural Heritage

8.1 Executive Summary

- 8.1.1 This chapter considers the archaeological and cultural heritage value of the Site and assesses the likely significant effects on archaeological features and heritage assets resulting from the construction, operation and decommissioning of the Proposed Development.
- 8.1.2 Archaeological evidence indicates that the vicinity of the Site was focus of early medieval activity as exemplified by the Pictish St Orland's Stone (Asset 2) located c. 200m to the north of the Site. Medieval activity in the Study Area is reflected by agricultural features as well as the predecessor of Glamis Castle (Asset 18) c. 1.5km to the southeast of the Site and Cossans Castle (Asset 159) c. 240m to the northwest of the Site. Cartographic evidence shows the Site within agricultural land associated with Haughs of Cossans farmstead (Asset 148) since at least the early 19th century.
- 8.1.3 This assessment has identified a potential **Moderate** level of direct effect during construction on cropmarks west of Haugh of Cossans (Asset 210) and the site of the Sodha Cottages (Asset 190). Potential **Minor** Levels of effect upon possible pits or ponds (Assets 185-190) and a former woodland (Asset 210) have also been identified.
- 8.1.4 No direct effects upon designated or non-designated assets are anticipated during the operational phase.
- 8.1.5 This assessment has established that the Proposed Development would have a **Moderate** level of effect upon the setting of the St Orland's Stone (Asset 2) and Haughs of Cossans Farmhouse (Asset 148). It is considered that the ability of the asset's setting to contribute to the understanding, appreciation and experience of the asset and its significance would be adequately retained in each case and there would not be an adverse impact upon the integrity of the setting of St Orland's stone or on the character and special architectural and historic interest of the Haughs of Cossans Farmhouse.
- 8.1.6 **Minor** levels of effect are predicted for Glamis Castle GDL (Asset 16), a **Negligible** level of Effect on nine designated assets (Assets 3, 6, 9, 11, 48, 66, 120 and 148-156), a **Neutral** effect upon seven designated assets (Assets 5, 13, 21, 46, 108, 122 and 157) and no effect upon the remaining designated assets.
- 8.1.7 In accordance with national and local planning policies on heritage, an archaeological programme of works will be required in advance of the construction of the Proposed Development. The purpose of the works will be to determine the presence, character, extent and significance of any currently unknown archaeological features or artefacts that may be disturbed by ground-breaking works and to mitigate any impact upon them either through avoidance or, if preservation in situ is not warranted, through preservation by record. The scope and scale of these works will need to be agreed with Angus Council, as advised by the



Aberdeenshire Council Archaeology Service (ACAS), via a Written Scheme of Investigation (WSI).

8.2 Introduction

- 8.2.1 This chapter considers the archaeological and cultural heritage value of the Site proposed for development and assesses the likely significant effects on archaeological features and heritage assets resulting from the construction, operation and decommissioning of the Proposed Development.
- 8.2.2 The specific objectives of the chapter are to:
- describe the cultural heritage and archaeology baseline;
 - describe the assessment methodology and significance criteria used in completing the impact assessment;
 - describe the potential effects, including direct, settings and cumulative effects;
 - describe the mitigation measures that will be implemented to address likely significant effects; and
 - assess the residual effects remaining following the implementation of mitigation.
- 8.2.3 This assessment has been carried out in accordance with the standards of professional conduct outlined in the Chartered Institute for Archaeologists (CIfA) Code of Conduct (CIfA, 2022) and Professional Conduct (CIfA, 2021), as well as the CIfA Standard and guidance for commissioning work on, or providing consultancy advice on, archaeology and the historic environment (CIfA, 2020a); desk-based assessment (CIfA, 2020b); and other relevant guidance.
- 8.2.4 This assessment contains sufficient information to meet the requirements for assessing potential impacts upon heritage receptors required by current planning policy set out in the National Planning Framework 4 (NPF4), Historic Environment Policy for Scotland (HEPS) and Planning Advice Note 2/2011 (PAN 2) and local planning policy.
- 8.2.5 The assessment has been carried out by Lynne Roy and Juan Chacon of AOC Archaeology Group. Lynne Roy is Project Manager at AOC Archaeology Group with over 19 years of experience working on EIAs for renewable energy developments across Britain. This experience includes the provision of expert witness services for planning appeals and public inquiries. Juan is a Project Officer at AOC Archaeology Group with over 7 years of experience in commercial archaeology. He has worked on a number of fieldwork projects and more recently as a consultant, producing Heritage Impact Assessments and archaeological desk-based assessments.

8.3 Legislation, Policy & Guidance

Legislation

- 8.3.1 Relevant legislation and guidance documents have been reviewed and taken into account as part of this assessment. Of particular relevance are:



- Ancient Monuments and Archaeological Areas Act (1979) as modified by the Historic Environment (Amendment) (Scotland) Act 2011;
- Historic Environment Scotland Act (2014);
- Planning (Listed Buildings and Conservation Areas) (Scotland) Act (1997) as modified by the Historic Environment (Amendment) (Scotland) Act 2011;
- Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended);
- Planning etc. (Scotland) Act 2006; and
- Procurement Reform (Scotland) Act 2014.

Planning Policy

8.3.2 The Planning Statement associated with this Section 36 application sets out the planning policy framework that is relevant to the EIA. This section considers the relevant aspects of National Planning Framework 4 (NPF4), Planning Advice Notes, the Angus Council Local Development Plan (LDP) and other relevant guidance. Of relevance to the assessment presented within this chapter, regard has been had to the following policies:

- The National Planning Framework 4 for Scotland (NPF4)
 - NPF4 Policy 7: Historic Assets and Places subsection a, c, d, h, i, & o;
- Historic Environment Policy for Scotland (Historic Environment Scotland (HES) 2019); and
- Angus Local Development Plan 2016 -2026 (Angus Council 2016)
 - Policy PV8 Built and Cultural Heritage

Guidance

8.3.3 The following best practice guidelines/guidance have been used in preparing this assessment:

- Historic Environment Policy for Scotland (HEPS) (HES, 2020) and its supporting Designation Policy and Selection Guidance (HES,2020).
- Managing Change in the Historic Environment: Setting (HES, 2020b).
- Our Place, our Future: The Strategy for Scotland's Historic Environment (HES, 2023).
- Scotland's Delivery of Public Benefit and Social Value Guidance for Archaeology in the Planning Process (Mann, 2023) adopted as best practice by the Association of Local Government Archaeologists Scotland (ALGAO Scotland).
- SNH (now NatureScot) & Historic Environment Scotland's Environmental Impact Assessment Handbook v5 (NatureScot & HES, 2018).
- Chartered Institute for Archaeologists (CIfA) Standard and guidance for historic environment desk-based assessment (CIfA, 2020c) and Standard and guidance for commissioning work or providing consultancy advice on the historic environment (CIfA, 2020b).



8.4 Consultation

- 8.4.1 The Proposed Development was subject to an EIA Scoping Report. **Table 8-1** summarises the responses from statutory and non-statutory consultation bodies in regard to cultural heritage and the Proposed Development and AOC's proposed approach to assessment.

Table 8-1: Consultation Responses

Consultee	Consultation Response	Applicant Action
HES 6th October 2024 Our case ID: 300075671	<p>HES agree in that St Orland's Stone (SM90270) and the Glams Castle Inventory Garden and Designed Landscape (GDL 00189) are most likely to be impacted by the Proposed Development.</p> <p>HES state that although it is unlikely that there would be views of the proposed solar array from the Category A-Listed Castle Glamis, there would still be impacts to the immediate setting of the GDL.</p> <p>HES also note that <i>"one of the development sites adjoins the north-east boundary of the GDL, which is characterised by marshland and woodlands (Berry Moss Wood, Haughs Strip; and Bents Wood behind). Sightlines of the solar array would be likely from the paths within the marsh and woodland spaces which currently allow views of open fields and farmland that contribute to the rural context of the GDL. It is also possible that there are direct views of St. Orland's Stone Cross from the clearing between the woodland along Haughs Strip and Berry Moss Wood that could be visually impacted by the solar array.</i></p> <p><i>Similarly, views looking towards the wooded north-east boundary of the GDL from St Orland's Stone and Haughs of Cossans may also be impacted.</i></p> <p>HES also note <i>'views of the open farmland/fields from the old tree-lined East Drive to the castle may also be impacted by the narrower, more easterly development site. This key avenue faces almost directly onto the proposed site.'</i></p> <p>HES conclude that (at the time of the consultation) there was very little information regarding the solar array and BESS design and that further details should be provided at application stage with</p>	<p>The Proposed Development has been designed taking into consideration HES comments, and this chapter pays special attention to the impacts upon St Orland's Stone and the GDL.</p> <p>Potential impacts on views between the St Orland's Stone and the GDL around Berry Moss Wood have been assessed as has the contribution that this part of the GDL makes its cultural significance and potential impacts of the proposed Development on that significance.</p> <p>Views looking towards the wooded north-east boundary of the GDL from St Orland's Stone and Haughs of Cossans have been assessed.</p> <p>Views along the former East Drive to the castle have been assessed. The Proposed Development has also been designed with buffer planting along the eastern edge.</p> <p>Wireframes and annotated photographs from the St Orland's Stone and Glamis Castle GDL have been used to</p>



Consultee	Consultation Response	Applicant Action
	viewpoints either as wireframes or photomontages, to highlight the likely level of impact to the setting of St Orland's Stone and the GDL. In addition, they advise that the design and position of the solar panels take into account these viewpoints and that a mitigation is put into place to reduce the potential impacts to the settings of these heritage assets.	inform the design and support the assessment.

8.5 Assessment Methods & Significance Criteria

Study Area

8.5.1 In order to assess the potential for effects on cultural heritage assets resulting from the Proposed Development, the following Study Areas have been identified:

- A core Study Area (the Site), which includes all land within the Site, which has been subject to assessment for potential direct effects. This Study Area was subject to detailed walkover survey and cultural heritage assets which may be directly impacted by the Proposed Development identified (**Figures 8.2-8.4**).
- A 1km Study Area for the identification of all known non-designated heritage assets and known previous archaeological interventions within 1km of the proposed solar array in order to help predict whether any similar hitherto unknown archaeological remains are likely to survive within the Site and thus be impacted by the Proposed Development (**Figure 8.4**).
- A 3km Study Area for the assessment of potential effects on the settings of all designated heritage assets including Scheduled Monuments, all Listed Buildings, Inventoried Gardens and Designed Landscapes and Battlefields, Conservation Areas, and assets deemed to be of National Significance in the SMR. This Study Area is covered by the Zone of Theoretic Visibility (ZTV) (**Figures 8.2-8.3 and 8.13**).

Desk Study

8.5.2 Data on known assets and events on the Site and in the Study Areas have been collated from the following sources:

- Historic Environment Scotland (HES)
For designated assets data
- Canmore and Pastmap, hosted by HES:
For NRHE and HER data
- National Map Library (National Library of Scotland, Causewayside, Edinburgh):
For online old Ordnance Survey maps (1st & 2nd Edition, small- and large-scale) and pre-Ordnance Survey historical maps.



- The Highland HER:
For HER data (received 19th September 2024)
- National Collection of Aerial Photography (NCAP):
For historical aerial photographs
- The and the Scottish Archaeological Research Framework (ScARF) (<https://scarf.scot/national/>)
For Archaeological research frameworks
- Scottish Remote Sensing Portal:
For LiDAR data
- The British Geological Survey (BGS) data
For information about the geological character of the Site

Site Visit

- 8.5.3 The following should be read alongside **Technical Appendix: 8.3: Cultural Heritage Plates**.
- 8.5.4 The Site Walkover was conducted on 8th October 2024 in overcast conditions. The purpose of the survey was to assess the existing land use, the potential for heritage constraints within the Site and to evaluate the anticipated impact of the Proposed Development.
- 8.5.5 The Site is situated c. 1.6 km to the west of Forfar and it comprises two land parcels within agricultural land located on either side of a local road (**Figure 8.14**). The existing land use is mainly agricultural, with small sections of woodland, and a local road connecting both Land Parcels. The Site is bordered by trees belonging to North Warren Plantation and Berry Moss Wood to the west, while the other boundaries are more open. The Site is situated to the north of Dean Water and to the south of St Orland's Stone (Asset 2) and a dismantled railway.
- 8.5.6 Most of the fields within the Site were observed to be under crop and none of the non-designated assets identified within Land Parcels 1 and 2 were visible at the time of the visit (Assets 185-190, 207, 209 and 210). The ground is uneven across the Site, and it is slightly undulating in Land Parcel 2.
- 8.5.7 Land Parcel 1 (**Technical Appendix 8.3; Plates 1-5**) is divided into two fields by the local road flanked by a strip of trees and vegetation following a northwest-southeast route, and it is crossed by telegraph poles with overhead electric cables. Category C Listed Haughs of Cossans Farmhouse (Asset 148) is visible from the eastern and western fields in Land Parcel 1 (**Technical Appendix 8.3; Plate 2**), and St Orland's Stone Scheduled Monument (Asset 2) can be glimpsed at a distance from Land Parcel 1 (**Technical Appendix 8.3; Plate 3**), especially from the northern portion of the Land Parcel.
- 8.5.8 Land linking Land Parcel 1 and 2 is located along an existing road (**Technical Appendix 8.3; Plate 6**). Ballindarg Burn crosses the Proposed Cable Route.



- 8.5.9 Land Parcel 2 (**Technical Appendix 8.3; Plates 7-12**) is flanked by the local road by the local road, and it is divided into two fields by a north-west aligned hedge with scattered trees (**Technical Appendix 8.3; Plate 7**). A wooded area is in the northwest corner of the western field of Land Parcel 2 (**Technical Appendix 8.3; Plate 8**). Electric pylons are visible in west and south facing view from the eastern field of Land Parcel 2 (**Technical Appendix 8.3; Plates 10-13**).

Assessment of Significance

- 8.5.10 The assessment distinguishes between the term ‘impact’ and ‘effect’. An impact is defined as a physical change to a heritage asset or its setting, whereas an effect refers to the significance of this impact. The first stage of the assessment involves establishing the importance of the heritage asset and assessing the sensitivity of the asset to change (impact). Using the proposed design for the Proposed Development, an assessment of the impact magnitude is made and a judgement regarding the level and significance of effect is arrived at.

Criteria for Assessing Sensitivity of Heritage Assets

- 8.5.11 The definition of cultural significance is readily accepted by heritage professionals both in the UK and internationally and was first fully outlined in the Burra Charter, which states in Article One that ‘cultural significance’ or ‘cultural heritage value’ means aesthetic, historic, scientific, social or spiritual value for past, present or future generations (ICOMOS 2013, Article 1.2). This definition has since been adopted by heritage organisations around the world, including HES. HEPS notes that to have cultural significance an asset must have a particular “*aesthetic, historic, scientific or social value for past, present and future generations*” (HES 2019a). Heritage assets also have value in the sense that they “*...create spaces for recreation, leisure, tourism, and education, or places for nature to thrive*” and “*can be a source of identity, a resource for learning, or a spark for creativity*” (HES 2023b, 10).
- 8.5.12 All heritage assets have significance; however, some heritage assets are judged to be more important than others. The level of that importance is, from a cultural resource management perspective, determined by establishing the asset’s capacity to contribute to our understanding or appreciation of the past (HES 2019b). In the case of many heritage assets their importance has already been established through the designation (i.e. Scheduling, Listing and Inventory) processes applied by HES.
- 8.5.13 The rating of importance of heritage assets is first and foremost made in reference to their designation. For non-designated assets importance is assigned based on professional judgement and guided by the criteria presented in **Table 8-2**, which itself relates to the criteria for designations as set out in Designation Policy and Selection Guidance (HES 2020) and Scotland’s Listed Buildings (HES 2020c).



Table 8-2: Criteria for Establishing Importance of Heritage Assets Importance Assets Importance Receptors

Relative Sensitivity	Criteria
Very High	World Heritage Sites (as protected by NPF4 (Scottish Government, 2023)); Other designated or non-designated heritage assets with demonstrable Outstanding Universal Value.
High	Scheduled Monuments (as protected by the Ancient Monuments and Archaeological Areas Act 1979 (the '1979 Act')); Category A Listed Buildings (as protected by the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997) (the '1997 Act'); Inventory Gardens and Designed Landscapes (as protected by the 1979 Act, as amended by the Historic Environment (Amendment) (Scotland) Act 2011 (the '2011 Act')); Inventory Battlefields (as protected by the 1979 Act, as amended by the 2011 Act); Outstanding examples of some period, style or type; Non-designated assets and/or Locally Listed assets considered to meet the criteria for the designations as set out above (as protected by NPF4, 2023).
Medium	Category B and C Listed Buildings (as protected by the 1997 Act); Conservation Areas (as protected by the 1997 Act); Major or representative examples of some period, style or type; or Non-designated assets and/or Locally Listed assets considered to meet the criteria for the designations as set out above (as protected by NPF4, 2023).
Low	Locally Listed assets; Examples of any period, style or type which contribute to our understanding of the historic environment at the local level.
Negligible	Relatively numerous types of features; Findspots of artefacts that have no definite archaeological remains known in their context; The above non-designated features are protected by Policy 7o of NPF4 (Scottish Ministers, 2023).

8.5.14 Determining cultural heritage significance can be made with reference to the intrinsic, contextual and associative characteristics of an asset as set out in HEPS (HES 2019a) and its accompanying Designation Policy and Selection Guidance (HES 2020a). The Designation Policy and Selection Guidance (2020a) indicates that the relationship of an asset to its setting or the landscape makes up part of its contextual characteristics. HES's Managing Change Guidance (HES, 2020b), in defining what factors need to be considered in assessing the impact of a change on the setting of a historic asset or place, states that the magnitude of the proposed change should be considered "relative to the sensitivity of the setting of an asset" (HES 2020b, 11), thereby making clear that assets vary in their sensitivity to changes in setting and thus have a relative sensitivity. The EIA Handbook suggests that cultural significance aligns with sensitivity but also states that "*the relationship between value and sensitivity should be clearly articulated in the assessment*" (HES and SNH 2018, 184). It is therefore recognised (ibid) that the importance of an asset is not the same as its sensitivity to changes to its setting. Elements of setting may make a positive, neutral or negative contribution to the significance of an asset.



Thus, in determining the nature and level of effects upon assets and their settings by the development, the contribution that setting makes to an asset's significance and thus its sensitivity to changes to setting need to be considered.

- 8.5.15 This approach recognises the importance of avoiding significant adverse impacts on the integrity of the setting of an asset in the context of the contribution that setting makes to the experience, understanding and appreciation of a given asset. It recognises that setting is a key characteristic in understanding and appreciating some, but by no means all, assets. Indeed, assets of High or Very High importance do not necessarily have high sensitivity to changes to their settings (e.g. do not necessarily have a high relative sensitivity). An asset's relative sensitivity to alterations to its setting refers to its capacity to retain its ability to contribute to an understanding and appreciation of the past in the face of changes to its setting. The ability of an asset's setting to contribute to an understanding, appreciation and experience of it and its significance also has a bearing on the sensitivity of that asset to changes to its setting. While heritage assets of High or Very High importance are likely to be sensitive to direct impacts, not all will have a similar sensitivity to impacts on their setting; this would be true where setting does not appreciably contribute to their significance. HES's guidance on setting makes clear that the level of effect may relate to "*the ability of the setting [of an asset] to absorb new development without eroding its key characteristics*" (2020, 11). Assets with Very High or High relative sensitivity to settings impacts may be vulnerable to any changes that affect their settings, and even slight changes may erode their key characteristics or the ability of their settings to contribute to the understanding, appreciation and experience of them. Assets whose relative sensitivity to changes to their setting is lower may be able to accommodate greater changes to their settings without having key characteristics eroded.
- 8.5.16 The criteria used for establishing an asset's relative sensitivity to changes to its setting is detailed in **Table 8-3**. This table has been developed based on AOC's professional judgement and experience in assessing setting effects. It has been developed with reference to the policy and guidance noted above including NPF4 (Scottish Government 2023), HEPS (HES 2019a) and its Designation Policy and Selection Guidance (HES 2020a), the Xi'an Declaration (ICOMOS 2005), the EIA Handbook (SNH & HES 2018) and HES's guidance on the setting of heritage assets (HES 2020).

Table 8-3: Criteria for Establishing Relative Sensitivity of a Heritage Asset to Changes to its Setting

Relative Sensitivity	Criteria
Very High	An asset, the setting of which is critical to an understanding, appreciation and experience of it, should be thought of as having Very High Sensitivity to changes to its setting. This is particularly relevant for assets whose settings, or elements thereof, make an essential direct contribution to their cultural significance.
High	An asset, the setting of which makes a major contribution to an understanding, appreciation and experience of it, should be thought of as having High Sensitivity to changes to its setting. This is particularly relevant



Relative Sensitivity	Criteria
	for assets whose settings, or elements thereof, contribute substantially to their cultural significance.
Medium	An asset, the setting of which makes a moderate contribution to an understanding, appreciation and experience of it, should be thought of as having Medium Sensitivity to changes to its setting. This could be an asset for which setting makes a contribution to significance but whereby its value is derived mainly from its other characteristics (see HES 2020a for discussion of intrinsic, contextual and associative characteristics which may contribute to overall cultural significance).
Low	An asset, the setting of which makes some contribution to an understanding, appreciation and experience of it, should generally be thought of as having Low Sensitivity to changes to its setting. This may be an asset whose value is predominantly derived from its other characteristics (see HES 2020a for discussion of intrinsic, contextual and associative characteristics which may contribute to overall cultural significance).
Negligible	An asset whose setting makes minimal contribution to an understanding, appreciation and experience of it should generally be thought of as having Negligible Sensitivity to changes to its setting.

8.5.17 The determination of a heritage asset's relative sensitivity to changes to its setting is first and foremost reliant upon the determination of its setting and the key characteristics of setting which contribute to its cultural significance and an understanding and appreciation of that cultural significance. This aligns with Stage 2 of the HES guidance on setting (2020b, 9). The criteria set out in **Table 8-2** are intended as a guide. Assessment of individual heritage assets is informed by knowledge of the asset itself; of the asset type if applicable and by site visits to establish the current setting of the assets. This allows for the use of professional judgement and each asset is assessed on an individual basis.

Criteria for Assessing Magnitude of Impact

8.5.18 Potential impacts, that is the physical change to known heritage assets, and unknown buried archaeological remains, or changes to their settings, in the case of the Proposed Development relate to the possibility of disturbing, removing or destroying in situ remains and artefacts during the construction phase or the placement of new features within their setting during the operational phase.

8.5.19 The EIA Handbook notes that "In the context of cultural heritage impact assessment, the receptors are the heritage assets and impacts will be considered in terms of the change in their cultural significance" (SNH & HES 2018, 181). Direct changes to assets during the construction phase will relate to the physical removal or damage (in part or whole) to a heritage asset and will therefore likely be adverse. However, the EIA Handbook states that "When considering setting impacts, visual change should not be equated directly with adverse impact. Rather the impact should be assessed with reference to the degree that the proposal affects those aspects of setting that contribute to the asset's cultural significance" (ibid). It further indicates that magnitude of impact should largely be regarded in the context of impacts to "elements of the fabric or setting of the heritage asset that contribute to its cultural significance" (ibid, 184). It is further of note that the EIA handbook states



that ‘Change in the setting of an asset may be entirely neutral in terms of the resultant change in the asset’s cultural significance, but this will rarely be the case where the actual fabric is affected’ (ibid).

- 8.5.20 On this basis, the magnitude of the impacts upon heritage assets caused by the Proposed Development is rated using the classifications and criteria outlined in **Table 8-4**. These criteria consider the extent of change which could be anticipated as a result of the Proposed Development in the context of the significance of the asset, including any contribution made by setting.

Table 8-4: Criteria for Classifying Magnitude of Impact

Relative Sensitivity	Criteria
Very High	Substantial loss of information content resulting from total or large-scale removal of deposits from an asset to the extent that it would result in a substantial loss of cultural significance; Major alteration of an asset’s baseline setting, which materially compromises the ability to understand, appreciate and experience the contribution that setting makes to the significance of the asset and erodes the key characteristics (HES 2020) of the setting to the extent that it would result in substantial loss of cultural significance.
High	Loss of information content resulting from material alteration of the baseline conditions by removal of part of an asset that would lead to some loss of cultural significance; Alteration of an asset’s baseline setting that affects the ability to understand, appreciate and experience the contribution that setting makes to the significance of the asset to a degree but whereby the cultural significance of the monument in its current setting remains legible. The key characteristics of the setting (HES 2020) may be partially eroded; there would, however, be some loss of cultural significance.
Medium	Detectable impacts leading to minor alteration to baseline conditions by removal of a small proportion of the asset, that would lead to slight loss of cultural significance; Alterations to the asset’s baseline setting, which do not affect the ability to understand, appreciate and experience the contribution that setting makes to the asset’s overall significance and would only lead to slight loss of cultural significance. Key characteristics would not be eroded.
Low	Loss of a small percentage of the area of an asset’s peripheral deposits/fabric that would leave cultural significance unchanged; A reversible alteration to the fabric of the asset; A marginal alteration to the asset’s baseline setting that would leave cultural significance of the asset unchanged.
Negligible	No impact predicted

- 8.5.21 In line with HES guidance on setting (2020b) factors which will be considered in coming to a judgement regarding magnitude of impact will include, but not be limited to:

- “whether key views to or from the historic asset or place are interrupted;
- whether the proposed change would dominate or detract in a way that affects our ability to understand and appreciate the historic asset;



- the visual impact of the proposed change relative to the scale of the historic asset or place and its setting;
- the visual impact of the proposed change relative to the current place of the historic asset in the landscape;
- the presence, extent, character and scale of the existing built environment within the surroundings of the historic asset or place and how the Proposed Development compares to this;
- the magnitude of the proposed change relative to the sensitivity of the setting of an asset;
- sometimes relatively small changes, or a series of small changes, can have a major impact on our ability to appreciate and understand a historic asset or place. Points to consider include:
 - the ability of the setting to absorb new development without eroding its key characteristics;
 - the effect of the proposed change on qualities of the existing setting such as sense of remoteness, current noise levels, evocation of the historical past, sense of place, cultural identity, associated spiritual responses; and
 - cumulative impacts: individual developments may not cause significant impacts on their own, but may do so when they are combined” (ibid; 10-11).

Criteria for Assessing Significance

- 8.5.22 The level of effect is judged to be the interaction of the asset’s importance or relative sensitivity (**Table 8-2** and **Table 8-3**) and the magnitude of the impact (**Table 8-4**). In order to provide a level of consistency, the assessment of importance and relative sensitivity, the prediction of magnitude of impact and the assessment of level of effect will be guided by pre-defined criteria.
- 8.5.23 The predicted level of effect on each heritage asset is then determined by considering the asset’s importance and/or relative sensitivity in conjunction with the predicted magnitude of the impact. The method of deriving the significance of effect is provided in Table 9.5.

Table 8-5: Significance of Effect based on Inter-Relationship between the Importance and/or Sensitivity of a Heritage Asset and/or its Setting and the Magnitude of Impact

Magnitude of Impact	Importance and/or Relative Sensitivity to Changes to Setting				
	Negligible	Low	Medium	High	Very High
High	Minor	Moderate	Moderate	Major	Major
Medium	Negligible/ Neutral	Minor	Moderate	Moderate	Major
Low	Negligible/ Neutral	Negligible/ Neutral	Minor	Minor	Moderate



Magnitude of Impact	Importance and/or Relative Sensitivity to Changes to Setting				
	Negligible	Low	Medium	High	Very High
Negligible	Negligible/ Neutral	Negligible/ Neutral	Negligible/ Neutral	Minor	Minor

- 8.5.24 Whilst the tables are used to ensure a consistent approach, it is noted that the EIA Handbook states that where matrices “are used, care must be taken to ensure that they are not applied in a mechanistic fashion or in a way that obscures the reasoning behind the assessment” (SNH & HES 2018, 185). The EIA Handbook further states that “Generally, a narrative approach will allow the assessor to set out their reasoning more clearly than a tabulated approach” (ibid, 184). As such a qualitative descriptive narrative is provided for each asset to summarise and explain each of the professional value judgements that have been made in establishing sensitivity and magnitude of impact for each individual asset.
- 8.5.25 Where a neutral level of effect is indicated in the table above this primarily relates to potential setting effects where the Proposed Development would be perceptible and thus result in a change to the baseline setting, but whereby the Proposed Development would not result in an adverse effect on the setting of the asset. This is in line with page 181 of the EIA Handbook (SNH & HES 2018), quoted above, which indicates that visual changes should not necessarily be considered to have an adverse impact upon setting.
- 8.5.26 Using professional judgment and with reference to the Guidelines for Environmental Impact Assessment (as updated) (IEMA 2017), and the EIA Handbook (SNH & HES 2018) the assessment considers moderate and greater effects to be significant (bold in **Table 8-5**), while minor and lesser effects are considered not significant.

Integrity of Setting

- 8.5.27 NPF4 indicates that development proposals affecting Scheduled Monuments will only be supported where ‘significant adverse impacts on the integrity of setting of a scheduled monument are avoided’ (Scottish Government 2023, Policy 7h(ii), 46). Significant adverse impacts on integrity of setting are judged here to relate to whether a change would adversely affect the asset’s key attributes or elements of setting which contribute to an asset’s significance. It is considered that a significant impact upon the integrity of the setting of an asset will only occur where the degree of change that will be represented by the Proposed Development would adversely alter those factors of the monument’s setting that contribute to cultural significance such that the understanding, appreciation and experience of an asset are not adequately retained. In terms of effects upon the setting of heritage assets, it is considered that only those effects identified as ‘significant’ in EIA terms will have the potential to significantly adversely impact upon integrity of setting. Where no EIA significant effect is found it is considered that there would be no significant impact upon the integrity of an asset’s setting. This is because for many assets, setting may make a limited contribution to their significance and as such changes would not significantly impact the integrity of their settings. Additionally, as set out



in Table 9.4, lower ratings of magnitude of change relate to changes that would not obscure or erode key characteristics of setting.

- 8.5.28 Where EIA significant effects are found, a detailed assessment of adverse impacts upon integrity of setting is made. Whilst non-significant effects are unlikely to significantly impact integrity of setting, the reverse is not always true. That is, the assessment of an effect as being ‘significant’ in EIA terms does not necessarily mean that the adverse effect to the asset’s setting will significantly impact its integrity. The assessment of adverse impact upon the integrity of an asset’s setting, where required, is a qualitative one, and largely depends upon whether the impact predicted would result in a major impediment to the ability to understand or appreciate the heritage asset.

Requirements for Mitigation

- 8.5.29 National and local planning policies and planning guidance outlined in **paragraphs 8.3.1 to 8.3.3** of this chapter require a mitigation response that is designed to take cognisance of the possible impacts upon heritage assets by a proposed development and avoid, minimise, or offset any such impacts as appropriate. The planning policies and guidance express a general presumption in favour of preserving heritage remains in situ [wherever possible]. Their ‘*preservation by record*’ (i.e. through excavation and recording, followed by analysis and publication by qualified archaeologists) is a less desirable alternative NPF4 notes that the policy intent is for the protection and enhancement of historic environment assets (Scottish Government 2023, 45). Policies related to designated assets (Policies 7a to 7j and 7l) prefer avoidance of impact and where this is not possible require that any impacts are minimised. Policy 7o, relating to non-designated assets, states that these assets and their settings ‘*should be protected and preserved in situ wherever feasible [. . .] Where impacts cannot be avoided they should be minimised. Where it has been demonstrated that avoidance or retention is not possible, excavation, recording, analysis, archiving, publication and activities to provide public benefit may be required through the use of conditions or legal/planning obligations*’ (ibid, 46-47).

Assessment of Residual Effect Significance

- 8.5.30 The residual effect is what remains following the application of mitigation and management measures. The level of residual effect is defined using criteria outlined in **Table 8-2 to Table 8-5**. No direct mitigation is possible for setting effects (beyond embedded mitigation by design) and therefore residual operational phase effects on the setting of heritage assets would be the same as potential (pre-mitigation) effects.

Cumulative Assessment

- 8.5.31 It is necessary to consider the effects arising from the addition of the Proposed Development to other cumulative developments. Consideration has been given to whether this would result in an additional cumulative change upon heritage assets, beyond the levels predicted for the Proposed Development alone.



- 8.5.32 The cumulative assessment has regard to the guidance on cumulative effects upon heritage assets as set out in Environmental Impact Assessment Handbook V5 (HES & SNH, 2018) and utilises the criteria used in determining effects from the Proposed Development as outlined in **Table 8-3** to **Table 8-5** above. The assessment of cumulative effects considers whether there would be an increased impact, either additive or synergistic, upon the setting of heritage assets as a result of adding the Proposed Development to a baseline, which may include operational, under construction, consented or proposed developments. It is necessary to consider whether the effects of other schemes in conjunction with the Proposed Development will result in an additional cumulative change upon heritage assets, beyond the levels predicted for the Proposed Development alone.
- 8.5.33 In determining the degree to which a cumulative effect may occur as a result of the addition of the Proposed Development into the cumulative baseline, a number of factors are taken into consideration including:
- the distance between cumulative developments;
 - the interrelationship between their ZTVs (i.e. theoretical visibility);
 - the overall character of the asset and its sensitivity;
 - the siting, scale and design of the cumulative developments themselves;
 - the way in which the asset is experienced;
 - the placing of the cumulative development(s) in relation to both the Proposed Development being assessed and the heritage asset under consideration; and
 - the contribution of the cumulative baseline schemes to the significance of the effect, excluding the individual proposal being assessed, upon the setting of the heritage asset under consideration.
- 8.5.34 The cumulative assessment is based upon a list of operational, under construction or consented developments.. There are two consented solar development and two other proposed solar farms with potential intervisibility of assets within the study area, namely the consented Suttieside Solar Farm and the consented Craignathro Solar Farm. While all have been considered, only those which contribute to, or have the possibility to contribute to, cumulative effects on specific heritage assets are discussed in detail in the text. Additionally, given the emphasis NatureScot places on significant effects, and the requirements of the EIA Regulations, cumulative effects have been considered in detail for those assets where the Proposed Development has been judged to have an impact on their setting. Where No Impact has been predicted for the Proposed Development, there will be no cumulative effect.

Limitations to Assessment

- 8.5.35 This assessment is based upon data obtained from publicly accessible archives as described in the Data Sources (**Section 8.5.2**) as well as a walkover survey and site visits to assets subject to setting assessment in October 2024. Data from the National Record for the Historic Environment (NRHE) was downloaded in September 2024 and an extract from the Angus Historic Environment Record (HER) was obtained on the 19th of September 2024. The information presented in the



gazetteer in **Technical Appendix 8.1** regarding known heritage assets is current to these dates.

- 8.5.36 The scope of the baseline data gathering, including Study Areas and sources, was agreed with Consultees through pre-application consultation and the assessment adheres to relevant policy and guidance for undertaking assessment of archaeological and cultural effects. The identification of the historic environment baseline provides an appropriate level of interrogation of known heritage assets and allows for a robust assessment of potential impacts.

8.6 Baseline

Current Baseline

Prehistoric (500,000 BC-AD 43) and Roman (AD 43-410) Evidence

- 8.6.1 While no prehistoric heritage assets have previously been recorded on the Site, ten Scheduled Monuments (Assets 3-4 and 6-13) are recorded by HES within 3km of the Site. In addition, a number of prehistoric findspots are recorded by the HER within 1km of the Site.
- 8.6.2 Prehistoric activity recorded by HES between 1km and 3km of the Site mainly reflects remains of enclosed settlements (Assets 3-4 and 6-11) represented by cropmarks on arable farmland visible on aerial photography. The closest known prehistoric settlement to the Site is the circular enclosed settlement (Asset 3) located within Glamis Castle GDL (Asset 16) c. 1.15km to the southwest of the Site. A dark cropmark and further linear cropmarks within the enclosure suggest the survival of internal divisions and the traces of former internal buildings.
- 8.6.3 A further two prehistoric Scheduled Monuments within the Study Area are exemplified by Queen Margaret's Inch (Asset 12), which comprises a crannog of prehistoric date in Loch Forfar that later formed the site of a medieval chapel, a possible former crannog is also recorded as a low mound to the west of the loch. Two standing stones, possibly forming the remains of a stone circle survive in the gardens of cottages at Fletcherfield (Asset 13).
- 8.6.4 The HER records several cists with 'urns' of Early Bronze Age dated c. 240m to the northwest of the Site; prehistoric tools (Asset 176) in the form of stone axes and flint arrowheads discovered over 800m to the southeast of the Site; and a possible souterrain (Asset 182) c. 900m to the west of the Site.
- 8.6.5 The paucity of remains in the proximity of the Site may be due to the lack of development in the area. Furthermore, given that the wider Study Area was the focus of prehistoric settlement, it is assessed a Low to Medium potential for finds and remains from this period to survive on the Site.
- 8.6.6 No Roman heritage assets have previously been recorded on the Site and within its wider Study Area. Therefore, it is assessed that there is a Low potential for Roman remains to survive on the Site.



Early Medieval (c. 400-C.1000) Evidence

- 8.6.7 Although no remains and artefacts from the early medieval period have been previously recorded within the Site, this assessment has identified three Pictish Scheduled Monuments (Assets 2 and 14-15) within 3km of the Site, including St Orland's Stone Scheduled Monument (Asset 2) located c. 200m to the north of Site. The Pictish symbol stones of early medieval Scotland offer testimony to the artistic skills of their creators and insights into Pictish life and artistic contacts (Fraser 2008, 1). Moreover, the HER records non-designated burials associated with St Orland's Stone which have the potential to offer insight into the burial traditions of early medieval Scotland and indicate that Pictish symbol stones were an important part of both life and death in the period.
- 8.6.8 St Orland's Stone (Asset 2), also known as Cossans stone, comprises a Class II Pictish upright cross slab of old red sandstone dating to the second half on the first millennium AD, probably c. the 8th or 9th century (HES 2019b, 2). Standing 2.36m tall, it is set within an enclosing fence, and it is a Property in the Care (PiC) of the Secretary of State for Scotland. The high relief of the carving of the cross appears to simulate a freestanding cross. The back face displays zoomorphic borders, Pictish symbols, a beast, a possible cow, a boat with figures, men on horseback, hounds and a recess where a fragment appears to have been removed. The Pictish symbol stones, cross-slabs and crosses of early medieval Scotland offer testimony to the history and artistic skills of the Picts, which word derives from the Latin word *picti* and refers to "the painted ones" (HES 2019b, 2). The hunting scene and the Christian cross depict the mix of Pictish and Christian symbols, reflecting perhaps complex messages at a time of conversion as well demonstrating that the Picts were not an isolated culture (HES 2019b, 3 and 5-6). The stone represents the only known example of a Pictish carved stone depicting a boat. The Scheduled Monument has likely been associated with the small mound it currently stands upon since it was erected.
- 8.6.9 By the late 18th century, the stone had become known as St Orland's Stone and in the early 19th century the stone was split into two across the recess. An excavation carried out in the vicinity of the stone in 1855 (Event 204) uncovered five burial cists containing human bone (Asset 203). At around the turn of the 20th century Allen and Anderson removed a railing from around the cross-slab and excavated the earth from the base of the stone in order to photograph it (HES 2019b, 5). In the second half of the 20th century, an enclosure was created around the monument and its creation may have disturbed hitherto unknown archaeological remains although no record of any discoveries is known. An excavation carried out in 2008 (Event 204) determined that the base of the stone came to a point, which led to the stone being re-set on concrete to stabilise it. A geophysical survey (Event 204) undertaken in 2009 recorded a number of anomalies (Asset 194) including possible sub-circular enclosures and possible small barrows to the west of the cross slab and features which may indicate the presence of burials and trenches associated with the 19th century excavation discussed above.
- 8.6.10 Two further Pictish cross slabs are recorded by HES c. 2.7km to the southwest of the Site, one (Asset 14) within Glamis Conservation Area (Asset 14), and the other



(Asset 15) to the east of the Conservation Area. Both carved stones probably date to between 700 and 1000 AD. Asset 14 stands in the garden of 10 Kirkwynd, formerly Glamis Manse and comprises a large upright slab of red sandstone, approximately rectangular in shape but tapering upwards with a pediment at the top. It is decorated with interlace, with the interlace on the cross arms and immediately above the roundel formed from long animals. There is a pair of beast heads above the cross on the pediment, and elsewhere the cross is flanked by a lion-like animal, a centaur carrying axes in each hand, a cauldron with protruding human legs, a pair of bearded figures with axes, and a deer head symbol with triple disc beneath. Pictish symbols carved on the stone include serpent, a fish, and an incomplete 'mirror' symbol. Asset 15 stands within woodland to the southeast of the village of Glamis, on the northern flank of Hunters Hill, and it comprises a large rectangular stone slab, measuring about 1.5m high, 0.72m across and 0.14m thick, sculptured partly with incised lines and partly in relief. The stone depicts an interlace-decorated cross and animal and mythological scenes including an animal-headed man with an axe, deer, lion-like animals, a triple disc symbol and a "flower" symbol.

- 8.6.11 The proximity of St Orland's Stone and its associated buried remains to the Site, suggest that the area was focus of Pictish settlement. As such, there is judged to be a Medium to High potential for Pictish finds and remains to survive on the Site.

Medieval Evidence (c. 1000-1500)

- 8.6.12 Although no medieval finds or remains have previously been recorded within the Site, HES record two Scheduled Monuments (Asset 5 and 12), two Category A Listed Buildings (Assets 17-18) and two Category B Listed Buildings (Assets 52-53) of medieval origin within 3km of the Site. The HER records five non-designated assets (Assets 159, 202, 178 and 180-181) within 1km of the Site.
- 8.6.13 The Site is located within the historic parish of Glammiss (Glamis). Streams running through Glamis include Dean Water, Kerbet Water and Glamis Burn. Glamis is believed to derive from the word "glam" (noise or sound) and the affix "iss" (obstruction), and it refers to the murmuring sound caused by the waterfall of the Burn, in a deep and Rocky gorge above the village (NSA 1845, 337). The parish is bounded to the east by Forfar and the centre of the parish is divided by the Dean Water.
- 8.6.14 Three of the Listed Buildings (Assets 18 and 52-53) are located within the 17th century Glamis Castle GDL (Asset 16). They comprise the Category A Listed Glamis Castle (Asset 18) and its associated Category B Listed east (Asset 52) and west (Asset 53) towers. The castle is located c 1.5km to the southwest of the Site and it comprises a 15th century tower house remodelled in the 17th century with two associated towers, possibly dating to the 14th or 15th centuries. There are no records of the castle prior to the 11th century, when it is first noted in connection to the death of Malcom II (NSA 1845, 344). The castle was granted by Robert II to the Lyon family in 1372 (OSA 1792, 127). Along with Glamis Castle there were at one time three other castles within the parish, although they are demolished today (NSA 1845, 345). One was Cossans Castle (Asset 159) c. 240m to the northwest of the



- Site, the remains of which were removed in the 19th century. Cossans Castle is said to have been surrounded by a ditch and the former site of the castle is currently marked by an elevated mound (Canmore 2024).
- 8.6.15 A medieval chapel (Asset 12) surviving as a promontory is recorded at St Margaret's Inch c. 2.3km to the east of the Site. The monument appears to have originated as a crannog, or artificial islet-dwelling, of the prehistoric period. Historical sources refer to the 13th century foundation of a chapel of the Holy Trinity on the islet. Evidence of medieval occupation material, as well as earlier finds, has come from excavations both in the 19th century and more recently in advance of the construction of the modern buildings (Event 205) (HES 1998B; SUAT 1995). A low stone bank, traceable around the west and south of the promontory, may relate to either period of use, as may a series of low banks across the neck of the promontory.
- 8.6.16 The homestead moat 350m west of Kirkton Scheduled Monument (Asset 5), which is recorded c. 2.9km to the south of the Site, comprises the remains of a homestead moat of medieval date surviving as a series of earthworks in an arable field. The homestead moat appears to represent the early settlement of Brighton mentioned in 13th century records (HES 1994). The monument is defined by a broad ditch which has largely silted up and is now approximately 1m deep.
- 8.6.17 The Category A Listed Strathmore Aisle (Asset 17) is located 2.5km to the southwest of the Site within Glamis Conservation Area (Asset 1). This Listed Building is probably the transept of a demolished cruciform-plan pre-reformation church dating to 15th century with later alterations.
- 8.6.18 Medieval activity recorded by the HER within 1km of the Site reflects an agrarian landscape which continued into the post-medieval period exemplified by four areas of rig and furrow (180-181). Further medieval activity in the area includes a possible site of a chapel (Asset 202) c. 460m to the north of the Site, and medieval pottery (Asset 178).
- 8.6.19 The paucity of medieval artefacts and remains within the wider Study Area is likely due to the lack of development in the Area. The location of Cossans Castle (Asset 159) c. 200m to the north of the Site and Glamis Castle (Asset 18) c. 1.5km to the southwest of the Site suggest that the wider landscape was the focus of medieval settlement although the Site itself is likely to have been in the agricultural hinterlands of Glamis and Cossans. Therefore, while there is judged to be a Medium to High potential for medieval remains to survive on the Site any such remains are likely to be of an agricultural nature.

Post-Medieval Evidence (AD 1540-1900)

- 8.6.20 A 19th century OS map (Figure 9.8) depicts a series of pits or ponds (Assets 185-189) and buildings associated with Glamis Tile Works (Asset 172) as well as a building with ancillary structures and associated enclosed ground (Asset 190) likely dating to the post-medieval period within the Site. Historic Environment Scotland record Glamis Castle GDL (Asset 16), encompassing 28 Listed Buildings (Assets



- 19, 20, 24m 49-51, 54-56, 58-61, 79, 80, 82, 83, 92, 107, 121, and 127-134), Glamis Village Conservation Area (Asset 1), encompassing 47 Listed Buildings (Assets 23, 25-38, 67, 68, 70, 71, 85-90), and a further 61 Listed Buildings (Assets 16, 21, 22, 39-48, 57, 62-66, 69, 72-78, 84, 93, 100-103, 108-120, 122-126 and 148-157) within 3km of the Site. In addition, the Angus HER records a range of non-designated heritage assets (Assets 161, 165-175, 180, 181, 183-185, 191-103, 195-197 and 199-202) within 1km of the Site.
- 8.6.21 One of the earliest maps to depict Forfar is Gordon's map of Angus of c. 1636-53 (not illustrated), although it lacks detail. Blaeu's map of 1662-65 (**Figure 8.5**) shows Forfar as a large settlement to the south Loch of Forfar, which gives birth to a water course called the Great Drain, although it is currently known as Dean Water. This map depicts the Site as an area located to the west of Loch of Forfar, to the north of the Great Drain, and to the southeast of Glamis Castle.
- 8.6.22 Glamis Castle Inventory Garden and Designed Landscape (GDL) (Asset 16) is located immediately to the west of the Site, dates from the late 17th century and has historic associations with William Shakespeare's Macbeth who is identified in the play as 'the Thane of Glamis' (ES 2024b). Designated heritage assets within the GDL dating to the 17th century include Category A Listed sundial (Asset 19) and dovecot (Asset 20) and the Category B Listed Kirk Gate (Asset 24), Charles I Statue (Asset 55), James VI Statue (Asset 54), main gate (Asset 49), Earl John Bridge (Asset 56) and north lodge (Asset 50).
- 8.6.23 Further designated heritage assets from the 17th century within the wider Study Area are exemplified by Category B Listed Logie House (Asset 72), 95 Glamis Road (Asset 66) and Brighton East Gates (Asset 66) as well as Category B Listed Auld Mill and Joiner's Workshop (Asset 71) and Category C Listed Old Market Cross (Asset 106), both within Glamis Conservation Area (Asset 1).
- 8.6.24 By 1746, when Thomas Winter drew his plan of the Mains of Glamis as presently laid out, Glamis Castle Designed Landscape (Asset 16) extended from north of the Dean Water to the north of the Castle to Crams Hill, Hunters Hill and Lera Park in the south (HES 1987). These hills were planted up with woodlands with a formal design of radiating avenues within. The straight approach road was designed lined with a broad avenue which extended from the south woodlands north to the Castle. The parks around the Castle were enclosed in a diamond pattern, and a shrubbery area with serpentine walks lay to the south-east of the Castle. This layout is visible on Roy's map of 1747-55 (**Figure 8.6**). A number of Late 18th century carved stone ornament (Assets 129-132) are recorded detached from the formal Castle gardens.
- 8.6.25 Roy's map (**Figure 8.6**) shows that by the mid-18th century the Site was located within unimproved land to the north of the Main Drain, to the southeast of "C. Causins" (later Cossins and Cossans) (Asset 206), and to northeast of Glamis Castle. Roy's map depicts the wider landscape as agricultural land with a few farmsteads and associated buildings. The boggy/saturated nature of the ground north of the Site is depicted as a slightly blue shaded area. Listed Buildings from the 18th century within 3km Study Area mainly represent farmhouses (Assets 42, 58-61, 157) and cottages (Asset 100-102, 111-112, 119, and 122-124) as well as



- residential (Assets 26, 30-35, 36, 37, 67, 68, 87 88, 90, 91 96, 99, 108, 113-118, 143-145 and 154-156) and commercial buildings (Assets 28, 29, 38, 70, 86, 91 and 140) within Glamis Conservation Area (Asset 1). Other 18th century Listed Buildings within 3km of the Site include St Ninian's Chapel burial ground (Asset 48), inns (Asset 110-111), bridges (Assets 57 and 62), a mausoleum (Asset 39), a walled garden (Asset 44), a garden ornament (Asset 45) a schoolhouse (Asset 103), a dovecot (Asset 64), a sundial (Asset 65) and the Parish Church of St Fergus (Assets 23 and 85) in Glamis Conservation Area (Asset 1).
- 8.6.26 In 1792, historic accounts record the Parish of Glamis to be divided among four heritors, the Earl of Strathmore, Lord Douglas, William Douglas of Brigtown, and Mr Henderfon of Rochilhill (OSA 1792, 128). These accounts also document an abundance of quarries belonging to the Earl of Strathmore Lord Douglas (OSA 1792, 127). The New Statistical Account (NSA) describes an agricultural landscape with one-half of the arable lands in grass occupied mainly by cattle, principally the native Angus (NSA 1845, 347).
- 8.6.27 Thomson's map of 1825 (**Figure 8.7**) labels the "Great Drain" and depicts the Site as open agricultural land to the north of the Great Drain (previously known as Main Drain). "Cossins" (Cossans) (Asset 206) and "Haughs" farmsteads are depicted on Thomson's map and are likely associated with Haughs of Cossans (Asset 148), which is discussed below. This map shows two buildings suggesting the presence of another dwelling or outbuilding rather than a single farmhouse (Asset 148). It is possible that the second building relates to a building (Asset 190) located within the Site and depicted in the 1860 map (**Figure 8.8**). Thomson's map is somewhat stylistic in nature and thus the location of 'Cossins' and 'Haughs' in relation to one another and the Great Drain should be taken as indicative. Ballindarg Burn is also depicted on this map.
- 8.6.28 The Ordnance Survey (OS) map of 1861 (**Figure 8.8**) depicts Land Parcel 1 within seven enclosed fields within one of which is a long rectangular building (or row of buildings) with ancillary structures set north of an area of enclosed ground (likely a garden plot or allotments) (Asset 190) and roads. This map depicts the buildings and structures associated with Glamis Tile Works (Asset 172) to extend into the eastern portion of the south boundary of Land Parcel 1. Land Parcel 2 is shown within four enclosed agricultural fields featuring a pond (Asset 185), four further possible ponds or pits (Assets 186-189) and woodland. The location proposed for the cable route is shown to follow a road, and it is crossed from north to south by Ballindarg Burn. Land Parcel 1 is flanked to the south by the Category C Listed Haughs of Cossins (Asset 148), a late 19th century farmstead built adjacent to the site of the former Haughs of Cossans (demolished circa 1980) which contained carved panels probably from the demolished Castle of Cossans (Asset 159) (HES 1998c; NSA 1845, 345). The 1861 map depicts Haughs of Cossins as a U-plan steading, with the opening to the south, a horse mill on the external north elevation, a covered western section of the courtyard and a small rectangular farmhouse to the south of the steading. It is likely that "Cossins" farmstead, which comprised two buildings depicted on the 1861 map (**Figure 8.8**) where a predecessor of Haughs of Cossans (Asset 148). The western portion of the south boundary of Land Parcel 1 was bound by Berry Moss Wood. Land Parcel 2 was bound to the south Blackhill



- Wood. This map shows the wider landscape as agricultural, and it labels the St Orland's standing stone Scheduled Monument (Asset 2) to the north of the Site.
- 8.6.29 An advert in the Dundee Perth and Cupar Advertiser dated 1857 notes that '*Drain tiles are for sale at Glammiss Tileworks at Haughs of Cossins. Apply to Robert Spence at the works*'. Two years later in 1859 another advert notes that the tileworks at Glammiss is '*to be let on lease with immediate entry*'. Noting that applications are to be made to Mr Proctor, Glammiss. Subsequent advertisements throughout the late 19th century indicate that the tile works focused on the production of drainage tiles and bricks (Scotland's Brick and Tile Manufacturing Industry, n.d)
- 8.6.30 Listed Buildings associated with the 19th century phase of Glamis Castle GDL (Asset 16) include walled gardens (Assets 79 and 83), a garden house (Asset 80), a ha-ha (Asset 133), an icehouse (Asset 107), the Parsonage (Asset 134), bridges (Assets 51, 121 and 127), and a game larder (Asset 128).
- 8.6.31 Glamis Conservation Area (Asset 16) was further developed in the 19th century as exemplified by 17 Listed Buildings originating in this period (Assets 25, 27, 89, 94, 95, 97, 98, 104, 105, 135, 137-139, 141, 142, 146 and 147), which reflect a variety of purposes including residential, commercial, educational and religious.
- 8.6.32 Further Listed Buildings of 19th century date recorded within the wider Study Area are mainly cottages (Asset 75-78, and 148-153) and farmhouses (Assets 20, 21, 63, 69, 120, 126).
- 8.6.33 Post-medieval non-designated assets recorded by the HER within 1km reflect an agrarian landscape exemplified by the village of Leys of Cossans (Asset 183) farmsteads, farmhouses and cottages (Assets 161, 165-171, 184, 193, 195, 196, 197, 199, 201), a field boundary (Assets 174-175), and rig and furrow (Assets 173, 180-181 and 208). An area of rig and furrow (Asset 208) is identified as cropmarks on aerial photography (BGY58) to the west of Land Parcel 1. Aerial photographs of 1964 (OS/64/78/46-47) and LiDAR imagery (**Figures 8.11-12**) suggest that this area of rig and furrow (Asset 210) extends into Land Parcel 1. Another area of rig and furrow (Asset 173) recorded as cropmarks on oblique aerial photography from 1967 (OS/67/293) to the south of the Site is visible on modern satellite imagery (**Figure 8.13**) and appears to extend into the southeast edge of Land Parcel 2. However, historic OS maps (Figures 9.8-10) and photography from 1946 (106G/Scot/UK/0128) show this area as 'Blackhill Wood' and the rig and furrow may thus be related to woodland use and its subsequent removal rather than historic ploughing activity. Remains of the railway station recorded over 800m to the north of the Site reflects the influence of the Industrial Revolution in the agricultural landscape.
- 8.6.34 Historic maps and archaeological evidence have identified the Study Area as a post-medieval agrarian landscape as well as establishing the historic links of the Site with Haughs and Cossans farmstead (Asset 148), which included a demolished building and enclosed garden or allotment (Asset 190) in the northwest portion of Land Parcel 2. Also, buildings associated with Glamis Tile Works were located in



the southeastern portion of Land Parcel since at least 1861. Therefore, there is a High potential for post-medieval remains to survive on the Site. Such remains are likely to be associated with farm buildings, historic ploughing and industrial tile production.

Modern Evidence (AD 1900-present day)

- 8.6.35 Although no modern artefacts or remains have previously been recorded within the Site, historic maps depict a probable clay pit (Asset 207) in Land Parcel 1. Historic Environment Scotland records a Category B Listed Italian Garden (Asset 81) within Glamis Castle GDL (Asset 16), and a Category C Listed war memorial is recorded c 2.9km to the southwest of the Site.
- 8.6.36 The OS map of 1900 (Figure 9.9) depicts no major changes within the Site and the wider landscape. The long rectangular building (Asset 190) in Land Parcel 1 is labelled on this edition as Sodha' and is shown to be split into four indicating that it may have comprised a row of small cottages. The associated enclosed gardens are not shown on this edition indicating that they had been removed by this time. Two clay pits associated (Asset 191-192) with Glamis Tile and Brick Works (Asset 172) are shown to have been excavated to the south of the Site. Also, a small section of the northern and eastern portions of Land Parcel 1 seems to have been quarried (Asset 207) by 1900, although not labelled as such the location of a quarry in proximity to the Glamis Tile and Brick Works (Asset 172) indicates that it may have been used to extract clay for the works. By 1900 Haughs of Cossans farmstead (Asset 148) had a large farmhouse to the west of the steading set in gardens, the steading has extensions to the east forming another U-plan with courtyard, two pumps had been erected, one to the north and one to the southeast of the farmhouse. An article in the Dundee Courier dated 1900 records a visit of a group of local farmers to Mr James Guild, the tenant of Haughs of Cossans, Glamis to witness '*the starting of a new and improved threshing mill which has just been fitted up at his farm*'. The article notes that Mr Guild was responsible for the management of the agricultural land at Cossans as well as the brick and tile works at Glamis. Although evidently thriving in 1900, by 1912 the fortunes of Mr Guild and the Glamis Brick and Tile works had turned and the Dundee Courier records the sequestration of the estates of farmer and brick and tile manufacturer James Guild, Haughs of Cossans, Glamis following a drop in demand for brick and tile products (Scotland's Brick and Tile Manufacturing Industry, n.d).
- 8.6.37 OS maps dating to 1922 (not illustrated), 1955-57 (**Figure 8.10**), 1973 (not illustrated) and the 80s (not illustrated) show no major changes in the Site and the wider landscape, although by 1957 the buildings associated with Glamis Tile Works (Asset 172) had been removed from the Site.
- 8.6.38 Aerial photography (OS/67/293) show that Black Hill Wood (Asset 209) by 1967 LiDAR imagery (**Figures 8.11-12**) shows a sequence of parallel negative linear features suggestive of modern farming.
- 8.6.39 Cartographic evidence shows that little change has taken place within the Site during the modern period, except for a possible clay pit (Asset 207) associated with



Glamis Tile and Brick Works in the southeast edge of Land Parcel 2. The buildings associated With Glamis Tile Works had been removed by 1957. Therefore, it is judged a Low potential for modern remains of an archaeological interest to survive on the Site.

Undated Assets

- 8.6.40 This assessment has identified cropmarks and two findspots of uncertain origins within 1km of the Site. A few indeterminate cropmarks (Assets 162-163 and 198) are recorded within to the northwest and southwest of the Site. These rectangular enclosures which are likely part of a field-system may be associated with an enclosure (Asset 164) located c.800m to the north of the Site. A further linear cropmark (Asset 179) is recorded c. 260m to the south of the Site.
- 8.6.41 A stone ball (Asset 158) of uncertain origin from Cossins in Glamis was donated to the National Museum of Antiquities of Scotland in 1937. A spindle whorl (Asset 177) is recorded c. 240m to the northwest of the Site.

Previous Archaeological Investigations (Events)

- 8.6.42 This assessment has identified three past archaeological investigations (Event 204) undertaken in a field adjacent to St Orland's Stone (Asset 2) to the north of the Site (HES 2019b, 5). An excavation (Event 204) carried out in 1855 by 19th century antiquarian Andrew Jervise around St Orland's Stone uncovered a possible Pictish unenclosed burial (Asset 203) overlying five unpaved cists. An excavation was carried out around the stone in 2008 (Event 204) to establish its original location and to locate further associated burials. A geophysical survey (Event 204) undertaken in 2009 recorded a number of anomalies (Asset 194) including possible sub-circular enclosures and possible small barrows to the west of the cross slab and features which may indicate the presence of burials and trenches associated with the excavation discussed above.
- 8.6.43 The paucity of previous archaeological works may be a result of lack of development in the Study Area.

Aerial Imagery

- 8.6.44 As part of this assessment 14 aerial photographs were ordered and consulted from the National Collection of Aerial Photography held by Historic Environment Scotland. The list of photographs ordered can be seen below in **Technical Appendix 8.4: Aerial Photography**.
- 8.6.45 Aerial photos were also consulted on the Britain from Above(<https://www.britainfromabove.org.uk/>) and Cambridge Air Photos (<https://www.cambridgeairphotos.com/map/>) online portals.
- 8.6.46 Aerial photography from 1964 (OS/64/78) show an area of parallel linear features (Asset 210) in the western portion of Land Parcel 1, which are likely associated with an area of rig and furrow located c. 230m to the west of Land Parcel 1 (Asset 208) identified as cropmarks on aerial photography from 1971 (BGY58). Photographs



taken in 1964 (OS/64/78) depict undefined linear trends that seem to reflect geological features. A negative pit-like feature (Asset 207) in Land Parcel 2 immediately to the north Glamis Tile and Brick Works (Asset 172) is visible on a photograph from 1964 (OS/64/78/46), the 1900 OS map (**Figure 8.9**) and LiDAR imagery (**Figures 8.11-12**). This feature is probably a clay pit associated with Glamis Tile and Brick Works.

- 8.6.47 Aerial photography taken in 1967 (OS/67/293) depicts an area of rig and furrow (Asset 173) in a patch of land previously occupied by Blackhill Wood (Asset 209) immediately to the south of the Site. However, this area of the rig and furrow is probably related to woodland use and its subsequent removal rather than historic ploughing activity. Photography from 1967 also shows the pond (Asset 185) in the north edge of Land Parcel 1 visible on historic maps (**Figure 8.8**), and possible areas of rig and furrow (Asset 210) and geological features in Parcel 2.
- 8.6.48 Modern satellite imagery (**Figure 8.14**) shows cropmarks entailing sequences of parallel negative linear features across the Site reflective of modern farming.

LiDAR

- 8.6.49 LiDAR (Light Detection and Ranging) is a remote sensing technique which describes a method of determining three-dimensional (3D) data points by using a laser. Airborne LiDAR consists of an active laser beam that is transmitted in pulses from a fixed-wing or rotary aircraft and the returning reflection are measured. The first returns are considered equivalent to the digital elevation model of the land surface; it records the highest points, including buildings and the woodland canopy.
- 8.6.50 Regarding the nature of the data processed, the 'LiDAR for Scotland Phase 2' has been used for this assessment. The Scottish Public Sector LiDAR (Phase 2) dataset was commissioned in response to the Flood Risk Management Act (2009) by the Scottish Government, Scottish Environmental Protection Agency (SEPA), sportscotland, and 13 Scottish local authorities. This extension of the Phase 1 dataset collected airborne LiDAR for 66 additional sites for the purposes of localised flood management. Data was collected between 29th November 2012 and 18th April 2014 totalling an area of 3,516 km² (note the dataset does not have full national coverage). Aside from flood risk management, this data has also been used for archaeological and orienteering purposes.
- 8.6.51 For this case study 1m spatial resolution Digital Surface Model (DSM) and Digital Terrain Model (DTM) have been produced from manipulating the LiDAR Point Cloud and subsequently enhanced by implementing different visualisation techniques. Analytical Hillshading (x16), Sky View Factor (SVF), Visualisation for Archaeological Topography (VAT), Simple Local Relief model (SLRM), Laplacian Filter and VAT & Analytical Hillshading (x16) have been produced by using the software Relief Visualization Toolbox 2.2.1 and SAGA GIS.
- 8.6.52 LiDAR imagery (**Figures 8.11-12**) reveals undefined linear features across the Site, likely geological features. A series of parallel negative linear features in the southern parts of both the eastern and western sections of Land Parcel 1 are likely to



represent rig and furrow (Asset 210) overlain by modern ploughing. A likely clay pit (Asset 207) can be observed on **Figures 8.11** and **8.12**. LiDAR data for Land Parcel 2 (**Figures 8.11** and **8.12**) is less conclusive; however, anomalies observed correspond with the historic removal of 'Blackhill Wood' (Asset 209), a pond (Asset 185) and geology. A slightly raised rectangular area within Land Parcel 1 corresponds to the former location of the range of buildings/cottages known as Sodha (Asset 190).

Future Baseline

- 8.6.53** In the case of the 'Do Nothing' scenario and the Site continuing in its current form, the future baseline would be as per the current baseline described previously and above.

8.7 Scope of the Assessment

Spatial Scope

- 8.7.1** As discussed above in **Section 8.5.1**, a 1km Study Area has been identified for the assessment all known heritage assets and previous archaeological works, and a 3km Study Area has been identified for the assessment of potential effects upon the settings of designated heritage assets.

Temporal Scope

- 8.7.2** This assessment considers all aspects of human activity from prehistory until the present day. Geological activity and landform changes occurring prior to the prehistoric period are beyond the scope of this assessment.

Receptors Requiring Assessment

- 8.7.3** A total of 10 known non-designated heritage assets (Assets 172, 185-190, 207, 209 and 210) have been identified within the Site. Consideration of the nature, date and extent of these known remains in conjunction with identification of all known remains within 1km of the site and a walkover survey have been used to evaluate whether known or hitherto unknown remains have the potential to be subject to direct impacts and effects as a result of the construction of the Proposed Development
- 8.7.4** This assessment has identified all designated heritage assets within 3km of the Proposed Development excluding the site access which is a pre-existing low-lying feature in the landscape. ZTV analysis (**Figure 8.13**) indicates that the Proposed Development would not be visible from 88 designated heritage assets within the 3km Study Area. A review of the assets outside the ZTV was undertaken to identify if any of these were in an area of the landscape within the ZTV which formed part of a key view towards the asset and which would feature the Proposed Development either in the foreground or the background but no such assets were identified. The assets which have been excluded from further assessment are detailed in **Technical Appendix 8.3; Table 8.3.1**.
- 8.7.5** The Scheduled Monument St Orland's Stone (Asset 2), Glamis Castle GDL (Asset 16) and Category C Listed Haughs of Cossans Farmhouse (Asset 148) have been



identified as potentially subject to significant effects and thus are discussed in detail within this Chapter. A further six Scheduled Monuments (Assets 3, 6, 9, 11, 5, and 13), 14 Category B Listed Buildings (Assets 48, 69, 21, 46, 52-45, 47, 62, 64, 73, 74 and 92) and 25 Category C Listed Buildings (Assets 120, 149-156, 108, 122, 157, 109-119 and 123-125) fall within the ZTV (**Figure 8.13**) and the 3km Study Area. These designated heritage assets are discussed in **Technical Appendix 8.2: Setting Assessment**.

Environmental Measures Embedded into the Development Proposals

- 8.7.6 Embedded mitigation proposals are those mitigation measures that are inherent to the Proposed Development. Embedded mitigation includes all mitigation usually assumed to be in place during construction, operation and decommissioning, and is generally regarded as industry standard or Best Practice. Construction and environmental management plans are introduced in **Chapter 3: Proposed Development Description** with an outline CEMP provided in **Technical Appendix 3.1: Outline CEMP**.
- 8.7.7 The following measures have been designed as part of the Proposed Development to minimise and mitigate the impacts upon sensitive heritage receptors:
- The BESS substation has been proposed in Land Parcel 2 away from sensitive receptors such as Ancient Woodland (AWI), St Orland's Stone (Asset 2) and Glamis Castle GDL (Asset 3)
 - A 300m buffer for the BESS from residential properties including Haughs of Cossans Farmhouse (Asset 148) has been established.
 - The number of proposed solar panels has been reduced in the northern portion of Land Parcel 1 to create a 70m buffer between the panels and the St Orland's Stone (Asset 2) in order to maintain the open aspect of the setting of the Scheduled Monument and thus minimise the impact.
 - The number of proposed solar panels has been reduced in the southeastern portion of Land Parcel 1 to create a buffer between the panels and the Haughs of Cossans Farmhouse (Asset 148) in order to minimise the impact upon the Category C Listed Building.

8.8 Assessment of Potential Effects

Construction Effects

- 8.8.1 Construction impacts associated with the Proposed Development include construction works for the PV solar modules, the BESS substation, hardstanding areas, access tracks and associated services and infrastructure. Other construction activities, such as vehicle movements, soil and overburden storage and landscaping also have the potential to cause direct permanent and irreversible impacts to cultural heritage assets. As such the construction of the Proposed Development has the potential to disturb, damage or destroy features or buried remains of cultural heritage interest.
- 8.8.2 Assessment of construction effects on cultural heritage receptors has been limited to direct impacts on known heritage assets and potential buried remains. Whilst



there is some limited potential for impacts upon the setting of designated heritage assets to occur during the construction phase, any such effects would be temporary, and it is considered that setting effects resulting from construction would not exceed the predicted operational effects upon the setting of heritage assets. As such, with the aim of achieving proportionality, the potential for setting effects is considered under operational effects.

- 8.8.3 This assessment has identified 10 non-designated heritage assets within the Site. The importance of these heritage assets is detailed in **Table 8-1**. **Table 8-6** also notes the predicted magnitude of impact and level of effect.

Table 8-6: Heritage Assets within the site, their importance, the predicted magnitude of impact and resulting level of effect as a result of construction.

Asset Number	Asset Name	Importance	Magnitude of Impact	Level of Effect
172	Buildings associated with Glamis Tile Works	Negligible	None	No effect
185	Pond, Cossans	Negligible	High	Minor
186	Possible pond or pit	Negligible	High	Minor
187	Possible pond or pit	Negligible	High	Minor
188	Possible pond or pit	Negligible	High	Minor
189	Possible pond or pit	Negligible	High	Minor
190	Area with a building, structure set north to an enclosed area	Low	High	Moderate
207	Clay Pit north of Glamis Tile and Brick Works	Negligible	High	Minor
209	Blackhill Wood	Negligible	High	Minor
210	Cropmarks west of Haughs of Cossans	Low	High	Moderate

- 8.8.4 A range of rectangular farm buildings or cottages (Asset 190) with an enclosed area, likely gardens or allotments, located in the northwest portion of Land Parcel 1 can be observed on historic maps (**Figures 8.8 and 8.9**). The 1861 and 1900 OS maps (**Figures 8.8-8.9**) show buildings associated with Glamis Tile Works (Asset 172) in the southeastern portion of Land Parcel 1. A pond (Asset 185) and four possible ponds or pits (Assets 186-189) within Land Parcel 2 are shown on the 1861 OS map (Asset 8). A probable clay pit (Asset 207) located in the southeast edge of Land Parcel 2 likely associated with Glamis Tile and Brick Works (Asset 172) can be identified on an early 20th century map (**Figure 8.9**) and LiDAR Imagery (**Figures 8.11-8.12**). Black Hill Wood (Asset 209), which can be identified on historic



maps (Assets 8-10), and it extended into the southeast edge of Land Parcel 1, was removed by 1967 as demonstrated by aerial photography (OS/67/293). Overall, these assets are judged to be of Negligible cultural value as they are relatively common features of late post-medieval or modern date recorded from historic mapping and with limited or no visible above ground remains. The building (Asset 190) within the Site is likely associated with the historic working of the land and is judged to be of Low cultural value. Cropmarks (Asset 210) in the western portion of Land Parcel 1 visible on aerial photography are likely an area of post-medieval rig and furrow and are judged to be of Low cultural value.

- 8.8.5 The Proposed Development is predicted to have a High impact on the known assets recorded within the Site, except the buildings associated with Glamis Tile Work (Asset 172). Given their Low importance, this High magnitude of impact would result in a **Moderate** Level of effect upon the cropmarks west of Haugh of Cossans (Asset 210) and the former location of a range of buildings or cottages known as Sodha (Asset 190), which would be significant in EIA terms. Given their Negligible importance, the Proposed Development would result in a **Minor** Level of effect, which would be not significant, upon the pond (Asset 185), the possible pits or ponds (Assets 186-189), and the clay pit north of Glamis Tile and Brick Works (Asset 190) and the Blackhill Wood (Asset 209). There would be no impact upon the former buildings associated with Glamis Tile Works (Asset 172), which would be not significant.
- 8.8.6 In addition to impacts upon known assets this assessment has indicated there is a Low to Medium potential for prehistoric remains to survive on the Site, a Low potential for Roman and Modern remains to survive on the Site, a Medium to High potential for Early Medieval remains to survive on the Site and a High potential for post-medieval remains to survive on the Site.
- 8.8.7 Should hitherto unknown buried archaeological remains survive within the footprint of the Proposed Development, there is the potential for a High magnitude impact upon any such remains. The importance of hitherto unknown archaeological remains on the Site cannot be predicted although any prehistoric and Early Historic remains would likely be of relatively higher importance compared to post-medieval agricultural remains.

Operational Effects

- 8.8.8 Operational effects include potential effects upon the settings or character of designated assets such as Listed Buildings, Scheduled Monuments, GDLs, and Conservation Areas (note there are no Inventory Battlefields or World Heritage Sites located within the Study Areas). No direct effects upon designated or non-designated assets are anticipated during the operational phase.
- 8.8.9 A zone of theoretical visibility (ZTV) with screening effect of woodland and settlement was produced for the Proposed Development (**Figure 8.13**). The ZTV excludes the site access and is based on a solar panel top height of 3.25m, a viewing height of 2m above ground level, and Ordnance Survey Terrain 5 Height data with the locations of woodland and buildings taken from the OS Open Map Local dataset. ZTV analysis (**Figure 8.13**) indicates that the Proposed



Development would not be visible from 88 designated heritage assets within the 3km Study Area. These assets which have been excluded from further assessment are detailed in **Technical Appendix 8.3; Table 8.3.1**.

- 8.8.10 ZTV analysis identified visibility of the Proposed Development from 48 designated heritage assets located within 3km of the Site (**Figure 8.13**). Given their sensitivity The Scheduled Monument St Orland's Stone (Asset 2), Glamis Castle GDL (Asset 16) and Category C Listed Haughs of Cossans Farmhouse (Asset 148) are discussed in detail below. The remaining designated heritage assets within the 3km ZTV would not be subject to significant effects and are discussed in **Technical Appendix 8.2: Setting Assessment**.

St Orland's Stone, Glamis

- 8.8.11 St Orland's Stone Scheduled Monument (Asset 2) (**Technical Appendix 8.3; Plate 14**) is by virtue of its designation, considered to be of High importance.
- 8.8.12 This Scheduled Monument, which is a Property in Care (PiC) and managed by HES on behalf of the Scottish Ministers, comprises a Class II Pictish upright cross-slab standing 2.36m tall and probably dating to between the 8th and the 9th century (HES 2019b). The stone was broken and pinned back in the middle of the 19th century as shown in **Technical Appendix 8.3; Plate 14**. An enclosure was created in 1952 to protect the stone. The monument is described within the statement of significance thus: *"the front face exhibits a Christian cross, carved all in relief, with numerous decorated panels of interlace, knotwork, key-pattern and spiral work, as well as several fish-monster type beasts, although these are at times indistinct. The high relief of the carving of the cross appears to make it stand out from the slab as if to emulate a freestanding cross. The back face exhibits zoomorphic borders, Pictish symbols, a beast, a possible cow, a boat with figures, men on horseback, hounds and a recess where a fragment appears to have been removed."* (HES 2019b, 2).
- 8.8.13 The cultural significance of the St Orland's Stone is assessed to lie primarily in its exceptional historic and evidential values (including its architectural interest) as an example of the artistic skill of the Picts, and an insight into the culture, religion and lifestyle of the of early medieval people in Scotland as illustrated in the detail of its numerous carvings (HES 2019b, 4-7). This Scheduled Monument is particularly important because it is a rare example of Pictish cross-slab standing in its original location, it displays the only known representation of a Pictish boat on early medieval carved stone, and it has a mix of Pictish and Christian symbols, potentially indicating the relationship between the elite Pictish society and Christianity. Local legend suggests that the stone has the power to predict the future, and although this is a speculation, it adds a local historic and communal value to the stone (HES 2019b, 7). In addition, this stone has spiritual and religious value as an explicit manifestation of Christianity and is associated with burials found nearby. While this religious setting is not apparent at St Orland's or other stones in Glamis and the Study Area (Assets 13-15) (Gonzalez 2018, 29-33), there are examples associated with religious setting such as the socketed stone in Inverkeilor Parish Church (Borland, 2007, 103-104).



- 8.8.14 While some Pictish symbol stones, such as the stone marking the entrance to the Pictish royal site in Rhynie, have been designed as landmarks to be viewed from nearby monuments and landforms (HES 2004; NG 2025), the St Orland's Stone does not appear to have been located to be seen from a distance. This is evidenced from its topographical location which does not compare to and indeed is more discrete than the setting associated with the carved stone at Rhynie. Moreover, an analysis of landscape and sculpture in Pictish Scotland notes that the settlement of Kirriemuir is set higher than Glamis meaning that views across the landscape in the area surrounding St Orland's Stone (Asset 2) are more limited (Gonzales 2018, 32). Given the above evidence it can be argued that St Orland's Scheduled Monument was not designed as a prominent landmark in the landscape. Nevertheless, the relative topographical prominence of the ground on which the stone is set indicates that it was positioned to overlook a relatively flat landscape, and it commands outward views in all directions. As such some of the stone's cultural significance is also derived from the landscape in which it is experienced.
- 8.8.15 The stone is currently set within a post and wire fenced enclosure accessed via a metal gate. The fenced area encloses a rectangular concrete setting for the stone which has a concrete kerb and is embedded with rounded stones, part overgrown with moss (see **Technical Appendix 8.3; Plates 14-16**). The enclosure and concrete stone setting at its base have an adverse impact on the stone's current setting. The stone is also subject to ongoing weathering and a case study undertaken in 2016 identified it as in need of further protection (Foster et. al. 2016, 20). HES note that the aesthetic value of the stone will have changed over time due to its changing landscape setting and to its changing audience (HES 2019b, 8). An analysis of the landscape around the stone undertaken by Gonzalez indicates that in the Early Historic period the area may have been waterlogged with numerous marsh areas (as is the current marshland to the west of Land Parcel 1), with smaller "islands" of land where the erection of monuments was possible (Gonzalez 2018, 32, 35). As such, it is likely that the setting of St Orland's Stone has significantly changed since it was designed and built, and that those who view the stone today will have a different experience to those who viewed it within its original landscape setting.
- 8.8.16 Later changes in the landscape are also evidenced on historic maps (**Figures 8.8-10**) which depict Haughs of Cossans (Asset 148) and its associated farm buildings and enclosure (Asset 190) to the south of the stone, and the placement of a railway line to the north of the stone by the second half of the 19th century. Cartographic evidence, satellite imagery and the site visit have also revealed that the landscape has been subject to further change in the modern period. The farm building (Asset 190) linked to Haughs of Cossans Farmhouse (Asset 148) was demolished by 1957 (**Figure 8.10**). Following this, the railway was dismantled (**Figure 8.14**), and modern infrastructure began to emerge throughout the surrounding landscape, including electric pylons, telegraph poles, and tall radio masts (**Technical Appendix 8.3; Plates 1, 5, 10 and 12**).
- 8.8.17 The complexity and survival of the artwork on the stone, which was masterfully carved with precision and presented clearly, is aesthetically significant. Furthermore, the fact that the stone was repaired in the middle of the 19th century



suggests that there was an early interest in the aesthetic value of the stone. Excavations and a geophysical survey (Event 204) carried out in a field adjacent to the stone identified buried remains, such as burials and enclosures, likely associated with the monument. It can reasonably be argued that this may have been a significant religious location, and the stone would have been visible from all around the open landscape, including the Site which is situated c.200m to the south (HES 2019b, 9). Currently, St Orland's Stone stands isolated in a field, with no visible associated monuments, although it is unlikely that this would have been the case in the past (HES 2019b, 9). Despite the changing landscape throughout the centuries, the stone's rural setting, which directly links to its historic setting at the time of the construction and its spiritual and aesthetic purpose, is considered to positively contribute to the asset's overall cultural significance.

- 8.8.18 The site visit identified clear views of Land Parcel 1 and Haughs of Cossans Farmhouse (Asset 148) and glimpsed views, somewhat screened by trees and vegetation, of Land Parcel 2 from St Orland's Stone (**Technical Appendix 8.3; Plates 3 and 15-16**). Glimpsed views of the location of the stone were also possible from Land Parcel 1 (**Technical Appendix 8.3; Plate 3**), although the stone was not identifiable due to its scale and intervening distance. Wireline Viewpoints 2a and 2b (**Figures 8.16 and 8.17**) demonstrate that solar panels, security cameras and security fence in Land Parcels 1 and 2 would be visible from St Orland's Stone. The BESS would also be visible and would appear as a blocky structure backdropped by hills. However, there would be a clear separation buffer between the St Orland's Stone and the low-lying proposed panels which would not interrupt or challenge views of the skyline. While the BESS would be visible as a taller structure but would be seen in the relative distance and backdropped by hills (**Figures 8.15 – 8.17**). The Site is adjacent to northeast boundary of Glamis Castle GDL (Asset 16) which comprises woodland and marshland and woodlands, including Berry Moss Wood, Haughs Strip and Bents Wood. **Technical Appendix 8.3; Plates 29 and 30** demonstrate that standing stone is not visible from this area owing to intervening distance, vegetation and sloping topography (**Technical Appendix 8.3; Plates 29-30**). While the Proposed Development would be visible from this area, it would not share views with the Scheduled Monument as demonstrated by Wireline Viewpoint 1 (**Figures 8.15 – 8.17**).
- 8.8.19 Although the site visit identified long outward views from the stone (**Technical Appendix 8.3; Plates 14-16**), it also established that the relatively narrow and small stone is not visible across the landscape from any distance (**Technical Appendix 8.3; Plates 29-30**). The stone is currently set at the margin of an agricultural field with no noticeable paths and walking trails nearby, which make accessibility to experience the stone difficult. While there are other Pictish standing stones (Assets 13-15) within the Study Area, they are not visible from St Orland's stone, and there appears to be no visible connection between them (**Technical Appendix 8.3; Plates 15, 16, 28 and 31**). In addition, the detailed carved artwork on the stone suggests that the stone was indeed designed mainly to be appreciated from close up rather than as prominent landmark in the wider landscape. On balance it is considered that the St Orland's Stone has a Medium sensitivity to changes in its setting.



- 8.8.20 The proposed solar panels and BESS would be relatively low-lying structures and thus they would not interrupt or challenge views towards the location of the standing stone from the wider landscape. While located within 200m of the stone, the distance of separation between the Proposed Development and the stone would allow for continued appreciation of it as an isolated monument with an overall open aspect. However, the Proposed Development would be clearly visible from the Scheduled Monument and would also be seen on immediate approaches to it. The change from agricultural use to solar energy generation would reduce the proportion of rural land in the vicinity of the stone, and as such its setting would be changed and the sense of rural isolation somewhat reduced. However, as outlined above, St Orland's Stone (along with its likely associated buried remains) and its relationship with the surrounding landscape has changed throughout its history and the large scale modern agricultural layout of the fields is a product of modern agricultural farming methods. Moreover, the visits established that it is difficult to appreciate the stone unless within several metres of it (**Technical Appendix 8.3; Plates 3 and 14**). As such, it is considered that while the Proposed Development would represent a visual intrusion into an aspect of the monument's setting which makes some contribution to an understanding of its cultural significance. It is assessed that the magnitude of impact would be Medium and given its Medium sensitivity it would result in a **Moderate** and significant level of effect.
- 8.8.21 While the proposed Development would have a significant adverse effect on the setting of the St Orland's Stone, the ability to appreciate the significance of the stone as an example of Pictish artistry and an insight into the religion, culture and lifestyle of the early medieval people of Scotland would be retained in the fabric of the Scheduled Monument. The overall aspect of the stone would remain open, and it would be possible to understand its placement overlooking a wide area. Therefore, the ability of the asset's setting to contribute to the understanding, appreciation and experience of the cultural significance of the asset would be adequately retained and as such the integrity of its setting would not be significantly adversely impacted, and therefore not contrary to Policy 7(h) of NPF4.
- 8.8.22 **Haughs of Cossans Farmhouse**
- 8.8.23 Haughs of Cossans Farmhouse (Asset 148) (**Technical Appendix 8.3; Plates 2 and 15**; further photos on Canmore 2024c) is a Category C Listed Building built in the late 19th century and is described in the gazetteer in **Technical Appendix 8.1**. The statement of special interest states that the farmhouse was adjacent to the site of the former Haughs of Cossans (demolished circa 1980) that contained carved panels probably from the former Castle of Cossans (Asset 159), which was demolished in 1771 (HES 1998c).
- 8.8.24 The OS map of 1861 (**Figure 8.8**) depicts Haughs of Cossans farmstead as a U-plan steading, with the opening to the south, a horse mill on the external north elevation, a covered western section of the courtyard and a small rectangular farmhouse to the south of the steading. This map also shows an ancillary building(s) with an enclosed garden or allotment (Asset 190) located c. 400m to the north of the main farmhouse, and the railway track further to the north. The 1900 OS map (**Figure 8.9**) shows a larger farmhouse to the west of the steading set in gardens;



the steading has extensions to the east forming another U-plan with courtyard. Two pumps are shown, one to the north and one to the southeast of the farmhouse. Analysis of historic maps (**Figures 8.8-10**), satellite imagery and the site visit have demonstrated that the landscape has been subject to further change in the modern period. The ancillary buildings (Asset 190) linked to Haughs of Cossans Farmhouse (Asset 148) were demolished by 1957 (**Figure 8.10**). Following this, the railway was dismantled (**Figure 8.14**), and modern infrastructure began to emerge throughout the surrounding landscape, including electric pylons, telegraph poles, and tall radio masts (**Technical Appendix 8.3; Plates 1, 5, 10 and 12**).

- 8.8.25 The Category C Listed Building derives a great deal of its significance from its architectural interest as an example of a 17th century farmhouse, as well as its historic association with earlier buildings which formed part of the Haughs of Cossans farmstead complex (some of which have been demolished and replaced by modern farm buildings in the late 20th century). The farmhouse's rural setting, which directly links to its historic setting at the time of the construction and its agricultural purpose, is also considered to positively contribute to the asset's overall importance. The land within the Site is part of the historic landholding associated with the farm and thus is within the setting of the Listed Building. The above evidence suggests that while the Listed Building derives most of its importance from its architectural and historic significance as an incomplete example of a post medieval farmstead, its agricultural setting also makes a contribution to its importance as overall it has not been subject to many changes. In this context, it is considered that Haughs of Cossans farmstead has Medium sensitivity to change in its setting.
- 8.8.26 The site visit has established that solar panels proposed in Land Parcel 1 would be visible from the farmstead (**Technical Appendix 8.3; Plate 2**), and that the panels proposed in Land Parcel 2 may be glimpsed, especially in the autumn and winter seasons when vegetation provides less screening. The change from agricultural use to solar energy generation would reduce the overall proportion of agricultural land in the vicinity of the farm and within its historic landholding, and as such its setting would be changed. The Proposed Development would be located within land that has historically been farmed by the tenants at the Haughs of Cossans and also within land associated with the Glamis Brick and Tile Works and would reuse historic access routes associated with these assets. The change in land use, within land which relates directly to the historical function and operation of the farm would diminish the agricultural character of the setting of the farmhouse. However, as outlined above, the surrounding buildings, the historic plan of the farm complex and its associated relationship with surrounding farmland has changed over time as demand for land resources has also changed. The brick and tile works associated with the farm is no longer legible as part of the landscape and fields have been amalgamated to accommodate modern farming methods. Overall, it is assessed that the Proposed Development would have a Medium magnitude of adverse impact on the Listed Building's setting, and considering its sensitivity, a resulting **Moderate** level of effect is predicted, which would be significant. The identified adverse effect on Haughs of Cossans Farmhouse would not equate or extend to an adverse effect on the character and special architectural and historic interest of the Listed Building.



and as such the Proposed Development is not considered contrary to Policy 7c of NPF 4.

Glamis Castle Inventory Garden and Designed Landscape

- 8.8.27 While the original Glamis Castle was built in the 10th or 11th century, and was added to in the 16th, 17th and 18th centuries, Glamis Castle GDL (Asset 16), which is located immediately to the west of the Site, was designed in the mid-18th century as observed on Roy's map (**Figure 8.6**). The hills where the GDL is located were planted up with woodlands with a formal design of radiating avenues within. The parks around the castle were enclosed in a diamond pattern, and a shrubbery area with serpentine walks lay to the southeast of the Castle (HES 1987).
- 8.8.28 The GDL encompasses the Category A Glamis Castle (Asset 18) and a further 28 Listed Buildings (Assets 19, 50-61, 79-83, 107, 121, 127-134), which include towers, statues, bridges, and designed gardens. In addition to the architectural features and designed gardens, the GDL comprises parkland with a variety of tree species, many dating from the 18th century, woodland, much of it planted in the 17th and 18th centuries. HES note that *"the policy woodlands are particularly significant to the designed setting of the Castle. Views into the parks from the surrounding roads are limited by the woods and the high policy walls which form a significant scenic feature in themselves. The Castle is visible from the A928 to the west, and the farmed parks to the east are visible from the A94."* (HES 1987). HES also mentions magnificent views to the surrounding area, particularly from the roof of the castle.
- 8.8.29 The GDL derives most of its cultural significance from its historic and architectural interest as an 18th century designed garden and landscape, as well as from its association with Glamis Castle. The site visit established that the GDL is mainly enclosed by surrounding woodland, trees and vegetation which screen outward views towards the Site at ground level. While it is recognised that woodland screening can be removed, in the case of this GDL, the woodland is a core part of the character of the landscape and as such the adverse impacts that would arise from any hypothetical future removal would far outweigh the impacts that would be experienced as result of increased visibility of the Proposed Development and thus for the purposes of this assessment it is assumed that the woodland policies of the GDL will be maintained in perpetuity. A map of the ground and the gardens (Glamis-Castle 2025) shows that the walks and trails within the GDL with no trails beyond its boundaries, suggesting that the GDL was planned and continues today to be viewed from within the boundaries of its designation.
- 8.8.30 The screened ZTV (**Figure 8.13**) identifies visibility of the Proposed Development from the eastern edge of the GDL, and this has been confirmed by Wireline Viewpoint 1 (**Figures 8.15 – 8.17**) and the site visit (**Technical Appendix 8.3; Plates 29-30**). As discussed above, the Site is adjacent to northeast boundary of the GDL which comprises marshland and woodlands, including Berry Moss Wood, Haughs Strip and Bents Wood. Wireline Viewpoint 1 and the site visit have identified views of Land Parcel 1 from the agricultural field on the edge of the GDL as well as from the clearing between the woodland along Haughs Strip and Berry Moss (**Figure**



8.15 and **Technical Appendix 8.3; Plates 29-30**, although the Proposed Development would result in a minor intrusion of low-lying solar panels in Land Parcel 1 that would not challenge or interrupt views of the skyline. These views have no intervisibility with the castle and the designed gardens due to the intervening policy woodlands. Therefore, there is no identifiable physical or visual relationship between these fields and Glamis Castle and its associated designed gardens. OS maps (**Figures 8.8-10**) show that the clearing between the woodland along Haughs Strip and Berry Moss was historically planted during late 19th and early 20th centuries, and it was cleared by the second half of the 20th century (**Figure 8.10**) thus the open views from the clearing are relatively recent and the composition and setting of the GDL has been subject to change. Overall, it is considered that Glamis Castle GDL has a High sensitivity to change in its setting.

- 8.8.31 Given the above evidence, the visibility of the Proposed Development from this limited area of the GDL would not impact on the ability to appreciate the 18th century Glamis Castle GDL. The change to the wider rural setting would result in a barely distinguishable adverse change to the setting of the GDL beyond those elements that contribute directly to its cultural significance. Therefore, it is assessed that the Proposed Development would have a Negligible magnitude of impact upon Glamis Castle GDL's setting, which would result in a **Minor** level of effect, which would be not significant.

Decommissioning Effects

- 8.8.32 The Proposed Development would be decommissioned at the end of the operational phase. At this time, the solar panels and associated infrastructure would be removed from the Site.
- 8.8.33 Any decommissioning works would be subject to prevailing legislation, guidance and permitting regimes at the time of decommissioning. The decommissioning would allow for the baseline land use to be restored.
- 8.8.34 A well-designed decommissioning process would not cause any ground disturbance beyond the already disturbed footprint of the Proposed Development. It is not, therefore, anticipated that decommissioning works would cause direct impacts upon any buried archaeological remains, deposits or features beyond the existing footprint of the Proposed Development.
- 8.8.35 It is considered that there is a potential for temporary effects upon the settings of heritage assets during the decommissioning phase, but it is not anticipated that these would cause a level of effect higher than those reported in this Chapter for Construction and Operation of the Proposed Development. Any decommissioning effects would be temporary and likely of a shorter duration than the assessed Construction effects.
- 8.8.36 Upon the completion of the decommissioning, the long-term effects of the Operational Phase on the setting of assets would be removed, with the setting of those assets restored to the current baseline condition



8.9 Mitigation

- 8.9.1 National planning policies and planning guidance contained within the NPF4 and HES guidance, as well as local plan policies, require a mitigation strategy that is designed to take cognisance of the possible impacts upon heritage assets by a proposed development and avoid, minimise, or offset any such impacts as appropriate. The planning policies and guidance express a general presumption in favour of preserving heritage remains in situ [wherever possible]. Their 'preservation by record' (i.e. through excavation and recording, followed by analysis and publication by qualified archaeologists) is a less desirable alternative NPF4 notes that the policy intent is for the protection and enhancement of historic environment assets (Scottish Government, 2023: 45). Policies related to designated assets (Policies 7a to 7j and 7l) prefer avoidance of impact and where this is not possible require that any impacts are minimised. Policy 7o, relating to non-designated assets, states that these assets and their settings 'should be protected and preserved in situ wherever feasible [. . .] Where impacts cannot be avoided, they should be minimised. Where it has been demonstrated that avoidance or retention is not possible, excavation, recording, analysis, archiving, publication and activities to provide public benefit may be required through the use of conditions or legal/planning obligations' (ibid, 46-47).
- 8.9.2 Prior to mitigation this assessment has identified a potential **Moderate** and significant level of effect upon the former location of the Sodha Cottages (Asset 190) and cropmarks west of Haughs of Cossans (Asset 210). A **Minor** and not significant level of effect has been identified upon a pond (Asset 185), four possible ponds or pits (Assets 186-189) a clay pit north of Glamis Tile and Brick Works (Asset 207) and a former area of woodland (Asset 210).
- 8.9.3 In advance of construction a programme of archaeological investigation will be undertaken targeted on the above-mentioned heritage assets. This will be designed to inform further about their nature, scale and extent ensuring minimal loss of information. Following the completion of these works impacts on the remains would be reduced to a non-significant level.
- 8.9.4 In addition to impacts upon known assets this assessment has indicated there is a Low to Medium potential for prehistoric remains to survive on the Site, a Low potential for Roman and Modern remains to survive on the Site, a Medium to High potential for Early Medieval remains to survive on the Site and a High potential for post-medieval remains to survive on the Site.
- 8.9.5 Should hitherto unknown buried archaeological remains survive within the footprint of the Proposed Development, there is the potential for a High Magnitude impact upon any such remains. The importance of hitherto unknown archaeological remains on the Site cannot be predicted although any prehistoric and Early Historic remains would likely be of relatively higher importance compared to post-medieval agricultural remains, especially any remains associated with St Orland's Stone (Asset 2).



- 8.9.6 In accordance with national and local planning policies on heritage, an archaeological programme of works will be required in advance of the construction of the Proposed Development. Such works are likely to take the form of an archaeological evaluation by trial trenching in portions of Land Parcel 1 and 2. The purpose of the trial trenching would be to determine the presence, character, extent and significance of any currently unknown archaeological features or artefacts that may be disturbed by ground-breaking works and to mitigate any impact upon them either through avoidance or, if preservation in situ is not warranted, through preservation by record. If significant features are found further mitigation is likely to be required and may include full excavation to be followed by a programme of post-excavation analysis including publication. The scope and scale of these works will need to be agreed with Angus Council, as advised by the Aberdeenshire Council Archaeology Service (ACAS), via a Written Scheme of Investigation (WSI).
- 8.9.7 The Proposed Development has been designed to minimise impacts upon the setting of St Orland's Stone and Haughs of Cossans Farmhouse. However, owing to the proximity of the Proposed Development significant Moderate adverse settings effect have been identified for St Orland's and Haughs of Cossans Farmhouse. However, it is considered that the ability of the asset's setting to contribute to the understanding, appreciation and experience of the asset and its significance would be adequately retained in each case and there would not be an adverse impact upon the integrity of the setting of St Orland's stone or on the character and special architectural and historic interest of the Haughs of Cossans Farmhouse. Beyond the steps taken during the iterative design process to minimise impacts upon the settings of these assets, there are no direct measures that can be applied to further mitigate effects; on this basis no further measures to offset these impacts are proposed.
- 8.9.8 The Procurement Reform (Scotland) Act 2014 and its implications through NPF4, as well as recent guidance from ClfA (2021a) and ALGAO (Mann 2023) have noted the need for public benefit or public engagement in archaeology. HES's Our Past, Our Future (2023) states that 'the historic environment creates real benefits for people', and two of the three priorities of the publication relate to public engagement and public benefit. As discussed in the Embedded Environmental Measure Section (**Section 8.7.6**) above it is proposed to place information boards along the public footpath that runs adjacent to the Site with archaeological and historic information relating to the land within the Site and wider area including the buildings at Sodha, the site of Glamis Tile Works and St Orland's Stone well as interpretation and dissemination about any archaeological remains which may be found during archaeological investigation within on the Site. The information boards would also provide directions to the stone in order to make it more accessible to the public and could also link the information already available about the stone which is provided by an online portal offering a 3D model and historic information (Sketchfab 2025). The scope and requirement of any public benefit should be agreed by the client and be undertaken in consultation with the client and the ACAS.



8.10 Assessment of Residual Effects

Construction

- 8.10.1 Direct impacts during construction have a potential to result in a Moderate and Minor level of effect upon known heritage assets
- 8.10.2 The implementation of the above outlined mitigation measures will allow for recording of any archaeological deposits associated with known remains and investigate the potential for previously unknown assets as well as plan for the potential for hitherto unknown remains to be identified by the construction team. Potential effects on unknown and previously unrecorded buried remains cannot be predicted at this stage, although any such impacts are also addressed by the committed mitigation measures, and it is judged to be unlikely that they will exceed the EIA significance threshold.

Operation

- 8.10.3 Whilst some design measures are suggested under the embedded environmental measures Embedded discussed above these would not reduce the levels of setting effect assessed for the operational phase as the Proposed Development would still form a new built feature in some views. As such residual effects would be the same as assessed for the operational stage.

Decommissioning

- 8.10.4 The predicted residual effects for decommissioning will be the same as assessed for the decommissioning effects above.

8.11 Assessment of Cumulative Effects

- 8.11.1 Cumulative effects relating to cultural heritage are for the most part limited to operational effects upon the settings of heritage assets. While there can in some rare cases, be cumulative direct effects, none are anticipated to result from the construction, operation or decommissioning of the Proposed Development.
- 8.11.2 As such this assessment considers the potential for cumulative effects upon the setting of heritage assets which have the potential to occur during the operational phase.
- 8.11.3 The assessment of cumulative effects within this EIA Report chapter is based upon those identified in **Table 3-1** in Chapter 3: Proposed Development Description and shown on **Figure 5.4**. **Figure 5.4** shows the visual envelope of the Suttieside Solar Farm and Craignathro Solar Farm developments along with that of the Proposed Development. As shown on **Figure 5.4**, the visual envelopes of the three schemes are largely separate and the majority of assets which have intervisibility with the Proposed Development would not be intervisible with either Suttieside or Craignathro. However there are some areas of overlap with visibility of the Proposed Development and Suttieslea in relation to the Enclosure 500m north of Mains of Brighton (Asset 6) and St Ninian's Chapel Burial Ground on Fletcherfield



Farm (Asset 48). In each case the anticipated impact on the setting of the asset from the Proposed Development would result in a barely distinguishable change to setting. The additional impact of the Proposed Development in views with Suttieside would be **Negligible** and not significant in each case.

8.12 Summary

- 8.12.1 This chapter considers the archaeological and cultural heritage value of the Site and assesses the likely significant effects on archaeological features and heritage assets resulting from the construction, operation and decommissioning of the Proposed Development.
- 8.12.2 National planning policies and planning guidance as well as local planning policies require that account is taken of potential effects upon heritage assets by proposed developments and that where possible such effects are avoided. Where avoidance is not possible these policies require that any significant effects on remains be minimised or offset.
- 8.12.3 This assessment has identified 10 non-designated heritage assets within the Proposed Development (**Table 8-6**). A potential **Moderate** Level of effect during construction on cropmarks west of Haugh of Cossans (Asset 210) and the site of the Sodha Cottages (Asset 190) has been identified. A potential **Minor** Level of effect upon the pond (Asset 185), the possible pits or ponds (Assets 186-189), the clay pit north of Glamis Tile and Brick Works (Asset 190) and a former woodland (Asset 210) has been identified.
- 8.12.4 Impacts upon the settings of designated assets such as World Heritage Sites, Listed Buildings, Scheduled Monuments, Conservation Areas, Inventoried Battlefields and Inventoried Gardens and Designed Landscapes are a material consideration in the planning process. This assessment has identified all designated heritage assets within 3km of the Site and the ZTV (**Figure 8.3**).
- 8.12.5 Operational effects include potential effects upon the settings or character of designated assets such as Listed Buildings, Scheduled Monuments, GDLs, and Conservation Areas (note there are no Inventory Battlefields or World Heritage Sites located within the Study Areas). No direct effects upon designated or non-designated assets are anticipated during the operational phase.
- 8.12.6 This assessment has established that the Proposed Development would have a **Moderate** Level of effect upon the setting of the St Orland's Stone (Asset 2 and Haughs of Cossans Farmhouse (Asset 148), **Minor** Level of Effect on Glamis Castle GDL (Asset 16), a **Negligible** level of Effect on nine designated assets (Assets 3, 6, 9, 11, 48, 66, 120 and 148-156), a **Neutral** effect upon seven designated assets (Assets 5, 13, 21, 46, 108, 122 and 157) and no effect upon the remaining designated assets.



Mitigation

- 8.12.7 Given the archaeological potential of the Site and the potential effect upon known non-designated heritage assets and in accordance with national and local planning policies on heritage, an archaeological programme of works will be required in advance of the construction of the Proposed Development. This will allow for recording of any archaeological deposits associated with known remains and investigate the potential for previously unknown assets as well as plan for the potential for hitherto unknown remains to be identified by the construction team. Potential effects on unknown and previously unrecorded buried remains cannot be predicted at this stage.

Residual Effects

- 8.12.8 The implementation of the above mitigation measures will allow for recording of any archaeological deposits associated with known remains and investigate the potential for previously unknown assets as well as plan for the potential for hitherto unknown remains to be identified by the construction team. Potential effects on unknown and previously unrecorded buried remains cannot be predicted at this stage, although any such impacts are also addressed by the committed mitigation measures, and it is judged to be unlikely that they will exceed the EIA significance threshold.
- 8.12.9 The predicted residual effects on the settings and character of designated heritage assets will be the same as assessed for the operational effects.



Table 8-7: Summary Table

Description of Effect	Significance of Potential Effect		Mitigation Measures	Significance of Residual Effect	
	Significance	Beneficial / Adverse		Significance	Beneficial / Adverse
During Construction & Decommissioning					
Direct impacts to known heritage assets	Moderate	Adverse	Implementation of archaeological works and preservation by record	Minor	Adverse
Direct impacts to unknown heritage assets	Moderate	Adverse	Implementation of archaeological works and preservation by record	Minor	Adverse
During Operation					
Setting effects on designated heritage assets	Moderate	Adverse	No direct mitigation is possible for setting effects (beyond embedded mitigation by design) and therefore residual effects on the setting of heritage assets would be the same as predicted for the operational phase	Moderate	Adverse
Setting effects on designated heritage assets	Minor	Adverse	No direct mitigation is possible for setting effects (beyond embedded mitigation by design) and therefore residual effects on the setting of heritage assets would be the	Minor	Adverse



Description of Effect	Significance of Potential Effect		Mitigation Measures	Significance of Residual Effect	
	Significance	Beneficial / Adverse		Significance	Beneficial / Adverse
			<i>same as predicted for the operational phase</i>		
<i>Setting effects on designated heritage assets</i>	<i>Negligible</i>	<i>n/a</i>	<i>No direct mitigation is possible for setting effects (beyond embedded mitigation by design) and therefore residual effects on the setting of heritage assets would be the same as predicted for the operational phase</i>	<i>Negligible</i>	<i>n/a</i>
<i>Setting effects on designated heritage assets</i>	<i>Neutral</i>	<i>No effect</i>	<i>None</i>	<i>No effect</i>	<i>No effect</i>
<i>Setting effects on designated heritage assets</i>	<i>No effect</i>	<i>No effect</i>	<i>None</i>	<i>No effect</i>	<i>No effect</i>
Cumulative Effects					
<i>Direct impacts to unknown heritage assets</i>	<i>Moderate</i>	<i>Adverse</i>	<i>No direct mitigation is possible for setting effects (beyond embedded mitigation by design) and therefore residual cumulative effects on the setting of heritage assets would be the same as predicted for the operational phase</i>	<i>Moderate</i>	<i>Adverse</i>



Description of Effect	Significance of Potential Effect		Mitigation Measures	Significance of Residual Effect	
	Significance	Beneficial / Adverse		Significance	Beneficial / Adverse
<i>Direct impacts to unknown heritage assets</i>	<i>Minor</i>	<i>Adverse</i>	<i>No direct mitigation is possible for setting effects (beyond embedded mitigation by design) and therefore residual cumulative effects on the setting of heritage assets would be the same as predicted for the operational phase</i>	<i>Minor</i>	<i>Adverse</i>
<i>Setting effects on designated heritage assets</i>	<i>Negligible</i>	<i>n/a</i>	<i>No direct mitigation is possible for setting effects (beyond embedded mitigation by design) and therefore residual effects on the setting of heritage assets would be the same as predicted for the operational phase</i>	<i>Negligible</i>	<i>n/a</i>



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