

Shannon Technology and Energy Park (STEP) Power Plant

Environmental Impact Assessment Report - Volume 2

Chapter 12 Cultural Heritage

Shannon LNG Limited

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12. Cultural Heritage

12.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) describes the likely significant effects upon the archaeological and architectural heritage resources from the Proposed Development. It also reports on the resultant residual effects in accordance with the requirements of the relevant EIA legislation and guidance as outlined in **Section 12.3**.

The Site is located in the townlands of Kilcolgan Lower and Ralappane, between Tarbert and Ballylongford, Co. Kerry. The application Site boundary ('red line') encloses an area of approximately 41 hectares (ha) and is entirely owned by the Applicant.

Full details on the background, Site history and the Proposed Development is provided in **Chapter 02** (Description of the Proposed Development) of this EIAR and the Planning Statement submitted with this planning application.

12.2 Competent Expert

David Kilner BA (Hons), PG Dip, MSc, MIAI has over 20 years' experience in the heritage and archaeological sector working all over Ireland. His experience covers a range of projects, from planning advice to archaeological baseline research and Environmental Impact Assessment (EIA) to procuring and managing archaeological specialists and sub-contractors undertaking field survey.

12.3 Legislation and Policy

This EIAR has been undertaken in accordance with all relevant legislation, policies and guidelines. The documents utilised in the preparation of this assessment include:

- National Monuments Act 1930 (as amended).
- The Historic and Archaeological Heritage and Miscellaneous Provisions Act (2023). The Act repeals the National Monuments Acts 1930 to 2014 and replaces those Acts with new provisions for heritage protection. It modernises historic and archaeological heritage legislation, providing for a single integrated licencing system and statutory codes of practice. It confers legal protections on new finds of archaeological sites and sets out a civil enforcement system to be used as an alternative to, or to supplement criminal proceedings. It also provides for the State to ratify some key international conventions in the area of heritage protection. In particular, it gives effect to the EIA directive in relation to the carrying out of works at, on, in, under, to or within the immediate surroundings of monuments. Sections dealing with EIAR in regard to monuments are contained in Part 2 Chapter 6, while EIAR in relation to the issuing of guidelines and matters relating to Historic Heritage can be found in Part 9. Both were considered in the preparation of this chapter.
- Record of Monuments and Places (RMP) established under Section 12 of the National Monuments (amendment) Act 1994.
- Planning and Development Act 2000 (as amended).
- Heritage Act 1995; Architectural Heritage (national inventory).

- Historic Monuments (miscellaneous provisions) Act 1999.
- Kerry County Development Plan (Kerry CDP) 2022-2028.
- Department of Arts, Heritage and the Gaeltacht (DAHG) (1999a). *Frameworks and Principles for the Protection of the Archaeological Heritage*.
- Department of the Environment, Heritage and Local Government (DEHLG) (2004) (revised DAHG 2011). *Architectural Heritage Guidelines for Planning Authorities*.

Local planning policy within the study area is contained within the Kerry County Development Plan (CDP) 2022-2028. There are a large number of strategic objectives providing a framework for development which may affect heritage assets. These are laid out in chapter 8 of the Kerry CDP and deal with both archaeological and architectural heritage. Those archaeological strategic objectives most pertinent to the Proposed Development are as follows:

- **KCDP 8-24:** (i) Secure the preservation in situ of all sites, features, protected wrecks and objects of archaeological interest within the county. In securing such preservation the Council will have regard to the advice and recommendations of the National Monuments Service (NMS), Department of Housing, Local Government and Heritage (DHLGH), the National Museum of Ireland, and the County Archaeologist.

(ii) Ensure that proposed development (due to location, size, or nature) which may have implications for the archaeological heritage of the county will be subject to an Archaeological Assessment (including Underwater Archaeological Impact Assessment) which may lead to further subsequent archaeological mitigation – buffer zones / exclusion zones, monitoring, pre-development archaeological testing, archaeological excavation and/or refusal of planning permission. This includes areas close to archaeological monuments, development sites which are extensive in area (half hectare or more) or length (1 km or more) or include potential impacts on underwater cultural heritage and development that requires an Environmental Impact Assessment.
- **KCDP 8-25:** Ensure the protection and preservation of archaeological monuments, wrecks and features, not yet listed in the Record of Monuments & Places (RMP), Sites & Monuments Record (SMR) or Wreck Inventory of Ireland Database and such unrecorded, through on-going review of the archaeological potential of the plan area. In securing such protection the council will have regard to the advice and recommendations of The National Monuments Service, Department of Housing, Local Government and Heritage, and the County Archaeologist.
- **KCDP 8-26:** Protect and preserve and promote the underwater archaeological heritage of the county. In assessing proposals for development, the Council will take account of the Archaeological Potential of rivers, lakes, intertidal and sub-tidal environments. Where flood relief schemes are being undertaken the Council will have regard to the Archaeological Guidelines for Flood Relief Schemes (DHLGH and OPW 2021).
- **KCDP 8-27:** Ensure that development (including forestry, renewable energy developments and extractive industries) within the vicinity of a recorded monument, zone of archaeological potential or archaeological landscape does not detract from the setting of the feature and is

sited and designed appropriately and sympathetically with the character of the monument / feature / landscape and its setting.

- **KCDP 8-30:** Protect and preserve the industrial, military, maritime, riverine, lacustrine and post-medieval archaeological heritage of the county as reflected in such sites as mills, lighthouses, harbours, Valentia cable station, gun batteries, towers, and demesnes. Proposals for refurbishment, works to or redevelopment of these sites should be subject to a full architectural and archaeological assessment including, where appropriate, Underwater Archaeological Impact Assessment.
- **KCDP 8-33:** Continue to research and record the archaeological heritage of the county and to promote the timely public access to the results of archaeological research and excavation.

The **architectural** strategic objectives most pertinent to the Proposed Development are as follows:

- **KCDP 8-38:** Seek the retention and appropriate repair and upgrading of historic, buildings, structures, road bridges, railway bridges and tunnels throughout the county, subject to environmental assessment.

Record of Protected Structures (RPS)

- **KCDP 8-40:** Ensure that any development, modification, alteration, or extension affecting a protected structure and/or its setting including designed landscape features and views, is compatible with the special character of that structure.

Architectural Conservation Areas (ACA)

- **KCDP 8-44:** Ensure developments in an ACA have a positive impact on the intrinsic character of the area, respect the existing streetscape and layout, and are compatible in terms of design, materials, traffic, views, and intensity of site use.

The strategic objectives relating to **Historic Landscapes** most pertinent to this project are as follows:

- **KCDP 8-49:** Carry out further research and analysis to identify, survey and promote the conservation of historic landscapes in Kerry.
- **KCDP 8-50:** Require that proposals for development within historic designed landscapes be sensitive to and respect the built heritage elements and green space values of the site.

12.4 Methodology

12.4.1 Sources of Information

The preparation of the baseline was informed by material gathered and collated from various sources, including:

- National Monuments Service (NMS) and Archaeological Survey of Ireland (ASI).
- National Inventory of Architectural Heritage (NIAH).
- Kerry County Development Plan 2022-2028, Record of Protected Structures.
- Geological Survey of Ireland (GSI).
- The National Map Library, Trinity College, Dublin.

Online sources were also consulted, including Ordnance Survey Ireland (OSI) historic mapping, toponym information and Heritage Council of Ireland mapping.

The Site of the Proposed Development was previously subject to an EIA Planning Permission (No. 08PA0002 which has since expired) with associated comprehensive archaeological fieldwork and testing. This information has also greatly contributed to the gathering of the baseline assessment.

In addition to the gathering of comprehensive baseline information, a preliminary visit was undertaken on 5th December 2019 regarding a previous planning application directly on the lands for the Proposed Development. This was followed by a Site visit on 22nd January 2020 in order to identify any previously unidentified cultural heritage assets that might exist within the Site, and to assess the current ground conditions and the extent of any previous ground disturbance. The visit also assessed the potential impact of the Proposed Development on the setting of selected cultural heritage assets in the settings assessment study area.

A survey of the foreshore area was undertaken on 26th March 2021 for the previous planning application after consultation with the Development Applications Unit (DAU) of the Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media (DTCAGSM). The purpose of that survey was to update the results of the Underwater Archaeological Impact Assessment previously undertaken in 2007 and assess if any cultural heritage had been revealed within the footprint of the revised Proposed Development during the intervening 14 years. In line with DAU recommendations, the survey concentrated upon the parts of the foreshore which will be the focus of disturbance for the outfall works or the movement of plant and machinery.

A follow up Site visit took place on 13th June 2023. The purpose of this visit was to verify baseline conditions specifically applicable to the current Site, in particular, with regard to the condition of the known heritage assets within the Site boundary, that may have altered in the three years since the previous visit. Attention was also paid to recorded heritage immediately adjacent to the Proposed Development.

A marine survey of the foreshore area was undertaken on 19th February 2024 with a marine geophysical survey undertaken 26th February 2024 after consultation with the DAU of the Department of Housing, Local Government and Heritage (DLGH) in May 2023.

12.4.2 Asset Selection and Study Area

A study area of 2 km from the Site boundary was employed to identify Protected Structures, Recorded Monuments, National Monuments, Monuments in State Care, Monuments with Preservation Orders and Architectural Conservation Areas. The 2 km study area was also used to identify structures and designed landscapes listed on the National Inventory of Architectural Heritage which have not been put forward as Protected Structures.

This study area is illustrated on **Figure F12.1**, Volume 3 and has been utilised to produce a figure illustrating the surrounding cultural heritage assets. Heritage data from the sources listed above has been collated from this 2 km buffer. The size of this study area enabled a detailed examination of the heritage assets surrounding the Site, in order to provide sufficient archaeological and historical contextual information and allow an assessment of the archaeological potential of the site to be made.

Additionally, an assessment of setting was made for designated heritage assets (Protected Structures, National Monuments, Recorded Monuments and sites on the Register of Historic Monuments, and Architectural Conservation Areas) within the 2 km study area with regard also paid to any other highly visible assets outside this, refer to **Section 12.5.2**. There are no other highly visible assets outside the 2 km study area. This includes within the nearby counties of Limerick and Clare to the east and north respectively.

12.4.3 Assessment of Heritage Asset Importance

A Cultural Heritage asset is defined as a 'monument, building, group of buildings and sites which are the combined works of nature and man constituting the historic or built environment' (World Heritage Convention 1972). A heritage asset's value is not solely expressed through any designated status but can also be exhibited through a series of values or special interests. These include architectural, historical, artistic, archaeological, cultural, scientific, social or technical interests. There is the potential for non-designated assets to display special interests equivalent to a designated asset. Therefore, a 'designated' status does not necessarily confer a set level of importance on an asset, rather professional judgement and an assessment of the special interest displayed by that asset are examined and a level of importance is assigned.

Section 2 of the 1930 National Monuments Act defines a 'national monument' as 'a monument or the remains of a monument the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic, or archaeological interest attaching thereto.' National Monuments are considered nationally important.

National Monuments and Record of Monuments and Places (RMP) sites / Register of Historic Monuments (RHM) sites are not clearly differentiated in the National Monuments Act 1930-2004. However, not all RMP and RHM sites and associated constraint areas demonstrate the same level or degree of heritage special interest as can be found in National Monuments. Therefore, they can be of either national or regional importance. An assessment of the special interest of the asset and professional judgement is used to identify the appropriate level of importance.

Some archaeological and architectural heritage assets are also included on the Record of Protected Structures (RPS) of each county or city development plan, under section 51(1) of the Planning and Development Act, 2000 (as amended). These protected structures are included in the RPS due to their special architectural, archaeological, artistic, cultural, historical, scientific, social or technical interest. Protected structures are considered to be of international, national or regional importance.

Townlands are the lowest level, officially defined geographical area in Ireland and date to before the Anglo-Norman period (12th century). The boundaries of townlands are often visible in the landscape as walls, tree-lined ditches and embankments or natural features such as streams. They provide visible physical evidence of historical territory or political boundaries and are regarded as being of local importance as historic, cultural heritage features.

12.4.4 Assessment Methodology

The assessment of baseline conditions was carried out in accordance with the following guidance:

- European Commissions (EC) (2017). *Guidance on the preparation of the Environmental Impact Assessment Report*.
- Environmental Protection Agency (EPA) (2022). *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*.
- Government of Ireland (GOI) (2018). *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*.
- Department of Arts, Heritage and the Gaeltacht (DAHG) (1999a). *Frameworks and Principles for the Protection of the Archaeological Heritage*.
- Department of the Environment, Heritage and Local Government (DEHLG) (2004) (revised DAHG 2011). *Architectural Heritage Guidelines*.
- National Road Authority (NRA) (2005). *Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes*.
- NRA (2005). *Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes*.
- Historic Environment (HE) (2017). *Historic Environment Good Practice Advice in Planning: Note 3 (Second Edition) – The Setting of Heritage Assets*.

12.4.5 Impact Assessment Methodology

Designated Heritage assets – Protected Structure and non-designated Heritage assets including recorded monuments, structures and designed landscapes recorded by the NIAH within 2 km of the study area were assessed.

Two Protected Structures, 23 Recorded Monuments and a planned landscape were assessed using aerial / satellite imagery and mapping. Sites which were evidently screened by intervening modern development or dense vegetation were scoped out. Other sites, which by their nature will not be impacted upon by development some distance away, such as archaeological sites discovered through archaeological excavation, or screened by intervening vegetation were also scoped out.

A total of three cultural heritage assets - Ralapane House (RPS-KY-0888), Lookout Post (RP- KY-0877) and Lislaughtin Abbey (NM No. 258) which were considered to be potentially sensitive to the Proposed Development were visited as closely as possible from publicly accessible locations. Their settings and how it contributes to their importance were assessed. The Proposed Development was found to be screened from these assets by topography, or multiple areas of dense vegetation. Furthermore, it was concluded that the location of the Proposed Development does not contribute to the importance of these assets.

12.4.6 Setting Assessment Methodology

This assessment has been guided by Historic England's (2017) *Historic Environment Good Practice Advice in Planning: Note 3 (Second Edition) - The Setting of Heritage Assets*. The Setting of Heritage Assets provides guidance on setting and development management, including assessing the implications of development proposals, a counterpart to which is not available in Ireland.

A staged approach is recommended for settings assessments, the first step of which is to identify the settings of the cultural heritage assets that may be affected. The second step is to assess whether, how and to what degree these settings make a positive contribution to the importance of the heritage asset(s), *i.e.*, 'what matters and why.' This includes a description of the key attributes of the cultural heritage asset itself, then consider the physical surroundings of the asset, including its relationship with other heritage assets; the way the cultural heritage asset is appreciated; and the asset's associations and patterns of use. The third step (where appropriate) is to assess the effect of the proposed development on the significance of assets through the consideration of the key attributes of the proposed development in terms of its location and siting; form and appearance; additional effects; and permanence.

The assessment methodology has also been guided by the Department of the Environment, Heritage and Local Government's (DEHLG) *Architectural Heritage Protection, Guidelines for Planning Authorities*, published in 2004 and revised in 2011 (DAHG, 2011). This contains the relevant guidance which is detailed below. It is important to note that paragraph 13.8.1 of the guidance states that proposed development outside the curtilage or grounds of a protected structure or ACA should be given similar consideration as for proposed development within the attendant grounds. This methodology has been combined with the Historic England methodology (HE, 2017), in order to conduct a similar and more robust assessment of the impacts of the proposed development on recorded archaeological monuments, in addition to architectural heritage.

Paragraph 13.7.1 from the Department of the Arts Heritage and the Gaeltacht *Architectural Heritage Protection, Guidelines for Planning Authorities* (DAHG, 2011) states:

'Development Within the Attendant Grounds

13.7.1 It is essential to understand the character of a site before development proposals can be considered. Where attendant grounds of particular significance are proposed for development, a conservation plan could be prepared in advance of any planning application which will identify the significance of the site and locate areas within the designed landscape, if any, which could accept change and development and those areas which could not without damaging the architectural heritage of the place.

13.7.2 When dealing with applications for works within the attendant grounds of a protected structure, a visit to the site should be considered an essential part of the assessment. The planning authority should consider:

- a) Would the development affect the character of the protected structure?*
- b) Would the proposed works affect the relationship of the protected structure to its surroundings and attendant grounds?*
- c) Would the protected structure remain the focus of its setting? For example, a new building erected between a structure and a feature within the attendant grounds will alter the character of both;*
- d) Do the proposed works require an alteration of the profile of the landscape, for example, the creation of a golf course? How would this affect the character of the protected structure and its attendant grounds?*

e) Do the proposals respect important woodland and parkland? Do they conserve significant built features and landscape features?

f) Are there important views of or from the structure that could be damaged by the proposed development? Would important vistas be obstructed by new development?

g) Would distant views of important architectural or natural landmarks be blocked or changed? Would a significant skyline be altered?

h) Even where the proposed development is at a distance from the protected structure, could it still have an impact? This could include tall or bulky buildings interrupting views of or from the protected structure and other features of the designed landscape.

i) Where the new works would not be directly visible from the protected structure, would they be visible from the approaches to the structure or from other important sites or features within the attendant grounds? If so, would this be acceptable?

j) What effect would the scale, height, massing, alignment or materials of a proposed construction have on the protected structure and its attendant grounds?

Other Development Affecting the Setting of a Protected Structure or an Architectural Conservation Area (ACA)

13.8.1 When dealing with applications for works outside the curtilage and attendant grounds of a protected structure or outside an ACA which have the potential to impact upon their character, similar consideration should be given as for proposed development within the attendant grounds. A visit to the site should be considered an essential part of the assessment.

13.8.2 New development both adjacent to, and at a distance from, a protected structure can affect its character and special interest and impact on it in a variety of ways. The proposed development may directly abut the protected structure, as with buildings in a terrace. Alternatively, it may take the form of a new structure within the attendant grounds of the protected structure. A new development could also have an impact even when it is detached from the protected structure outside the curtilage and attendant grounds but is visible in an important view of or from the protected structure.

13.8.3 The extent of the potential impact of proposals will depend on the location of the new works, the character and quality of the protected structure, its designed landscape and its setting, and the character and quality of the ACA. Large buildings, sometimes at a considerable distance, can alter views to or from the protected structure or ACA and thus affect their character. Proposals should not have an adverse effect on the special interest of the protected structure or the character of an ACA.'

The setting assessment methodology has also utilised the guidance contained within 'Cork County Council's *Guidance Notes for the Appraisal of Historic Gardens, Demesnes, Estates and their Settings*' (Cork Co. Co. (2006)). This document was prepared by Cork Co. Co. in response to increasing adaptation and redevelopment of planned landscapes within the county.

The guidance notes advise the following stepped approach:

- Identification and description of development, history, features and boundaries of the designed landscape using scoping, archival research and fieldwork.

- Evaluation & assessment of significance including historical landscape description, archaeological and horticultural aspects.
- Assessing development proposals through an assessment of the heritage impact.
- Recommendations for mitigation & management including future research.

12.4.7 Consultation

The previous Strategic Infrastructure Development (SID) application (ABP-311233-21) was subject to extensive consultation, including the DAU (DHLGH). The results of the relevant consultation are presented in **Table 12.1**.

Table 12.1: Statutory Consultation

Name and Organisation	Date	Method	Outcome
National Monuments Services (NMS)	04.05.2023	Letter Consultation and Meeting held with Dr. Coilin O'Driscoll and Teresa Bolger. 22.05.2023	Dr. Coilin O'Driscoll highlighted that a research intertidal archaeological study was undertaken in the Shannon Estuary by the Discovery Programme that identified archaeological artifacts of national significance and suggested that a renewed foreshore metal detector survey and marine Geophysical Survey be undertaken as part of the application. A Marine Geophysical Survey and Foreshore Metal Detector Survey was undertaken during 12 th – 16 th February 2024 and the results are discussed in Chapter 12.

12.4.8 Determination of Sensitive Receptors

A heritage asset's value is not solely expressed through any designated status but can also be exhibited through a series of values or special interests. These include architectural, historical, artistic, archaeological, cultural, scientific, social or technical interests. In order to assess the potential effects of a development upon a heritage asset, it must first be assigned a level of importance. This can be done in accordance with a four-point scale, refer to **Table 12.2**. This table has been derived with reference to the legislation, policy and guidance, and using professional judgement.

Table 12.2: Factors Determining the Value of Heritage Assets

Importance	Criteria
International / Very High	<ul style="list-style-type: none"> • World Heritage Sites. • Protected structures deemed to be of very high importance using legislation, EPA guidance, NIAH rating criteria and professional judgement. • Structures and Designed Landscapes recorded by the NIAH. • Building and Garden Survey with an International Rating.
National / High	<ul style="list-style-type: none"> • National Monuments. • Recorded Monuments deemed to be of high importance using legislation, EPA guidance, NRA Significance Criteria and professional judgement. • Protected structures deemed to be of high importance using legislation, EPA guidance, NIAH rating criteria and professional judgement. • Structures recorded by the NIAH Building Survey with a National Rating or deemed to be of high importance using legislation, EPA guidance, NIAH rating criteria and professional judgement. • Designed landscapes recorded by the NIAH Garden survey with main features substantially present and deemed to be of high importance using legislation, EPA guidance, NIAH rating criteria and professional judgement. • ACAs containing structures and / or designed landscapes of predominantly national importance.

Importance Criteria

	<ul style="list-style-type: none"> Undesignated archaeological remains which are rare or complex in nature, and deemed to be of high importance using legislation, EPA guidance, NRA Significance Criteria and professional judgement.
Regional / Medium	<ul style="list-style-type: none"> Recorded Monuments deemed to be of medium importance using legislation, EPA guidance, NRA Significance Criteria and professional judgement. Protected structures deemed to be of medium importance using legislation, EPA guidance, NIAH rating criteria and professional judgement. Structures recorded by the NIAH Building Survey with a Regional Rating or deemed to be of medium importance using legislation, EPA guidance, NIAH rating criteria and professional judgement. Designed landscapes recorded by the NIAH garden survey with main features substantially present and deemed to be of medium importance using legislation, EPA guidance, NIAH rating criteria and professional judgement. Architectural Conservation Areas (ACAs) containing structures and/ or designed landscapes of predominantly regional importance. Undesignated architectural heritage assets which are deemed to be of medium importance using legislation, EPA guidance, NIAH rating criteria and professional judgement. Undesignated archaeological remains which are neither particularly common nor uncommon, and/ or of moderate complexity, and deemed to be of medium importance using legislation, EPA guidance, NRA Significance Criteria and professional judgement.
Local / Low	<ul style="list-style-type: none"> Structures recorded by the NIAH Building Survey with a Local or Record Only Rating or deemed to be of low importance using legislation, EPA guidance, NIAH rating criteria and professional judgement. Designed landscapes recorded by the NIAH garden survey with only peripheral features surviving, and deemed to be of low importance using legislation, EPA guidance, NIAH rating criteria and professional judgement. Townland Boundary Features. Undesignated architectural heritage assets which are deemed to be of low importance using legislation, EPA guidance, NIAH rating criteria and professional judgement. Undesignated archaeological features which are particularly common or in poor condition, and deemed to be of low importance using legislation, EPA guidance, NRA Significance Criteria and professional judgement. Parks / Gardens / Demesnes recorded by the NIAH Garden Survey which have poor historic legibility. Undesignated architectural heritage assets. Undesignated archaeological features which are particularly common or in poor condition.

12.4.9 Describing Potential Impacts

Having identified the value of the heritage asset, the magnitude of the impact from the Proposed Development is assessed. Potential impacts are defined as a change resulting from the Proposed Development which affects a heritage asset. These impacts are considered using the broad categories quality, extent and context, probability, significance and duration (EPA, 2022).

The quality can be reported on a three-point scale:

- Positive:** a change which improves the quality or the special interests of the asset, for example the removal of an element of the surrounding setting which detracts from the appreciation of an asset.
- Neutral:** a change which does not affect the quality or special interests of the asset.
- Negative / Adverse:** a change which reduces the quality or special interest of the asset, for example the removal of a below ground archaeological deposit through construction.

The extent and context can be assessed by the following two descriptions:

- Extent:** the description of the size of the area and number of assets affected.

- **Context:** the description whether the extent, duration, or frequency will conform or contrast with established baseline conditions relating to an asset.

The probability can be described by the following:

- **Likely:** these are effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
- **Unlikely:** these are effects than can reasonably be not expected to occur because of the planned project if all mitigation measures are properly implemented.

The duration can be defined by the following criteria:

- **Momentary:** lasting from seconds to minutes.
- **Brief:** lasting for a day or less.
- **Temporary:** lasting for one year or less.
- **Short-term:** lasting one to seven years.
- **Medium-term:** lasting seven to fifteen years.
- **Long-term:** lasting fifteen to sixty years.

Impacts can also be identified as permanent, *i.e.*, lasting over sixty years and reversible, *i.e.*, can be reversed through remediation or restoration. Another consideration is the frequency, *i.e.*, how often the effect will occur once, rarely, occasionally, frequently, constantly - or hourly, daily, weekly, monthly, annually.

These impacts have been derived from the EPA's 2022 '*Guidelines for the Information to be Contained in an Environmental Impact Assessment Reports*' and as outlined in **Chapter 01** (Introduction). The effect upon the setting of an asset is also taken into account.

An overall magnitude of impact is then arrived at without reference to the value of the asset. **Table 12.3** provides the magnitude of impact criteria used. The magnitude of impact takes into account control measures which have been embedded within the Proposed Development as part of the design process.

Table 12.3: Factors Determining the Magnitude of Impact

Magnitude	Description
Very High	Change such that the special interests or qualities of the asset are totally altered or destroyed. Comprehensive change to setting affecting importance of asset, resulting in a serious loss in our ability to understand and appreciate the asset.
High	Change such that the special interests or qualities of the asset are affected. Noticeably different change to setting affecting importance, resulting in erosion in our ability to understand and appreciate the asset.
Medium	Change such that the special interests or qualities of the asset are slightly affected. Slight change to setting affecting significance resulting in a change in our ability to understand and appreciate the asset.
Low	Minimal change to the asset that has little effect on its special interests or qualities. Does not affect our ability to understand and appreciate the asset.

12.4.10 Significance of Effects

Once the magnitude of the impact has been identified, this can be cross-referenced with the importance of the asset to derive the overall significance of effects, or the consequence of the change resulting

from the Proposed Development, refer to **Table 12.4**. The significance can be judged on a seven-point scale:

- **Imperceptible:** a change capable of measurements but without significant consequences.
- **Not significant:** an effect which causes noticeable changes in the character of the asset but without significant consequences.
- **Slight effect:** an effect which causes a noticeable change without affecting the special interests or qualities of the asset to any particular degree.
- **Moderate effect:** a change which alters the character or special qualities of an asset in a manner that is consistent with existing and emerging baseline trends.
- **Significant effect:** an effect, which by its character, magnitude, duration or intensity, alters the special interests or qualities of an asset.
- **Very significant:** an effect which by its character, magnitude, duration or intensity significantly changed the special interests or qualities of an asset.
- **Profound impact:** an effect which obliterates the special interest or qualities of an asset.

Table 12.4: Significance of Effect Matrix

Magnitude of Effect	Importance of Cultural Heritage Asset			
	Local	Regional	National	International
Very High	Significant	Significant	Profound	Profound
High	Moderate	Significant	Significant	Profound
Medium	Slight	Moderate	Significant	Significant
Low	Imperceptible	Slight	Slight	Moderate

Source: EPA, 2022

This chapter considers that moderate to profound effects are classed as significant. Once a significant effect has been identified, additional mitigation can be used to offset, reduce or compensate for any significant adverse effects, or to enhance positive effects. Reassessing the significance after applying additional mitigation reflects the success rating of the mitigation and allows the level of residual effect and impact to be assessed.

12.4.11 Limitations and Assumptions

The assessment is based upon currently available information at the time of writing including the current surveys, previous surveys and on a walkover survey of the study area. The previous surveys are considered relevant, robust and representative.

12.5 Baseline Environment

12.5.1 Site Location

The Proposed Development will be located on the Shannon Estuary, approximately 4.5 km from Tarbert and 3.5 km from Ballylongford, Co. Kerry.

12.5.2 Site Visit and Topography

Site visits to the Proposed Development lands was undertaken on 5th December 2019, 22nd January 2020 and the 13th June 2023 by members of the AECOM Environment team accompanied by a representative of the Applicant.

The Site had been subject to archaeological testing in 2008 with multiple areas of activity had been uncovered (Long & O'Malley, 2009). These areas of archaeological activity had been noted but remain unresolved with the archaeology remaining in situ within the Site. The purpose of this Site visit in June 2023 was to assess the current ground conditions with regard to the locations of these areas of activity ascertaining / confirming that no subsequent disturbance had taken place since the visit in January 2020.

The Site had been subject to a detailed walkover in 2006 by Sheila Lane & Associates to inform previous studies for the Site (Lane, 2006). The report from this described the topography within the Site as generally undulating and boggy in places with the fields bordering the estuary to the north tending to slope steeply down to the shoreline. The land use in the area was described as predominantly pastoral with fields bounded by hedgerows consisting of low earthen banks planted with whitethorn hedge and trees. Pockets of wetland were also noted.

The Site visit on 13th June 2023 noted that the topography of the Site has not changed since the Site visit in 2020 or, indeed, when the 2007 EIS was prepared. There were no visible signs of the extensive archaeological trenching that had been conducted in 2008. The land use is still predominantly marginal pastoral with the fields bounded by hedgerows (**Photograph 12.1**; Appendix A12.2 Volume 4). This includes the area which occupies the north-eastern part of the Site (**Photograph 12.2**; Appendix A12.2 Volume 4). The Site is bounded to the north-east by a plantation of mature fir trees.

The Above Ground Installation (AGI) will be located in the south-east extent of the Site. The terrain within this area consists of level marginal pasture (**Photograph 12.3**; Appendix A12.2 Volume 4). A ringfort (KE003-004) is located on the site boundary at this location although there are no visible above ground remains (**Photograph 12.4**; Appendix A12.2 Volume 4).

The terrain within the footprint of the Site slopes downhill to the north and the shoreline. A small concrete structure with flat roof and wide aperture opening looking seawards is located adjacent to the north-east extent of the Site and outside the red line boundary (**Photograph 12.5**; Appendix A12.2 Volume 4). This structure is RPS-KY-0877, which has been identified named as a Lookout Post, however, it is actually a searchlight chamber and part of Fort Shannon Coast Defence Artillery installation which was constructed in 1941 during the Second World War (Dargan, 2017). The Site visit identified the remains of a searchlight within the chamber. The Protected Structure is located just outside the Site boundary and will not be physically impacted by the Proposed Development. Similarly, other remains of the associated Fort Shannon Coast Defence Artillery installation are present to the east of the Proposed Development. These are not visible from the Proposed Development and will not be physically impacted.

The proposed secondary fuel storage will be located within the eastern extent of the Power Plant (**Photograph 12.6**; Appendix A12.2 Volume 4). The terrain within this area is level, generally sloping gently downhill to the north and the coast. Recorded heritage within this area comprise assets recorded

during the previous ES in 2007. These are CHS7 Gun Emplacement (**Photograph 12.7**; Appendix A12.2 Volume 4) and CHS15 Structure (**Photograph 12.8**; Appendix A12.2 Volume 4). These buildings were subject to Upstanding Building Survey in 2008, as conditions upon Planning Permission (Condition 32 C 08.PA0002) and are now considered resolved with the planning condition met (Lane, 2012).

The foreshore between Knockinglas Point and Ardmore Point, within the Site, was subject to an intertidal survey as part of the previous EIS in 2007. No signs of possible intertidal archaeological features were noted within the footprint of the Proposed Development. A renewed intertidal survey was undertaken in March 2021 to assess if any cultural heritage has been revealed during the intervening time since 2007. Nothing of archaeological significance was noted and the condition of the foreshore was similar to that observed in 2007, with no evidence for erosion or change. A proposed outfall pipe will be located along the foreshore and this location was revisited in June 2023. The terrain within this location comprises exposed bedrock with the ground rising vertically at the upper foreshore (**Photograph 12.9**; Appendix A12.2 Volume 4). No obvious indications for previously unrecorded heritage assets were noted at this location.

The Power Plant will occupy the centre of the Site for the Proposed Development. This area is agricultural fields, with the terrain sloping gently downhill to the north and west. The fields to the north are under pasture and currently used for grazing cattle (**Photograph 12.10**; Appendix A12.2 Volume 4). The fields within the south of the Proposed Development had recently been cut at the time of the site visit with bales of hay present (**Photograph 12.11**; Appendix A12.2 Volume 4). Further to the west, the terrain starts to rise towards the higher ground of Knockinglas Point (**Photograph 12.12**; Appendix A12.2 Volume 4). Heritage assets recorded during the previous ES in 2007 comprise CHS5 possible archaeological feature and CHS6 Well. There are few visible remains associated with either.

A battery energy storage system (BESS) area is proposed to the immediate south-west of the Power Plant (**Photograph 12.13**; Appendix A12.2 Volume 4). This area comprises level marginal ground subdivided into small fields by mature hedging. The area slopes downhill to the west with this higher ground affording good views to the west (**Photograph 12.14**; Appendix A12.2 Volume 4). The BESS and construction compound / laydown area will be located within this north-western extent of the Site.

The south-western extent of the Proposed Development will comprise the main access road extending southeast from the laydown area to the L1010 road. A high voltage 220 kV substation will be located in a field immediately adjacent to the north-east of the access road. This area comprises fields of level pasture which slopes downhill to the west and the stream that forms the boundary between the townlands of Ralappane and Kilcolgan Lower (**Photograph 12.14**; Appendix A12.2 Volume 4). This stream is located outside the boundaries of the Proposed Development. The terrain continues as level pasture until the Proposed Development joins the L1010 road.

12.5.3 Geology

The underlying geology consists of sandstones and siltstones with thin layers of mudstone of the Shannon Group of Namurian age covered by soils comprising acid brown earths and peaty gleys locally occurring derived from Namurian era sandstones and shales, refer to **Chapter 05** (Land, Soils and Geology). Geotechnical investigations have found that bedrock generally occurs at a shallow depth beneath the site becoming increasingly shallow as it progresses eastwards across the development

(Arup, 2007). Bedrock outcrops are exposed in areas within the east of the development but, in general, it is covered by glacial drift.

12.5.4 National Monuments

There are no National Monuments within the boundaries of the Site or within the wider 2 km study area. The closest National Monument is Lislaughtin Abbey (NM No. 258) which is located 2.68 km to the south-west of the Proposed Development. This Franciscan house, recorded on the Record of Monuments and Places as KE003-016, was built by John O'Connor Kerry for the monks of the strict Observantine Rule and may be located on the site of an earlier church (KE003-016003) dating to the early medieval period.

Lislaughtin Abbey was destroyed in 1580 after the fall of Carrigfoyle Castle and three aged friars were murdered before the high altar. The abbey was reoccupied in 1629 but was sacked again in 1652 by Cromwellian troops. It is claimed that monks fleeing the abbey were caught by the soldiers in a nearby glen and had their ears cut off. The glen is still known as Gleann Cluasach or the 'glen of the ears'.

A fine processional cross (KE003-016002) was found in a field in 1871. This cross bears an inscription stating that it was made in 1479 at the bequest of Cornelius O'Connor who was the son of John O'Connor the builder of the abbey.

12.5.5 Record of Monuments and Places (RMP)

There is one asset recorded on the RMP partially within the boundary of the Proposed Development, refer to **Figure F12.1**, Volume 3. This is a ringfort (KE003-004) dating to the early medieval period and located within the northeast extent of the Proposed Development on rising ground that allows a commanding view of the surrounding ground.

It is marked on the 1st edition Ordnance Survey (OS) map sheet (1841-42) as a possible univallate ringfort which is bisected by the boundary between the townlands of Ralappane and Carhoonakineely. Subsequent OS map editions show that the majority of the asset within the townland of Carhoonakineely has been removed. This was corroborated by a site visit by the North Kerry Archaeological Survey in 1995 which found the upstanding remains to consist of a semi-circular earthen bank 22 m long, 0.4 m high and 5 m wide at its base. The ringfort has been truncated by the field bank forming the townland boundary.

The location of the ringfort was subject to archaeological testing in the form of geophysical survey (Nicholls, in Lane 2006) followed by archaeologically monitored trenching (Long & O'Malley, 2009). The geophysical survey identified an anomaly which was interpreted as the ditch of the ringfort. Subsequent archaeological trenching failed to locate this feature; however, a curvilinear feature and possible pits / post-holes were identified. Additionally, a large deposit of small and medium stones was uncovered and tentatively identified as the basal bank deposit of the levelled ringfort. A charcoal rich feature was also identified to the west of the ringfort suggesting further activity within this area.

Twenty-one further assets are recorded on the RMP within the 2 km study area around the Proposed Development. These are discussed in chronological order starting with the sites dating to the prehistoric period.

12.5.5.1 Prehistoric Period (7000 BC to 500 AD)

The earliest recorded assets within the study area date to the Bronze Age (2000 BC to 600 BC) consisting of a standing stone (KE003-020), a burnt mound (KE003-067) and a fulacht fia (KE003-066). The standing stone (KE003-020) is located 1,538 m to the south-east of the Proposed Development and consists of an irregularly shaped stone located on low-lying pasture and standing 1.6 m high, 1.25 m wide and 0.3 m thick. Packing stones are visible around the base.

The burnt mound (KE003-067) and fulacht fia (KE003-066) are located in close proximity to one another in the townland of Reenturk to the south-west of the Proposed Development. The burnt mound (KE003-067) is the closer of the two located 1,345 m to the south-west. It was recorded in 2013 within a north face of a drain located 20 m west of the east field fence and 30 m south of the north field fence. It consists of a layer of burnt soil and stone extending for 3.05 m. No burning was evident within the south face of the drain and no further burning was observed in adjacent drains.

An asset (KE003-065001), located 1,981 m to the south-west of the Proposed Development, was originally interpreted as a fulacht fia by the RMP in 1997. However, a subsequent site visit in 2006 noted occasional low irregular-shaped mounds between 0.3 m and 0.5 m high throughout the field. These were interpreted as natural features comprised of stiff clay, and not archaeological features. Given this, the asset (KE003-065001) has been reclassified as non-archaeological and a redundant record.

An actual fulacht fia (KE003-066) is located 141 m to the west of the previous sites and 2,078 m of the south-west of the Proposed Development. It is situated within a drain 20 m south of the north field boundary and 50 m east of the west field boundary. It consists of a shallow layer 0.2 m thick of burnt soil and stone which is apparent in both the faces of the drain while the excavated spoil also contained burnt soil, heat fractured stone and small quantities of charcoal. This asset was also discovered during fieldwork in 2013 and the field surveyor noted that the drain appeared to have cut through the most northerly section of a low mound 0.25 m high which extends 5.4 m further south and 7.4 m long. It conforms to the classic horseshoe shape associated with fulacht fia.

Further possible activity relating to the prehistoric period was uncovered within the boundaries of the Proposed Development during archaeological work associated with archaeological testing. This is discussed in **Section 12.5.10.5**.

12.5.5.2 Early Medieval Period (500 AD to 1100 AD)

The majority of assets recorded by the RMP within the study area are associated with the early medieval period. These consist of 11 ringforts, an ogham stone (KE003-070) and a holy well (KE003-018). Ringforts are the most numerous and recognisable archaeological feature within the Irish landscape consisting of one or more circular or oval banks enclosed by external ditches.

One ringfort (KE003-004) is partially located within the boundaries of the Proposed Development and has been discussed above. Two further ringforts are recorded to the immediate north-east of the Proposed Development. Both are recorded on the 1st edition OS Map sheet (1841) with no visible traces remaining today. The closer of these, (KE003-005), is located 132 m from the Proposed Development in an area that is now densely planted with trees. The asset is marked on the OS map as a circular enclosure labelled Cahergal or 'White Stone fort'. It is not marked on subsequent map editions.

The other ringfort (KE003-003) was located within a field overlooking the coast with excellent views in all directions. It is marked on the 1st edition OS Map sheet (1841) as a circular feature bisected with a west to east running field boundary and in an area labelled Ardmore or 'Great Height'. It is not shown on subsequent map editions and its location has been encroached by a quarry.

A ringfort (KE003-019002) is located at Glansillagh 1.67 m to the south-east of the Proposed Development. Known as Lissyhoneen or 'the ringfort of O Houneen', this asset consists of an earthen bank measuring 42 m north to south by 44 m east to west set within slightly undulating pasture with good views in all directions. Two small depressions measuring 2 m by 1.6 m and 1.8 m by 1.6 m respectively, were noted during a site inspection in 1995 and are suggestive of the remains of an associated collapsed souterrain (KE003-019001). This is the only indication for a souterrain within the 2 km study area although undiscovered examples may be present associated with the other recorded ringforts within the 2 km study area.

The Holy Well (KE003-018) is located 1.64 km to the south-east of the Proposed Development. It is marked on the 1st edition OS map sheet (1841) as 'Tobernaughtin' which translates as 'St Naughtin's Well'. The well was visited by O'Danachair in 1958 who recorded a small pool overhung by a clump of whitethorn trees (O'Danachair, 1958). However, the site now only consists of a scattering of stones at the bottom of a hill. An ogham stone (KE003-070) was recovered from the old churchyard of Kilnaughtin (KE003-008) 1.26 km to the south-east of the Proposed Development. This stone was found six feet from the south-east angle of the church and is now located in the Pitt-Rivers Museum at Oxford. The dimensions of the stone are 0.75 m x 0.15 m x 0.1 m and the fragmentary inscription was read as: -- MA]Q[!] BROCI.

The remaining ringforts within the 2 km study area are similar in nature to those already discussed and are detailed in **Table 12.5**. Further details are included in **Appendix A12.1**, Volume 4.

Table 12.5: Remaining Recorded Ringforts within the Study Area

RMP Number	Type	Townland	Condition	Distance from the Site
KE003-006	Rath	Carhoonakineely	Some remains	704 m
KE003-007	Rath	Coolnagoonagh	Well defined	942 m
KE003-014	Rath / Ringfort	Reenturk	Unknown	1.66 km
KE003-015	Rath / Ringfort	Kilclogan Upper	Well defined	648 m
KE003-017	Rath/ Ringfort	Pulleen / Glancullare	No visible remains	1.09 km

Source: <https://heritagemaps.ie>

Christianity was introduced in Ireland during the 4th century and was widely established by the later 6th century. Associated physical sites range from single churches to monasteries which were centres of learning around which settlements will grow up. The closest monastic site to the Proposed Development was located on Scatterly Island 6 km to the north-west within the Shannon estuary.

The Franciscan friary (KE003-016) known as Lislaughtin Abbey is believed to be sited on an earlier church (KE003-016003-). This site, located outside the study area 2.68 km to the south-west, was dedicated to St Lachtin of Muskerry, Co. Cork, who died in 622 AD. There are no visible traces of the original church.

The early medieval is also the period when Viking raids commenced in Ireland culminating with settlement including the formation of important coastal towns such as Dublin, Waterford and Limerick. The village of Ballylongford is located 4.3 km to the west of the Proposed Development. The name Ballylongford is derived from Bel-atha-longphuir or the ford / mouth of the longphort / fortress (Joyce, 1913). Joyce identified the fortress as Carrigafoyle Castle which is located on Carrigafoyle Island 3 km to the west of the town. This castle was constructed in the late 16th century by Conchuir Liath Uí Conchuir while the term 'longphort' is more often associated with Viking winter camps (Lane, 2012).

These camps consisted of a fortified area generally located within the bend of a river where ships could be pulled ashore and easily defended by an enclosing bank and ditch. There are many references to Viking activity within the Shannon estuary and it is possible that Ballylongford owes its name to the presence of such a winter camp, suggesting Viking activity within the area.

12.5.5.3 Medieval Period (1100 AD to 1700 AD)

The medieval period is characterised by the arrival of the Anglo-Normans in 1169. Initially invited to support Diarmait Mac Murchada, the deposed king of Leinster, the Anglo-Normans quickly began to seize territory for themselves transforming the physical appearance of the rural landscape in the form of manorial villages with open field systems, occupied with colonists from England and Wales (Aalen et. al. 1997). The old Gaelic system of agriculture which focused on cattle and dairy was replaced by predominantly arable agriculture based on crops such as wheat, rye flax and corn, while wool from sheep became an important export (Lane, 2012).

The Anglo-Normans are mainly associated with the introduction of motte and baileys to the landscape. These defended homesteads consisted of motte or an earthen mound surmounted by a timber fortification with an adjacent settlement surrounded by a bank and ditch (bailey). In some cases, larger settlements grew up around the motte and baileys which were replaced by more permanent stone castles. There are no examples of such sites within the boundaries of the Proposed Development or the wider study area.

One asset dating to the medieval period is located within the study area. This is Kilnaughtin Church (KE003-008) which dates to the 15th century and is located 1.28 km to the south-east of the Proposed Development. This church, dedicated to St Neachtan, consists of a long rectangular building measuring 28 m by 8 m with 1 m thick walls constructed of hammered stones with lime and sand mortar.

The graveyard (KE003-008001) is located adjacent to where the ogham stone (KE003-070) was uncovered which could suggest that this site is built on an earlier church site dating to the early medieval period.

12.5.5.4 Post-Medieval Period (1700 AD to 1900 AD)

There are no assets dating to the Post Medieval period recorded on the RMP within the Proposed Development or the 2 km study area.

12.5.5.5 Record of Protected Structures

There are no Protected Structures, as noted in the Kerry CDP 2022-2028 Record of Protected Structures, within the Site. Two Protected Structures are located within the wider 2 km study area. The first is Ralapanne House (RPS-KY-0888) which is located 307 m to the south of the Proposed Development, refer to **Figure F12.1**, Volume 3). This is a two-storey, L-shaped residence of four bays

and a porch to the front (south) side which is located at the end of a lane leading north from the L1010 road. The house is believed to date to the 18th century. During the early 19th century, a shepherd called Musgrave came to work for the Sandes family who were the local landowners (Lane, 2012). Musgrave became a trusted servant to the Sandes family who bequeathed Ralapane House and 150 acres to him. The property is still owned by the Musgrave family.

The second Protected Structure is the Lookout Post (RPS-KY-0877) associated with the Fort Shannon Coast Defence Artillery installation constructed in 1941. It is located adjacent to the north-east boundary of the Proposed Development and 20 m to the south of the foreshore. As previously mentioned, in **Section 12.5.2**, this flat roofed concrete structure was identified as a searchlight chamber with the remains of its searchlight still within the structure. Fort Shannon contained two searchlight positions, which were positioned in such a way as to be able to illuminate any ship sailing up the Shannon estuary and allowing the fort's two-gun emplacements to target the vessel, if necessary (Dargan, 2017).

12.5.6 National Inventory of Architectural Heritage

There are no sites recorded on the National Inventory of Architectural Heritage either within the Site or within the wider 2 km study area.

12.5.7 Planned Landscapes

There is one Planned Landscape noted on the NIAH Garden Survey within the study area, although it does not extend into the boundaries of the Site, refer to **Figure F12.1**, Volume 3. This is Sallowglen (2047) which is located 1.19 km to the south of the Proposed Development and extends outside the study area. It was owned by the Sandes family, who also owned Ralapane House (RPS KY 003-001) and the lands forming the development (Lane, 2012). William Sandes came to Ireland during the Cromwellian wars during the 1640s. Sandes' grandson, Thomas, built Sallowglen which Lewis (1837) described as a spacious and handsome mansion located in a finely wooded demesne of over 100 acres which extended along the Sallowglen. Other features included stables, barns and a gate lodge while the grounds also contained a large garden and orchard.

The Sandes estate was divided up between local farmers in 1929 and the house was occupied until 1942 after which it fell into disrepair and was later demolished (Lane, 2012). Today, the boundary and site footprint are still discernible with no major development having taking place. The positions of the entrances and drive have changed, and none of the architectural features are still extant.

12.5.8 Historic Cartographic Evidence

The 1st edition OS map (1841) shows the area of the Site towards the middle of the 19th century, refer to **Figure F12.2**, Volume 3. It was sub-divided into fields although large areas of open ground and marginal ground are shown. Each of the fields has straight boundaries that do not appear to deviate around physical features or possible archaeological remains. The coastline is well defined with Knockfinglas and Ardmore Points clearly marked. Exposed bedrock is marked on the shoreline at these locations. The curving bay to the southeast of the Proposed Development is labelled 'Ballylongford or Moovagh Bay'.

Activity within the Site is indicated by a few scattered buildings. Those at the east are served by an access lane leading from the main road, which also served what will become Ralapane House (RPS

KY 003-001). However, the single dwelling to the west is set within a field with no obvious access shown. The heritage assets are all clearly marked including the ringfort (KE003-004) partially within the boundaries of the Proposed Development. Ralapane House is also shown as an unidentified complex of buildings. Sallowglen Demesne with Sallowglen House is shown to the south.

The 2nd edition OS map (1896) shows the area of the Site at the end of the 19th century, refer to **Figure F12.3**, Volume 3. The field system was still well defined within the Site as is the coastline. A salmon weir is shown at Knockfinglas Point. while the areas of marginal ground are noted as being under water during Spring Tides. A river labelled 'Ballylongford Creek' is shown running into the sea to the west. The scattered buildings are still marked within the Site, while Ralapane House is identified to the south. The heritage assets are still marked, although most are denuded, including the ringfort (KE003-004) partially within the Site.

The 3rd edition OS map (1921) shows the Site during the first half of the 20th century, **Figure F12.4**, Volume 3). The location of the Proposed Development is still rural and fewer buildings are shown than previously. Ralapane House is still the largest property within the vicinity. The field systems are better defined with contour lines marked. The boundaries of these fields are still straight, while the coastline is still well defined. The Points on the coast are labelled and the salmon weir is still shown. The archaeological sites are less well defined. The ringfort (KE003-004) had been largely removed with only the half within the Site and the townland of Ralappane remaining. The cashel of Cahergal is only shown only as a datum point.

12.5.9 Aerial Photographic Evidence

The Site of the Proposed Development has been subject to detailed aerial photographic examination during previous planning applications from 2007 and 2012. In particular, the 2007 EIS included an aerial survey of the site (O'Leary, 2007). This aerial survey comprised video footage of the Site taken at varying heights between 300 ft and 100 ft. Examination of this video footage identified six areas of potential archaeological significance labelled Areas B, C, D, E, F and H. Of these areas, only three will be directly impacted by the Proposed Development. These three, Areas B, C and F were subject to archaeological testing in 2008 but found to be non-archaeological (Lane, 2012).

Area B is located in a field (Field 6B) at the east extent of the Proposed Development. It consists of the faint trace of a possible rectangular feature situated a short distance to the north-west of a disused well. No visible above ground remains were noted during a subsequent site inspection.

Area C is located within the north-west corner of the same field (Field 6B) as Area B. It consists of two small circular areas to the north of a rock outcropping. No visible above ground remains were noted during a subsequent site inspection.

Area F is a semi-circular area located within the field (Field 1) immediately to the south-west of the location of the ringfort (KE003-004) on the east boundary of the Proposed Development. No remains are visible on the ground. No signs of the ringfort (KE003-004) were visible from the aerial photography.

Examination of aerial photography taken at 20,000 feet noted a further five areas of archaeological potential. These areas were all subject to archaeological testing in 2008.

Area I is a linear feature which was identified to the south-west of the recorded ringfort (KE003:004) on the north-east boundary of the Proposed Development. Archaeological test trenching was carried out in the area and several linear features were noted in the east side of the field (Field 1). However, following archaeological investigation, these features were deemed to be of no archaeological significance consisting of agricultural features such as drains and plough furrows.

Area J is a circular area which was identified in the west of a field within the north-east of the Proposed Development. Archaeological test trenching was carried out in the area. However, no features of archaeological significance were recorded. A high concentration of archaeological features was recorded to the south of this.

Area K is a circular area identified in the east of Field 6B while Area L consists of a circular area identified in the south-west of Field 6B within the northeast of the development. Archaeological test trenching was carried out in the areas and several linear features, deposits and other features were recorded. These comprised the remains of several house foundations, rubble deposits, pathways and tracks and have been interpreted as a substantial habitation site. Early post-medieval pottery recovered from one feature indicates that at least part of this settlement dates back to that period. The location of these remains corresponds with the buildings marked on the 1st edition OS map (1841) at the north end of the lane leading past Ralapanne House. These buildings are not shown on subsequent map editions. Local information gleaned during the archaeological testing in 2008 revealed a folk memory of a larger settlement of 14 houses at this location.

Area M is a circular area was identified in the west of Field 6A where Area L is located. Archaeological test trenching was carried out with a curvilinear feature identified. The feature was only partially exposed within the trench and had concave sides, a gently sloping base and measured 0.5 m deep. It was filled by mid-grey, firm, sandy-silt with occasional small stones. The feature is most likely related to the post-medieval settlement activity uncovered in Areas K and L and shown on the 1st edition OS map.

12.5.10 Previous Archaeological Fieldwork

Extensive archaeological fieldwork has previously been carried out within the footprint of the Proposed Development. This included an intertidal survey, a marine archaeo-geophysical survey, a terrestrial geophysical survey and an architectural survey. (O’Leary, 2007). Archaeological testing was carried out in 2008. A subsequent terrestrial geophysical survey was carried out in 2023 (AMS, 2023).

12.5.10.1 Intertidal Survey

This consisted of a survey at the locations of the marine structures associated with the previous LNG Terminal, between Knockinglas Point and Ardmore Point, under licence 07R0048 issued by the Maritime Unit of the then Department of the Environment, Heritage and Local Government (Boland, 2006). The survey methodology consisted of a walkover visual survey, extending from the upper foreshore to the low water line for the length of the Site, and includes the location of the stormwater Outfall Pipe included in the current application.

The survey found that the upper foreshore is comprised of high, earthen cliffs with areas of bedrock outcrops. The earthen cliffs show signs of erosion. The mid and lower foreshore is comprised of boulders and cobbles. No archaeological features or deposits were noted either in the eroded cliff faces or on the foreshore. A renewed intertidal survey was undertaken in March 2021 to assess if any

cultural heritage has been revealed during the intervening time since 2007. Nothing of archaeological significance was noted and the condition of the foreshore was like that observed in 2007 with no evidence for erosion or change. Similarly, the location of the Stormwater Outfall Pipe was visited as part of this application in June 2023. Nothing of archaeological significance was noted at the location.

A subsequent archaeological walkover and metal detection survey was carried out along a 250m long and 50m wide stretch of the intertidal zone in February 2024 (AMS, 2024a). The metal detection survey was conducted under licence 24R0012. No archaeological objects, features or deposits were noted, refer to **Appendix A12.3**, Volume 4.

12.5.10.2 Marine Archaeo-geophysical Survey

This survey was conducted in conjunction with the intertidal survey under licence 07R0048 (Boland, 2006). No magnetic anomalies were identified during marine geophysical surveys at Ballylongford. Twelve features were interpreted from the high-resolution side-scan sonar survey although the majority were interpreted as drag marks or modern artefacts associated with drilling rigs. One feature was interpreted as anomalous in nature, appearing manmade and most likely associated with discarded fishing equipment. This feature is located approximately 630 m from the proposed works and will not be impacted by works within the intertidal area associated with the Stormwater Outfall Pipe.

A subsequent marine geophysical survey was conducted in February 2024 under licence 24D0008 comprising multibeam sonar, magnetometry, side-scan sonar and sub-bottom profiling (AMS, 2024b). The purpose of this survey was to examine the marine section of the location of the Stormwater Outfall Pipe for possible archaeological remains whilst also inspect and hopefully provide further details on and identification for the side-scan anomaly (SS8) detected in the previous geophysical survey. This anomaly was not detected although survey in the area was hampered by the presence of lobster pots which distorted results.

The survey took place across the marine section of the location of the Stormwater Outfall Pipe barring a 25 m wide inshore strip adjacent to the shoreline which was too shallow to access. However, the majority (60%) of the inshore area was inspected visually and subject to metal detector survey. The marine survey identified eight anomalous features (A1-8) all of which are located within the jetty footprint associated with the Proposed Shannon Technology and Energy Park (STEP) Strategic Gas Reserve Facility (APB-319245-24). Of these, A1, A2, A3 and A7 have been interpreted as natural features comprising bedrock outcrops and buried boulders which may represent former dry land landscape. A4-A6 were detected by magnetometer and comprise small metallic objects. These were not detected by the side-scan sonar which suggested they are buried within the mud on the seafloor. A8 comprised a 15m-long feature which was detected by sub-bottom profiler 1m within the mud beneath the seabed. This anomaly has been interpreted as a potential archaeological feature. The nature of this anomaly is unknown with further analysis ongoing but its location on the seabed suggests it could be associated with buried land surfaces and, therefore, of prehistoric date. This would make it regionally important and medium importance. This anomaly is located 300 m to the north-east of the Stormwater Outfall Pipe.

12.5.10.3 Walkover Survey

The Proposed Development was subject to a detailed archaeological walkover survey (Lane, 2006 and **Appendix A12.4**, Volume 4). This identified 15 No. areas which were denoted as Cultural Heritage

Sites (CHS), refer to **Figure F12.5**, Volume 3. Seven of these are located within the boundaries of the Site.

CHS4 is a farm complex which was depicted on all three OS map editions (Lane, 2006). It comprises two buildings in a ruinous condition and two modern buildings. The farm complex was recorded as part of the Upstanding Building Survey carried out by Headland Archaeology, refer to **Section 12.5.10.6**. This asset is located within the Site of the Proposed Development.

CHS5 is a raised rock outcrop on a height against the western boundary of a large field. Covering an area 38 m north to south by 15 m east to west and occupying a commanding position with good views over the estuary to the north, this was identified as a possible archaeological feature and subject to archaeological testing that determined it may be an enclosure, refer to **Section 12.5.10.5**.

CHS6 is a disused well of 'random rubble construction' (Lane, 2006). The well is post-medieval in date and is depicted on the 1896 and 1914 editions of the OS maps. Archaeological test trenching was not carried out in the area due to the risk of contaminating or disturbing the watercourse. This asset is located within the Site.

CHS7 is a gun emplacement in the east extent of the Site, located in the field boundary between the fields forming the north-east corner of the Proposed Development. The structure is associated with Fort Shannon which is situated to the east of the Site in the townland of Carhoonnakineely and was built in 1941 as a defence against possible German attack. The pillbox was recorded as part of the Upstanding Building Survey carried out by Headland Archaeology, refer to **Section 12.5.10.6**.

CHS10 is the recorded ringfort site (KE003:004) located on the east boundary of the Site. No above ground elements of the ringfort remain; however, sub-surface elements were identified during the geophysical survey, refer to **Section 12.5.10.4**. Archaeological test trenching was carried out in the north-east of the surrounding field however, no remains of the enclosure ditch were discovered. A number of features were identified in the vicinity which may be related, refer to **Section 12.5.10.5**.

CHS14 had been identified as a mass rock and was recorded in the EIS (O' Lane, 2006) through local consultation. Known locally as Blakeney's Altar, it was located in the intertidal area within the Proposed Development and consisted of two rocks topped with a slab. It is believed that mass was said at the site during penal times. Blakeney's Altar was not noted during the 2006 or 2021 foreshore surveys and remains unlocated. This asset will not have been maintained once the requirements for its use were removed and likely no longer exists.

CHS15 represents the partial remains of a structure located to the east of the pillbox CHS 7 at the northeast of the current Proposed Development. The structure was examined as part of the Upstanding Building Survey carried out by Headland Archaeology, refer to **Section 12.5.10.6**.

The other 8 CHS outside the current Proposed Development comprise the following.

CHS1 is the same feature as Area H noted in **Section 12.5.10** and comprises a semi-circular shaped mound with a central depression thought to represent a fulacht fiadh or burnt mound. It is located outside the boundaries of the current Proposed Development.

CHS2 is a complex of farm buildings set around a farmyard in the west of the site outside the boundaries of the current Proposed Development. The buildings are post-medieval in date and are present on three

editions of the OS maps (1843, 1896 and 1914). The complex was examined as part of the Upstanding Building Survey carried out by Laban in 2008, refer to **Section 12.5.10.6**.

CHS3 is a concrete ruin, known locally as ‘the concrete’ (Lane, 2006). It is believed to have been used to store nets and other fishing equipment. The structure was not examined during the Upstanding Building Survey as it was not in an area which will be impacted upon by the previously proposed development. It remains outside the boundaries of the current Proposed Development.

CHS8 is a post-medieval residential structure described as a ruined building of ‘mass concrete construction’ (O’Leary, 2007). The structure was not examined during the previous Upstanding Building Survey. It remains outside the boundaries of the current Proposed Development.

CHS9 is a farm complex that is depicted on three editions of the OS maps (1843, 1896 and 1914). The structures were examined as part of the Upstanding Building Survey carried out by Headland Archaeology, refer to **Section 12.5.10.6**. The complex is located outside the boundaries of the current Proposed Development.

CHS11 is described as ‘a ruined structure of rough concrete construction’ with small sheds adjoining the east gable (O’Leary, 2007). The structure was not examined during the Upstanding Building Survey and is outside the boundaries of the Site.

CHS12 is the site of an old forge that is depicted on all three editions of the OS maps. The EIS notes that there appears to be no above ground evidence for the forge though it is possible that the vegetation growth was obscuring low lying structural remains (O’Leary, 2007). The feature was not examined during the Upstanding Building Survey and is outside the boundaries of the Site.

CHS13 is the site of a well called Tubberagleanna which translates as ‘well of the Glen’ (O’Leary, 2007). The spring is now overgrown by vegetation and not apparent on the ground. This area of the site is located between a silt trap and a watercourse and has not been subject to archaeological test trenching. It is located outside the boundaries of the Site.

12.5.10.4 Terrestrial Geophysical Surveys

Terrestrial geophysical survey was conducted by Target Geophysics in October 2006 (Nicholls, 2006 and **Appendix A12.5**, Volume 4). The survey focussed on the eight areas of archaeological potential highlighted from the aerial photographic survey, field walkover inspections and historic cartographic research. The areas of archaeological potential included one possible archaeological feature noted during the preliminary geotechnical survey carried out in 2006- the possible burnt mound Area H / CHS1. Evidence for burnt or fired material was noted at this location which will correspond to the presence of a burnt mound.

Five of these areas are located within the boundaries of the Site (Areas A, B, C, G and F). Four of these are potential sites identified during aerial photographic survey - Areas A, B, C and F. These did not exhibit any definite signs of archaeological activity which, in the surveyor’s opinion, will likely be readily detectable within the local soil and geology. Area G was the western zone of archaeological potential associated with the levelled ringfort (KE003-004). This was also examined revealing possible indications for its enclosing ditch and other internal features.

For the most part, the terrestrial geophysical survey revealed that the area had been intensely cultivated with significant field boundary removal having taken place.

Further archaeological geophysical surveying was undertaken in 2023, along the route of the proposed Shannon LNG Gas Pipeline (AMS, 2023). This survey covered field 1 within the power station's proposed area of development, named survey section 0.1 (AMS, 2023). Thirteen (13) anomalies were identified within this section which were mainly interpreted as possible ditches and likely agricultural in nature. However, five of the anomalies were interpreted as potential heritage features. Anomaly 1-02 was located within the north-east of the field adjacent to the location of the ringfort (KE003-004). It is circular measuring 20 m in diameter and has been interpreted as a possible ring-ditch.

Anomaly 1-03 is curvilinear in shape and corresponds with the ditch of the ringfort (KE003-004) while the adjacent anomaly 1-04 has been interpreted as an internal feature within the ringfort. Anomaly 1-06 appears as a pentangular enclosure which has been tentatively interpreted as a possible military feature, while anomaly 1-07 appears to correspond to a field system shown on the 1st edition OS map (1841).

It should be noted that archaeological testing was carried out in 2008, including field 1, see **Section 12.5.10.5**. This testing found no evidence for remains associated with the ringfort (KE003-004), or associated features, nor was anything uncovered at the location of anomaly 1-02 (possible ring-ditch) (Long and O'Malley, 2009). The test trenching undertaken in 2008 did find three areas of archaeological potential within this section, areas 3, 4 and 5 (Long and O'Malley, 2009). Of these, only area 5 corresponds with the location of an anomaly – 1-06. The archaeology uncovered at this area comprised some charcoal-rich features, stake holes and linear features, although these were not interpreted as an enclosure. Area 4, located within the southeast corner of the field, was interpreted as a curvilinear enclosure ditch, several postholes and pits. No potential anomalies were detected at this location during the geophysical survey.

12.5.10.5 Archaeological Testing

This is the most pertinent previous archaeological work as it provides direct evidence of the presence or absence of archaeological features within the boundaries of the Site. The testing was carried out in 2008 to fulfil conditions 32 (a), (f) and (g) of a previous Planning Permission (No. 08PA0002) and consisted of 48,860 linear metres of trenching undertaken (Long and O'Malley, 2009 and **Appendix A12.6**, Volume 4). The trenches were 2 m wide and generally set 10 m apart set in a layout agreed with Dr Michael Connolly, County Archaeologist with Kerry Co. Council. Sixty areas of archaeological potential were uncovered, refer to **Figure F12.6**, Volume 3. These are summarised in **Table 12.6** with those located within the current Site boundaries highlighted.

Table 12.6: Areas of Archaeological Potential Uncovered during Testing in 2008

Area Number	Field Number	Summary of Archaeological Features Identified	Within the Site of the Proposed Development?
1	3	Linear features, a charcoal filled feature and a small midden pit filled with shell in the east of the field.	Yes
2	6A	Consists of two points of focus - A large burnt mound and a charcoal-rich pit.	Yes
3	1	Consists of two points of focus - A charcoal-rich curvilinear feature and several small sub-oval pits in the zone of archaeological potential for RMP KE003:004 and a sub-rectangular feature with charcoal-rich fills.	Yes
4	1	A curvilinear enclosure ditch, several postholes and pits.	Yes
5	1	Some charcoal-rich features, stake holes and linear features.	Yes
6	1, 2 & 6A	A large irregular area around a dense concentration of features that seem to represent a substantial habitation site. Pottery recovered in this area indicates that at least part of it dates to the 17th or 18th centuries. The location of this area is consistent with Areas K and L noted through aerial photography and the buildings shown on the 1st edition OS map (1841). However, local knowledge imparted to the excavation team suggests that a previous village of 14 houses may have existed here.	Yes
7	6C	A burnt mound and a possible trough.	Yes
8	8	A burnt mound.	Yes
9	54	Charcoal rich pit.	Yes
10	7	Consists of two points of focus: one cereal-drying kiln and one charcoal rich feature.	Yes
11	6C & 7	A possible enclosure. This area corresponds with CHS 5 possible archaeological feature noted during the walkover survey.	Yes
12	8	A concentration of linear and curvilinear features in the west of the field.	Yes
13	8	Consists of two points of focus - A number of charcoal rich features, linears and a possible figure-of-eight shaped corn-drying kiln.	Yes
14	3	Consists of two points of focus - A number of charcoal rich pits and stone filled features in the north of the field.	Yes
15	39, 42, 43 & 44	Consists of two points of focus - A number of linear features, postholes, a large sub-rectangular pit and several burnt mound deposits.	Yes
16	13, 39 & 41	Two deposits of burnt mound material in a dip in the local topography.	Yes
17	37	A pit full of burnt stone and charcoal and some possible postholes in the west of the field.	Yes
18	8	Consists of two points of focus - A number of stone filled pits and linear features.	Yes

Area Number	Field Number	Summary of Archaeological Features Identified	Within the Site of the Proposed Development?
19	42	Consists of three points of focus - Several charcoal filled features in the north of the field.	Yes
20	13	A large charcoal production pit, a possible hearth and a number of possible postholes in the east of the field.	Yes
21	Merged with area 3		Yes
22	11	A possible charcoal rich pit in the centre of the field.	Yes
23	9B & 13	Two stripped areas around several deposits of burnt mound material and associated features.	Yes
24	12	Consists of two points of focus - possible habitation area (structure) and associated pits and postholes.	Yes
25	25	A kiln / furnace running up to the stream edge.	Yes
26 & 27	12 & 27	Burnt mound deposits and associated features on either side of the stream. A series of post holes and burnt material found in the east side of the field.	Yes
28	12	A deposit of burnt mound material.	Yes
29	32	Two shallow pits filled with organic material and burnt stone in the north of the field.	No
30	28	Consists of two points of focus - A burnt mound and associated pits and linear features.	No
31	4	A linear feature and a burnt deposit.	Yes
32	8	A possible hearth and several sub-oval charcoal-rich features.	Yes
33	9A	Consists of three points of focus - Two small features in the south of the field A curvilinear feature further by the stream.	Yes
34	9B	Consists of three points of focus - Around the isolated features identified in the south and southeast of the Field.	Yes
35	14	Consists of two points of focus -Two small burnt mound deposits.	Yes
36	36	Consists of two points of focus - Around a post-hole, a charcoal-rich pit and a charcoal-rich linear scattered throughout the field.	Yes
37	46 & 47	A low concentration of possible features including charcoal flecked spreads and pits.	No
38	6A	A charcoal-rich pit.	Yes
39	6B	Consists of two points of focus - A charcoal-rich linear feature and a deposit of heat-shattered stone and charcoal.	No
40	52	A curvilinear feature.	No

Area Number	Field Number	Summary of Archaeological Features Identified	Within the Site of the Proposed Development?
41	51	A possible charcoal production pit.	No
42	48	A deposit of burnt mound material.	No
43	26	A large pit.	No
44	26	A possible hearth.	No
45	26	A deposit of burnt mound material and a linear feature.	No
46	29	A large charcoal-rich sub-oval feature.	No
47	30A & 31	A charcoal spread and a possible posthole.	No
48	34	A large irregular pit.	No
49	13	Consists of two points of focus - around two stony features.	Yes
50	8	A possible posthole in the southwest of the field.	Yes
51	53	A deposit of burnt mound material.	No
52	53	A deposit of burnt mound material in the north of the field.	No
53	53	Two deposits of burnt mound material in the centre of the field.	No
54	53	A charcoal-rich feature.	No
55	32	A charcoal-rich feature.	No
56	53	A charcoal-rich feature.	No
57	53 & 55	Consists of two points of focus - A linear feature and three charcoal-rich features.	No
58	56	A stony feature in the north of Field 56.	No
59	56	Four stripped areas- around three pits, a possible hearth and a stake hole.	No
60	55 & 56	A dense concentration of features in the southeast of Field 56 and the northeast of Field 55 within a possible ditched enclosure.	No

Source: Long and O'Malley, 2009

A summary of these site types as uncovered within the Proposed Development boundaries is given below. The descriptions are taken from the archaeological testing report (Long and Malley, 2009).

Burnt Mounds (Area Number 2, 7, 8, 16, 35)

Burnt mounds (also known as fulacht fiadh) are a relatively common archaeological monument found throughout the country with a number found within the Site of the Proposed Development. They occur in the landscape as mounds of heat-shattered stone and charcoal, which vary considerably in size and shape but are often horse-shoe shaped. The mounds are often disturbed by ploughing and other agricultural practices and deposits of burnt stone and charcoal can often be dragged quite a distance from their source.

These mounds of burnt material are usually accompanied by at least one sub-soil cut trough. It is generally accepted that troughs were filled with water which was boiled by dropping heated stones into it. After a number of uses the stones will shatter and this waste material will have been cleaned out of the trough and dumped to the side where mounds gradually accumulated. The charcoal in the mounds is a result of the fuel that was used to heat the stones. As well as mounds and troughs, these sites can include various other features such as hearths, pits and structures. The use made of the boiling water is likely to have varied from site to site and the possibilities include cooking, washing, brewing, tanning etc. Some burnt mounds have been associated with structures that have been interpreted as sweat lodges while others are associated with metal working sites. It is quite common to have features associated with a burnt mound, including the troughs, located on the periphery of the mound itself or even a short distance from it.

Burnt mounds in Ireland are broadly datable to the Bronze Age, with excavated examples providing dates clustering between 1600 BC and 1000BC, with a few outliers in the later prehistoric and early historic periods (Brindley & Lanting, 1990, 56). It is likely that at least some of the burnt mounds on the site are Bronze Age in date. The discovery of two flint artefacts in association with the mound in Area 2 in the northeast of the Site will further indicate that this is the case.

Deposits (Area Number 17, 23, 26, 27, 31)

Several small, disturbed or patchy deposits of heat shattered stone and charcoal were identified throughout the site. While these deposits do not constitute a burnt mound, they are an indication that there was burnt mound activity in the immediate vicinity. They may also represent severely disturbed or ploughed out mounds. In this case, sub-soil cut features associated with the ploughed-out mounds may still exist sub-surface.

Kilns / Furnaces / Charcoal Production Pits (Area Number 10, 13, 25)

A number of features throughout the Site presented as large, well-defined, and rich in charcoal. The very high charcoal content and well-defined nature of these features implied that they were archaeologically significant but in advance of full excavation it is difficult to determine their exact function. While charcoal flecks are extremely common in archaeological deposits and smaller charcoal-rich features can represent hearths or land clearance a very high charcoal content in a large pit usually indicates some kind of industrial process such as corn drying kilns.

Charcoal Production Pits (Area Number 3, 5, 9, 14, 19, 20, 22, 36, 38)

Charcoal was a valuable fuel source for many industrial processes in the past, but the production of charcoal was in itself a widespread process. There has been little in the way of research into the methods used for charcoal production, but charcoal clamps and charcoal production pits can be identified in the archaeological record. Several of the features identified within the Site have been provisionally interpreted as charcoal production pits, though it must be noted that further investigation may provide evidence that at least some of these features may be related to cereal-drying or metalworking. They are generally sub-rectangular in shape and contained relatively shallow deposits with very high charcoal content.

Archaeological Complexes / Settlement Areas (Area Number 4, 6, 11, 24)

Where a significant cluster of archaeological features have been identified including linear features, pits, hearths and possible structural remains such as post-holes and foundation trenches it has been classified as an archaeological complex / settlement. Several such complexes / settlements have been identified. They appear to vary considerably in character and date ranging from the prehistoric to the post medieval period.

In advance of archaeological excavation, it is difficult to interpret these types of sites, but they are the largest archaeological sites so far identified within the Site.

Clusters of Archaeological Features (Area Number 1, 12, 15, 18, 32)

Several areas of archaeological significance / potential have been categorised as clusters of archaeological features. The nature and distribution of the features identified makes it difficult to determine what kind of site they represent. Some individual features within these sites have been discussed above but it is important to note that they occur in close proximity to less diagnostic features. The presence of a cluster of features increases the likelihood that a substantial archaeological site may exist in these areas. Some of these areas are likely to be habitation sites but there was not enough evidence to that effect from the testing process to include them in the Archaeological complexes / settlements category of the discussion.

Isolated / Miscellaneous Features (Area Number 33, 34, 50)

These consist of features which were found throughout the Site which may be of archaeological significance, but their function remains unclear. They mainly occurred in isolation within the test trench although associated remains may exist outside the trench. In some cases, more than one feature was uncovered within the trench. However, the concentration of these was not enough to class them as a concentration of archaeological features.

The archaeological features were recorded within the trenches then covered in a breathable membrane (Teram) before the trenches were backfilled. This was done in order to protect the features and also serve as an aid to re-identifying the archaeology during excavation (Long and O'Malley, 2009).

12.5.10.6 Architectural Survey

A number of structures were noted within the previous proposed development boundary during preparation of the EIS in 2006. These structures were identified as Cultural Heritage Sites (Lane, 2006) and have been described in **Section 12.5.10.3**.

Three of these (CHS 4, 7 and 15) are located within the current Proposed Development and were fully recorded in 2008 in the upstanding building survey to fulfil Condition 32 (c) of Planning (No. 08PA0002).

CHS 4 is a small farm complex described as *'consisting of one house with three outbuildings and surrounded by a boundary wall. This complex retains much of its historic value with two of the structures being mid nineteenth century in date and two modern buildings. These buildings demonstrate two separate building periods with the first edition OS map showing an even earlier period of habitation'* (Laban, 2008 and **Appendix A12.6**, Volume 4).

CHS 7 is the pillbox associated with Fort Shannon. It is described as *'a detached single-bay single-storey hexagonal pill box, built c. 1942, now derelict. Flat concrete roof. Concrete walls with rubble limestone camouflage covering. Square-headed chamfered openings. Square-headed door opening. Built within a field boundary. A typical WWII era pill box, of functional design. It remains in good condition due to its simple Design'* (Laban, 2008 and **Appendix A12.7**, Volume 4).

CHS 15 represents the partial remains of a structure located to the east of the pillbox CHS 7 at the northeast of the development. The structure is described as *'an incorporated two-bay structure, built c. 1900. Square-openings now blocked. Rubble limestone walls. This structure is located near the pill box and set within a rubble limestone wall, it may be associated with it, however different building materials suggest a separate date and use'* (Laban, 2008 and **Appendix A12.6**, Volume 4).

12.5.10.7 Metal Detection and Wade Survey

A watercourse is located to the south-west and outside of the Proposed Development. This feature ran directly across the area of the previous proposed development and was identified as an area of archaeological potential (Long, 2006 and **Appendix A12.7**, Volume 4). A wade and metal detection survey of the watercourse under underwater survey licence 07R196 and detection device licence 07D63 was undertaken in accordance with the requirements of the condition on previous planning approval (Condition 32 (b) of Planning Permission No. 08PA0002).

The survey was conducted along a 750 m section of the stream with approximately 400 m of the stream inaccessible due to thick vegetation along the riverbanks and in the river itself (CRDS Ltd, 2008). Nothing of archaeological potential was recorded during the surveys although it was noted that much of the relevant portion which will be impacted by the previous proposed development was inaccessible. The report recommended that any areas of the stream that will be directly impacted by construction works should be monitored by a suitably qualified archaeologist.

12.6 Embedded Mitigation Measures

12.6.1 Embedded Mitigation Measures to be adopted during Proposed Development Construction in relation to Terrestrial Archaeological Assets

There is one archaeological asset recorded on the RMP located within the boundary of the Site. This is the ringfort (KE003-004) / CH10 which is located on the northeast boundary. There are no visible traces of this archaeological site which is clearly marked on historic OS mapping. The 2007 EIS recommended that this asset remain in situ within the boundaries of the previous proposed development with a buffer zone created around it. This recommendation was included as Condition 32 (f) of Planning Permission (08.PA0002). The former location of the ringfort was subject to intensive archaeological testing to inform the size and extent of a buffer zone around the monument. The results of this testing facilitated the proposal of a fence that will ensure the preservation in situ of the ditch identified in the geophysical survey and possibly associated features identified in testing (Long and O'Malley, 2009). This fence, located 30 m from the asset, will be included in the current Proposed Development as embedded mitigation, refer to **Figure F12.6**, Volume 3. One heritage asset is located immediately adjacent to the east boundary of the Proposed Development. This is the Lookout Post / Searchlight Emplacement (RPS-KY-087) which is apparent as an upstanding structure. The Lookout Post / Searchlight Emplacement (RPS-KY-087) is a Protected Structure recorded on the Kerry CDP 2022-2028 and is, therefore, considered to be **Regionally** important. There is the possibility that it could be accidentally impacted during construction works.

During the construction phase procedures will be adopted, as would be described in the Construction Environmental Management Plan (CEMP), refer to **Appendix A2.3**, to protect this asset. These procedures could include physically cordoning the asset off from works and holding toolbox talks to inform construction supervision staff and site operatives of the requirements.

12.6.2 Embedded Mitigation Measures to be adopted during Proposed Development Construction in relation to Marine Archaeological Assets

A site of archaeological potential was recorded during the marine geophysical survey in 2007. This was interpreted as potential debris from shipping in the Shannon Estuary. The location of the submerged anomaly lies some 815 m to the north-east of the Proposed Development and is unlikely to be directly impacted by works during construction. Condition 32 (d) of previous Planning Permission (08.PA0002) which relates to this site of archaeological potential required a seabed impact exclusion zone of 50 m to be maintained around the anomaly to ensure it is not impacted upon.

A subsequent marine geophysical survey was carried out in February 2024 under licence 24D0008. This survey failed to relocate the site of archaeological potential which has been assessed as non-archaeological and most likely potential debris from shipping in the Shannon Estuary as originally interpreted. There will be **No Impact**.

This survey did detect eight anomalous features (A1-8) all of which are located within the jetty footprint associated with a previous planning application. A8 comprised a 15 m-long feature which was detected by sub-bottom profiler 1m within the mud beneath the seabed and has been interpreted as a potential archaeological feature.

A8 is located 390 m to the northeast of the Stormwater Outfall Pipe and is unlikely to be directly impacted by works during construction. However, it is recommended that a seabed impact exclusion zone of 50m be maintained around the anomaly to ensure it is not impacted upon.

12.7 Assessment of Impact and Effect

12.7.1 Construction Phase

The construction phase will see works within the Site built infrastructure including:

- Partial or total removal of heritage assets during site clearance, earthworks (including blasting), excavation and contractor compound areas.
- Impact of landscaping, spoil disposal and planting on the setting of heritage assets, and damage caused to archaeological deposits caused by planting or earthwork embankments.
- Compaction of archaeological deposits due to construction traffic movement or materials storage; damage through rutting of superficial deposits from construction traffic.
- Vibration and changes in air quality, causing damage to historic monuments during construction.
- Changes in groundwater levels leading to the desiccation of previously waterlogged archaeological deposits, damage caused by changes to hydrology and chemical alteration, or changes in silt deposition regimes.
- Effects on the setting of heritage assets, including visual and noise intrusion, and changes in traffic levels.
- Severance causing dereliction or neglect of historic monuments or reduction of group value and adverse impacts on amenity as a result of construction works.

12.7.1.1 Cultural Heritage Assets

One cultural heritage asset recorded on the RMP is partially located within the boundaries of the Site. This is the ring fort (KE003-004) which is located on the east boundary (**Photograph 12.4; Appendix A12.2** Volume 4). Embedded mitigation measures have been included within the scheme design to ensure that this asset is not impacted, refer to **Section 12.4.1**.

Other cultural heritage assets consist of upstanding structures and buildings and potential archaeological sites which have been identified within the Proposed Development during the preparation of this EIAR and also designated heritage assets recorded as National Monuments and Protected Structures within the wider study area.

The CHS within the Proposed Development comprise six assets – CHS4 farm complex, CHS5 possible archaeological feature, CHS6 well, CHS7 gun emplacement, CHS14 mass rock and CHS15 a two-bay ruined structure. The CHS4 farm complex, CHS7 gun emplacement and CHS15 two-bay structure were recorded as part of the upstanding building survey in 2008 and are now considered resolved with the planning condition met within that previous EIS (Lane, 2012). CHS4 farm complex, CHS7 gun emplacement and CHS15 two-bay structure are located within the footprint of the current Proposed Development and are considered to be of **local** interest and of **Low** importance as defined by the criteria in **Table 12.2**. They will be severely impacted upon (demolished) by groundworks associated with the scheme which will alter the special interests or qualities of these assets. The magnitude of this impact

will be **Very High** as defined by the criteria in **Table 12.3** leading to a significance of effect of **Significant**, as defined by the criteria in **Table 12.4**. The effect is **Negative** and **Permanent**.

CHS5 possible archaeological feature was subject to investigation in 2008 and was determined to be an enclosure (Area of Archaeological Potential 11). This asset is of **local** interest and of **Low** importance as defined by the criteria in **Table 12.2**. (It is noted that the designation of identified / potential archaeological features may be higher than local significance in certain instances and this will only be determined through further investigation namely archaeological excavation). It will be impacted by groundworks associated with the construction phase of the Proposed Development. The impact will result in the permanent removal of this asset altering its special interests or qualities. The magnitude of effect is judged to be **Very High**. On a site of local value, this results in a significance of impact of **Significant**. The effect is **Negative** and **Permanent**.

CHS6 well was not investigated and recorded in 2008 due to onsite conditions to avoid polluting the watercourse. This asset remains unrecorded but is likely to be of **local** interest and of **Low** importance as defined by the criteria in **Table 12.2**. It will be impacted by groundworks associated with the construction phase of the Proposed Development. The impact will result in the permanent removal of this asset altering its special interests or qualities. The magnitude of impact is judged to be **Very High**. On a site of local value, this results in a significance of effect of **Significant**. The effect is **Negative** and **Permanent**.

CHS14 is a mass rock which, according to local information, was located in the intertidal area of the Proposed Development. This asset is of **local** interest and of **Low** importance as defined by the criteria in **Table 12.2**. CHS14 mass rock has not been located and it was not observed during the 2006 and 2021 intertidal surveys suggesting that it no longer exists. There will be **No Impact** to this asset.

The designated Cultural Heritage assets within the wider Study Area comprise Lookout Post / Searchlight Emplacement (RPS-KY-0877), Ralapane House (RPS KY 003-001), and Lislaughtin Abbey (NM No. 258). While these assets will not be physically impacted by the Proposed Development, there is the possibility of negative impact to the setting of the designated assets by noise, dust and vibration from construction related traffic which could diminish the importance of these assets.

Lookout Post / Searchlight Emplacement (RPS-KY-087) is located to the immediate north-east of the Proposed Development (**Photograph 12.5**; Appendix A12.2 Volume 4). It dates to the 1940s and was constructed as part of the Fort Shannon coastal artillery battery which still exists in a ruinous state to the east of the Lookout Post / Searchlight Emplacement. It is considered **Regionally** important. The Lookout Post / Searchlight Emplacement is located on a ridge overlooking the shoreline with its main aspect facing out to sea away from the Proposed Development. The Proposed Development will be clearly visible from the Lookout Post / Searchlight Emplacement especially the adjacent security fence and the power station building which will be the largest structure within the area.

The presence of the Proposed Development will alter the environs of the Protected Structure which are currently rural. While this will create a very noticeable change, the presence of the Proposed Development will not impact the ability to understand or appreciate the purpose of the Lookout Post / Searchlight Emplacement or its relationship with the other structures in Fort Shannon. Additionally, the Lookout Post / Searchlight Emplacement was specifically placed to overlook and illuminate a specific

section of the Shannon Estuary. The Proposed Development will not be visible in views of this section of the Shannon Estuary.

The setting of the Lookout Post / Searchlight Emplacement may be impacted by noise, dust and vibration from the construction works but these will generally cease as the Proposed Development is completed, although noise from the Proposed Development will continue during the operational phase. The change to setting will be such that the special interests or qualities of the asset are slightly affected without a noticeable change. The understanding of the asset will not be affected leading to a magnitude of impact of **Low** as defined by the criteria in **Table 12.3** leading to a significance of effect of **Slight**, as defined by the criteria in **Table 12.4**. The slight significance of effect will be **Long-Term** and **Neutral**.

Ralapane House (RPS KY 003-001) is located to the south of the Proposed Development (**Photograph 12.17**; Appendix A12.2 Volume 4). It dates to the 18th century and is considered **Regionally** important being formerly associated with the Sallowglen (2047) planned landscape. The house is a Protected Structure on the Kerry CDP 2022-2028. It is located on a ridge overlooking the L1010 road, with the property's main aspect towards the road and not towards the Proposed Development, which is located to the north, while mature tree planting screens the rear of the property. The setting of Ralapane House (RPS KY 003-001) may be temporarily impacted by noise, dust and vibration from the construction works but these will cease as the Proposed Development is completed. The change to setting will be such that the special interests or qualities of the house are slightly affected without a noticeable change. The understanding of the asset will not be affected leading to a magnitude of impact of **Low** as defined by the criteria in **Table 12.3** leading to a significance of effect of **Slight**, as defined by the criteria in **Table 12.4**. The slight significance of effect will be **Short-Term** and **Neutral**.

Lislaughtin Abbey (NM No. 258) is located 2.72 km to the south-west of the Proposed Development (**Photograph 12.22**; Appendix A12.2 Volume 4). It is a National Monument and is considered **Nationally** important. There are no views between this monument and the Proposed Development while there will be **No Impacts** from noise, dust and vibration from the construction works due to the intervening distance. The special interests or qualities of the abbey will not be affected and there will be no impact.

Other cultural heritage sites were noted within the previous larger Proposed Development which was the subject of the 2006 EIS. These also included upstanding structures and buildings and potential archaeological sites. CHS2, and CHS9 consist of complexes of farm buildings. These were all recorded in 2008 as part of the Upstanding Building Survey in 2008 as conditions upon Planning Permission (Condition 32 C 08.PA0002) and are now considered resolved with the planning condition met (Lane, 2012).

The remaining cultural heritage assets within the previous development comprise CHS1 possible burnt mound, CHS3 concrete ruin, CHS8 modern residential structure, CHS11 ruined concrete building, CHS12 site of old forge and CHS13 Tubberagleanna well. All, with the exception of CHS13 Tubberagleanna well, were located in areas where they will not be impacted by the previous proposed development so were not subject to recording. These assets, including CHS13 Tubberagleanna well, are located outside the boundaries of the Proposed Development and will not be impacted during the construction phase. There will be no impact.

12.7.1.2 Areas of Archaeological Potential

The archaeological testing in 2008 revealed 60 Areas of Archaeological Potential. These relate to the wider site boundary at that time and have been listed in **Table 12.6**. Of these, 31 Areas of Archaeological Potential are located within the footprint of the Proposed Development. These are listed in **Table 12.7** below and shown on **Figure F12.7**, Volume 3.

Table 12.7: Areas of Archaeological Potential within the footprint of the Proposed Development

Area number	Summary of Archaeological Features Identified	Location within the Proposed Development
1	Linear features, a charcoal filled feature and a small midden pit filled with shell in the east of the field.	Site Pad
2	Consists of two points of focus - A large burnt mound and a charcoal-rich pit.	Site Pad
3	Consists of two points of focus - A charcoal-rich curvilinear feature and several small sub-oval pits in the zone of archaeological potential for RMP KE003:004 and a sub-rectangular feature with charcoal-rich fills.	To be left in situ within buffer zone
4	A curvilinear enclosure ditch, several postholes and pits.	Above Ground Installation
5	Some charcoal-rich features, stakeholes and linear features.	Above Ground Installation
6	A large irregular area around a dense concentration of features that seem to represent a substantial habitation site. Pottery recovered in this area indicates that at least part of it dates to the 17th or 18th centuries.	Site Pad / Above Ground Installation
7	A burnt mound and a possible trough.	Site Pad
8	A burnt mound.	Site Pad
10	Consists of two points of focus: one cereal-drying kiln and one charcoal rich feature.	Site Pad
11	A possible enclosure.	Site Pad
12	A concentration of linear and curvilinear features in the West of the field.	Laydown Area
13	Consists of two points of focus - A number of charcoal rich features, linears and a possible figure-of-eight shaped corn-drying kiln.	Laydown Area
14	Consists of two points of focus - A number of charcoal rich pits and stone filled features in the north of the field.	Laydown Area
17	A pit full of burnt stone and charcoal and some possible postholes in the west of the field.	Laydown Area
18	Consists of two points of focus - A number of stone filled pits and linear features.	Laydown Area
20	A large charcoal production pit, a possible hearth and a number of possible postholes in the east of the field.	Laydown Area
21	Merged with area 3.	Adjacent to buffer zone and boundary fence
23	Two stripped areas around several deposits of burnt mound material and associated features.	Access Road
24	Consists of two points of focus - Possible habitation area (structure) and associated pits and postholes.	Access Road
26 & 27	Burnt mound deposits and associated features on either side of the stream. A series of post holes and burnt material found in the east side of the field.	Access Road
28	A deposit of burnt mound material.	Access Road
31	A linear feature and a burnt deposit.	Laydown Area

Area number	Summary of Archaeological Features Identified	Location within the Proposed Development
32	A possible hearth and several sub-oval charcoal-rich features.	Site Pad
33	Consists of three points of focus. Two small features in the south of the field A curvilinear feature further by the stream.	Laydown Area
34	Consists of three points of focus around the isolated features identified in the south and southeast of the field.	Access Road
35	Consists of two points of focus - Two small burnt Mound deposits.	Site Pad
36	Consists of two points of focus around a posthole, a charcoal rich pit and a charcoal rich linear scattered throughout the field.	Laydown Area
38	A charcoal-rich pit.	Site Pad
39	Consists of two points of focus - A charcoal rich linear feature and a deposit of heat shattered stone and charcoal.	Site Pad
50	A possible posthole in the southwest of the field.	Laydown Area

Source: Long and O'Malley, 2009

These assets are likely to be of **local** interest and of **Low** importance although it is noted that the designation of identified / potential archaeological features may be higher than local significance in certain instances and this will only be determined through further investigation namely archaeological excavation. These will be impacted by groundworks associated with the construction phase. The impacts will result in the permanent removal of these assets. The magnitude of impact is judged to be **Very High**, the significance of which will be **Significant, Negative** and **Permanent**.

Further Areas of Archaeological Potential are located outside but adjacent to the Proposed Development. There is the possibility that these could be impacted by changes in hydrology brought about by the construction works. Changes in hydrology resulting during the construction are fully discussed in **Chapter 06** (Water). These changes will have a magnitude of impact of low as defined by the criteria in **Table 12.3** leading to a significance of effect of **Slight**, as defined by the criteria in **Table 12.4**. The **Slight** significance of effect will be **Short-Term** and **Neutral**. Any impacts to the further Areas of Archaeological Potential will be **Imperceptible**.

Similarly, Areas of Archaeological Potential located within adjacent areas of the development previously consented in 2008 will not be impacted upon by the Proposed Development. These assets will remain *in situ* and there will be **No Impact**.

It should be noted that subsequent planning application was granted in 2012 under planning permission (ABP 08.PA0028) in relation to the construction of a CHP plant on Knockinglas Point. The footprint of the CHP plant was largely outside the area to be disturbed by the original LNG plant and, therefore, parts of it were not subject to archaeological trenching in 2008.

Condition 24 of the planning permission (ABP 08.PA0028) states that further archaeological testing should be carried out within the untested area prior to the resolution of the Areas of Archaeological Potential identified during archaeological testing in 2008.

The CHP plant is no longer required under the current proposals with the result that this area will not now be developed under planning permission (ABP 08.PA0028). The proposed location of the CHP plant is outside the boundaries of the Proposed Development and will not be impacted during the

construction phase. There will be no impact to the previously untested areas. Given this, the requirement for further archaeological testing is unnecessary.

12.7.2 Operational Phase

All physical impacts to known and unknown heritage assets will occur during the construction phase and there is no requirement for mitigation measures during the operational phase.

12.8 Cumulative Impacts and Effects

The footprint of the current Proposed Development was subject to a previous planning application for an LNG regassification terminal which was granted permission in 2008 (PL08B. PA0002 now expired) with an amendment to the phasing of the construction granted in 2013 (PL08.PM0002). Similarly, permission for the combined heat and power plant was granted in 2013 (PL08. PA0028). Foreshore licence applications have also been granted for the following – drainage outfall (FS006224), construction of a liquified natural gas jetty (FS006225), construction of a materials jetty (FS006227), construction of a seawater intake and outfall (FS006228),

The current Proposed Development is intended to replace the facilities granted planning permission under (PL08.PM0002) and (PL08. PA0028). There will be no cumulative impact with these planning permissions.

12.8.1.1 SLNG Strategic Gas Reserve Facility

The location of the Proposed Development is the subject of a SID pre-application for a Proposed Shannon Technology and Energy Park (STEP) Strategic Gas Reserve Facility (APB-319245-24) comprising of a floating storage and regasification unit (FSRU), jetty and access trestle, onshore receiving facilities, and all ancillary works.

A pre-application was submitted to An Bord Pleanála (ABP) on 8th March 2024, and a request for a pre-application consultation meeting is pending from the Board.

The Proposed STEP Strategic Gas Reserve Facility (APB-319245-24) will include onshore facilities, jetty and FSRU which will extend into the Shannon Estuary at the north-east corner of the Site.

This development could have the potential to cause impact to the setting of a Medium Value heritage asset during the construction phase. The Medium Value assets is the Protected Structures Lookout Post / Searchlight Emplacement (RPS-KY-087) which is located 250 m to the south of the jetty.

The Lookout Post / Searchlight Emplacement is located on a ridge overlooking the shoreline with its main aspect facing out to sea away from the Proposed Development and directly towards the location of the jetty. Both and jetty and the Proposed Development will be clearly visible from the Lookout Post / Searchlight Emplacement especially the jetty which will be located in its direct line of sight.

The presence of the Proposed Development and the jetty will alter the environs of the Protected Structure which are currently rural. While this will create a very noticeable change, the presence of these will not impact our ability to understand or appreciate the purpose of the Lookout Post / Searchlight Emplacement or its relationship with the other structures in Fort Shannon.

The setting of the Lookout Post / Searchlight Emplacement may be impacted by noise, dust and vibration from the construction works associated with the Proposed Development and the jetty but it is

not anticipated that these will occur concurrently and will generally cease as the Proposed Development is completed. It is anticipated that noise from the Proposed Development will continue during the operational phase and this could combine with noise from the construction of the jetty to create a cumulative impact. The Lookout Post / Searchlight Emplacement is located on a ridge overlooking the shoreline with its main aspect facing out to sea away from the Proposed Development. The Proposed Development will be clearly visible from the Lookout Post / Searchlight Emplacement especially the adjacent security fence and the power station buildings which will be the largest structure within the area.

The presence of the Proposed Development will alter the environs of the Protected Structure which are currently rural. While this will create a very noticeable change, the presence of the Proposed Development will not impact our ability to understand or appreciate the purpose of the Lookout Post / Searchlight Emplacement or its relationship with the other structures in Fort Shannon. Additionally, the Lookout Post / Searchlight Emplacement was specifically placed to overlook and illuminate a specific section of the Shannon Estuary. The Proposed Development will not be visible in views of this section.

The setting of the Lookout Post / Searchlight Emplacement may be impacted by noise, dust and vibration from the construction works but these will generally cease as the Proposed Development is completed, although noise from the Proposed Development will continue during the operational phase. There is the possibility that this noise could combine with construction noise from the jetty to create a cumulative impact upon the setting of the Lookout Post / Searchlight Emplacement. The change to setting will be such that the special interests or qualities of the asset are slightly affected without a noticeable change. The significance of the cumulative effect is judged to be **Moderate**.

12.8.1.2 SLNG Gas Pipeline

The Proposed Development will be connected to the existing natural gas network at Leahy's, located to the west of Foynes, in Co. Limerick by an underground gas pipeline which was granted planning permission in 2009 (PL08.GA0003). The gas pipeline is key to the operation of the Proposed Development (Power Plant) so will likely be constructed at the same time. This development could have the potential to cause impact to the setting of the Medium Value heritage assets during the construction phase. The Medium Value assets are the Protected Structures Lookout Post / Searchlight Emplacement (RPS-KY-087) and Ralapanne House (RPS KY 003-001) which are located 409 m to the north and 170 m to the west of the route of the gas pipeline respectively.

The laying of the gas pipeline will create noise which, when combined with construction noise from the Proposed Development, will likely create a temporary cumulative impact upon the settings of Lookout Post / Searchlight Emplacement (RPS-KY-087) and Ralapanne House (RPS KY 003-001). No specific mitigation for setting has been proposed in this chapter, as it is noted that this impact is temporary and limited to the construction phase. The significance of the cumulative effect is judged to be **Slight**.

12.8.1.3 High Voltage 220 kV and Medium Voltage (10 / 20 kV) Power Transmission Networks

There are two other developments associated with the Proposed Development comprising the laying of medium voltage (10 / 20 kV) and 220 kV underground cables which will connect the Shannon Technology and Energy Park (STEP) Power Plant to connect to the national electrical transmission network.

These cables will run 5 km east from a substation within the Proposed Development under the L1010 road to the ESBN / EirGrid Killpaddogue 220 kV substation. The development of the grid connection will be subject to a separate planning application and associated EIAR by the Applicant once the precise connection details are known.

These developments have the potential to cause impact to the known and unknown archaeological assets within the Proposed Development and should be subject to their own surveys and archaeological investigations carried out under licence. The construction of the substation and laying of the underground cables could impact upon the setting of the Medium Value heritage assets during the construction phase. The Medium Value assets are the Protected Structures Lookout Post / Searchlight Emplacement (RPS-KY-087) and Ralapane House (RPS KY 003-001). Lookout Post / Searchlight Emplacement (RPS-KY-087) is located 1.09 km to the north of the L1010 road and 882 m to east of the location of the substation. Ralapane House (RPS KY 003-001) is located 373 m to the north of the L1010 road and 482m to the south-east of the location of the substation. The laying of the underground cables and construction of the substation will create noise and vibration which, when combined with construction noise and vibration from the Proposed Development could create a temporary impact upon the settings of Lookout Post / Searchlight Emplacement (RPS-KY-087) and Ralapane House (RPS KY 003-001). Given the intervening distances, it is unlikely that these will combine with construction noise and vibration from the Proposed Development to create a cumulative impact upon the settings of Lookout Post / Searchlight Emplacement and Ralapane House during the construction phase. There will be **No Impact**.

12.8.1.4 Data Centre Campus

The overall masterplan for the Energy Park includes plans for the future development of a data centre within the lands south-west of the Proposed Development. These lands were investigated during the previous ES in 2006 and subsequent planning conditions and are known to contain Cultural Heritage assets and Areas of Archaeological Potential. Construction works associated with the data centre will impact upon these. The data centre will be subject to a separate planning design and planning application and should be subject to their own surveys and archaeological investigations carried out under archaeological licence to the NMS.

The Proposed Development and the data centre will not be constructed simultaneously and there will be no cumulative impacts during the construction phase arising from noise or vibration. The visual presence of the data centre could impact upon the setting of the Medium Value heritage assets during the construction and operation phases. The Medium Value assets are Protected Structures Lookout Post / Searchlight Emplacement (RPS-KY-087) and Ralapane House (RPS KY 003-001) which is located 1.13 km and 710 m to the east respectively. The visual presence of the data centre combined with the visual presence of the completed Proposed Development could combine to create a cumulative impact upon the settings of Lookout Post / Searchlight Emplacement (RPS-KY-087) and Ralapane House (RPS KY 003-001). Given the intervening distances and topography, it is unlikely that these will be visible from Lookout Post / Searchlight Emplacement and Ralapane House and there should not be a cumulative impact upon the settings of either during the construction and operation phases. There will be **No Impact**.

12.8.1.5 L1010 Road Works

Kerry Co. Co. are undertaking a widening scheme of the L1010 road which is to be completed prior to the start of the main construction elements but may overlap with the enabling works. It is therefore assumed that the L1010 works would be completed by Month 8 of the construction schedule, when work starts on the 220 kV substation.

The L1010 road works could impact upon the setting of the High Value heritage assets during the construction phase. The High Value asset is the Protected Structure Ralapane House (RPS KY 003-001) which is located 373 m to the north of the L1010 road. The L1010 road works will create noise and vibration which, when combined with construction noise and vibration from the enabling works of the Proposed Development could create a Temporary impact upon the setting of Ralapane House (RPS KY 003-001). Given the intervening distances, it is unlikely that these will combine with construction noise and vibration from the Proposed Development to create a cumulative impact upon the setting of Ralapane House during the construction phase. The significance of this cumulative effect is judged to be **Slight**.

12.8.1.6 Other Applications

Ten further planning applications are noted within approximately 5 km of the current Proposed Development over a 10-year period. Six of these applications (13138, 155, 18392, 18878, 19115 and 20850) relate to various elements of an electricity peaking power generating plant and battery energy storage system facility on a site 2.6 km to the east of the Proposed Development. Elements of this development have already been constructed which is located on a site 2.6 km to the east of the Proposed Development. Given the distance between these two developments, which includes an intervening dense mature tree plantation, it is unlikely that construction noise will combine to create a cumulative impact upon the settings of the Medium Value assets, including the Lookout Post / Searchlight Emplacement (RPS-KY-087) and Ralapane House (RPS KY 003-001). There will be **No Impact**.

12.8.2 Intertidal Applications / Foreshore Applications

Planning application 14816 relates to the alteration of the existing 220 kV electricity station at Tarbert Island 4.5 km to the east of the Proposed Development. Given the distance between these two developments, which includes an intervening dense mature tree plantation, it is unlikely that construction noise will combine to create a cumulative impact upon the setting of the Medium Value assets, including the Lookout Post / Searchlight Emplacement (RPS-KY-087) and Ralapane House (RPS KY 003-001).

Planning applications 14816 and 17466 relate to alterations to the permitted accesses to Leenamore wind farm as well as the provision of a new substation compound with a single storey substation building and associated underground services. Leenamore wind farm is located 4 km to the south of the Proposed Development. It is unlikely that construction of these alterations will combine to create a cumulative impact with the Proposed Development given the intervening distance and topography between them.

Similarly, the last planning application (304807-19) concerns the construction of a six-wind turbine wind farm at Aghanagran to the southwest of the village of Ballylongford approximately 5 km from the Proposed Development. It is unlikely that the construction of the wind farm will combine to create a

cumulative impact with the Proposed Development given the intervening distance and topography between them.

The following foreshore licence applications are also noted outside the 5 km of the Proposed Development. These are mostly associated with the Shannon-Foynes Port company at Foynes comprising the applications FS005818, FS005790, FS006128, FS006594, FS006785, FS006837 and FS006975. Foynes is 22 km from the Proposed Development and too far away for there to be a cumulative impact. Similarly, the application FS007081 is located at Cahiracon in Co. Clare which is 24 km to the north-east of the Proposed Development across the Shannon Estuary. This is too far away for there to be a cumulative impact.

12.9 Mitigation Measures

Full resolution of all archaeological sites and areas identified during archaeological testing within the Site boundary will be carried out at the pre-construction phase. All archaeological works (which will be agreed by the Archaeological Consultant and the NMS) will be carried out in compliance with the National Monuments Acts 1930-2004 (and Policy and Guidelines on Archaeological Excavation (Department of Arts, Heritage Gaeltacht and the Islands (DAHGL) 1999) and in accordance with the Construction Environmental Management Plan (CEMP).

A suitably qualified and licensed Archaeological contractor will be appointed to carry out the archaeological fieldwork. Relevant licences will be acquired from the DCHG / NMS and the National Museum of Ireland (NMI) for all archaeological works, which will be carried out in accordance with an Overarching Method Statement for Archaeological Works prepared by the Archaeological Consultant and agreed with the NMS. It is anticipated that all archaeological works will be completed prior to enabling works commencing on the Site at the start of construction.

12.9.1 Construction Phase

It is anticipated that the archaeological mitigation programme will commence prior to the start of the main construction works pre enabling works, refer to **Figure F12.7**, Volume 3.

During Phase 1 (prior to the enabling works as soon as access is available or during if necessary) – all archaeological sites and areas that require preservation by record will be investigated. This will also determine the scope of further mitigation works. A General Watching Brief (GWB) will be carried out for ground works, such as utility diversions, road diversions and ecology works.

In line with the recommendations for mitigation outlined in the 2008 testing report (Long and O'Malley, 2009), the following specific mitigation measures are proposed for the archaeological sites located within the Site:

- Areas of excavation around the known archaeological sites and areas will include a 5 m buffer zone as a minimum between the edge of the site and any archaeological features. Should previously unknown archaeological features be identified then the excavation area will be expanded to ensure the 5 m buffer zone is maintained.
- It is noted that the archaeological deposits within Area 6 Post-Medieval Habitation site and Area 11 Enclosure are particularly close to the surface and are vulnerable to disturbance. A topographic survey will be carried out in advance of archaeological excavations to record

potentially significant anomalies in the ground surface which could otherwise be damaged by plant moving over the area.

- The removal of topsoil in parts of Areas 6 Post-Medieval Habitation site and Area 11 Enclosure will be performed by mini-digger to reduce the potential of damage caused by plant tracking over the shallow archaeological features.
- A photographic survey and written description of CH6 Well will be carried out in advance of groundworks within the vicinity of this asset. The dismantling of the well will be carried out in an orderly fashion under the supervision of a suitably qualified archaeologist.

Phase 2 will take place during later enabling works and in advance of and concurrent with construction) – the GWB will be undertaken in all other areas where it is required, in particular in areas which have not been subject to previous archaeological testing. The construction of the stormwater Outfall Pipe and other works on the foreshore will also be archaeologically monitored under licence by a suitably qualified and experienced maritime archaeologist.

Phase 3 – a post-excavation assessment will be undertaken in accordance with DCHG / NMS advice, followed by an appropriate scheme of detailed analysis and reporting. Phase 3 will commence as soon as practicable following completion of the main investigative works.

12.9.2 Operational Phase

No additional mitigation measures are required for the operational phase of the Proposed Development.

12.10 Do Nothing Scenario

The 'do nothing' scenario will not result in any significant changes to the baseline cultural heritage resource. The magnitude of impact will be no change leading to a significance of effect of **Neutral**.

12.11 Residual Impacts and Effects

A summary of residual effects is provided in **Table 12.8**. Only those assets where an impact has been identified are discussed in this section. Those assets where no impact has been identified are not included.

Lookout Post / Searchlight Emplacement (RPS-KY-087) has been identified as experiencing a **low** impact from the Proposed Development during construction and operation. The residual significance of effect will be **Slight, Long-Term** and **Neutral** and therefore **Not Significant**

Ralapane House (RPS KY 003-001) has been identified as experiencing a **Low** impact from the Proposed Development during construction. This impact will be short-term and will cease once construction is complete. The residual significance of effect will be **Slight, Long-Term** and **Neutral** and therefore **Not Significant**.

CHS4 farm complex will experience a **Very High** impact (demolition in advance of groundworks) from the Proposed Development. Based on the results of the baseline report, it is assessed that this asset is of local value. No mitigation is proposed as this asset was subject to upstanding building recording. This provides a record of the asset and the residual effect is therefore assessed to be **Moderate, Negative** and **Permanent** and therefore **Significant**.

CHS5 Possible Archaeological Feature will experience a **Very High** impact from groundworks associated with the Proposed Development. Mitigation has been proposed in the form of archaeological monitoring and excavation, if appropriate, to determine the presence / absence of such features and to preserve them by record. Based on the results of the baseline report, it is assessed that previously unrecorded archaeological assets within the Site are likely to be of local value. The residual effect is therefore assessed to be **Moderate, Negative and Permanent** and therefore **Significant**.

CHS6 well will experience a **Very High** impact from groundworks associated with the Proposed Development. Based on the results of the baseline report, it is assessed that this asset is of local value. Mitigation has been proposed in the form of a photographic survey and written description of CHS6 Well which should be carried out in advance of groundworks within the vicinity of this asset. It is also recommended that the dismantling of the well be carried out in an orderly fashion under the supervision of a suitably qualified archaeologist. This will provide a record of the asset and the residual effect is therefore assessed to be **Moderate, Negative and Permanent** and therefore **Significant**.

CHS7 gun emplacement will experience a **Very High** impact (demolition in advance of groundworks) from the Proposed Development. Based on the results of the baseline report, it is assessed that this asset is of local value. No mitigation is proposed as this asset was subject to upstanding building recording. This provides a record of the asset and the residual effect is therefore assessed to be **Moderate, Negative and Permanent** and therefore **Significant**.

CHS15 two-bay structure will experience a **Very High** impact (demolition in advance of groundworks) from the Proposed Development. Based on the results of the baseline report, it is assessed that this asset is of local value. No mitigation is proposed as this asset was subject to upstanding building recording. This provides a record of the asset and the residual effect is therefore assessed to be **Moderate, Negative and Permanent** and therefore **Significant**.

Known areas of archaeological potential will experience a **Very High** impact from groundworks associated with the Proposed Development. Mitigation has been proposed in the form of archaeological monitoring and excavation, if appropriate, to determine the presence / absence of such features and to preserve them by record. Based on the results of the baseline report, it is assessed that previously unrecorded archaeological assets within the site are likely to be of local value. The residual effect is therefore assessed to be **Moderate, Negative and Permanent** and therefore **Significant**.

Potential currently unrecorded archaeological deposits which are likely to be present within the Site will experience a **Very High** impact from the Proposed Development. Mitigation has been proposed in the form of archaeological monitoring and excavation, if appropriate, to determine the presence / absence of such features and to preserve them by record. Based on the results of the baseline report, it is assessed that previously unrecorded archaeological assets within the Site are likely to be of local value. The residual effect is therefore assessed to be **Moderate, Negative and Permanent** and therefore **Significant**.

Table 12.8: Residual Impacts

Asset Reference	Importance	Description of Impact (Type, Duration)	Magnitude of Impact	Significance of Effect	Mitigation	Residual Effect
Lookout Post / Searchlight Emplacement (RPS-KY-087)	Regional	Long-term negative impact upon the setting of the asset.	Low	Slight Long-Term Neutral	Not applicable	Slight Long-Term Neutral
Ralapane House (RPS KY 003-001)	Regional	Temporary negative impact upon the setting of the asset during construction of the Proposed Development.	Low	Slight Short-Term Neutral	Not applicable	Slight Long-Term Neutral
CHS 4 Farm Complex	Local	Permanent physical negative impact through construction of the Proposed Development.	Very high	Significant Permanent Negative	Not applicable	Moderate Permanent Negative
CHS 5 Possible Archaeological Feature (AAP 11)	Local	Permanent physical negative impact through construction of the Proposed Development.	Very high	Significant Long-Term Negative	Archaeological excavation and recording	Moderate Long-Term Negative
CHS 6 well	Local	Permanent physical negative impact through construction of the Proposed Development.	Medium	Significant Permanent Negative	A photographic survey and written description of CHS6 Well should be carried out in advance of groundworks within the vicinity of this asset. It is also recommended that the dismantling of the well be carried out in an orderly fashion under the supervision of a suitably qualified archaeologist.	Moderate Permanent Negative
CHS 7 Gun Emplacement	Local	Permanent physical negative impact through construction of the Proposed Development.	Very high	Significant Permanent Negative	Not applicable	Moderate Permanent Negative
CHS 15 two-bay structure	Local	Permanent physical negative impact through construction of the Proposed Development.	Very high	Significant Permanent Negative	Not applicable	Moderate Permanent Negative
Known areas of archaeological potential	Local	Permanent physical negative impact through construction of the Proposed Development.	Very high	Significant Long-Term Negative	Archaeological excavation and recording	Moderate Long-Term Negative

Asset Reference	Importance	Description of Impact (Type, Duration)	Magnitude of Impact	Significance of Effect	Mitigation	Residual Effect
Potential unrecorded archaeological assets	Local	Permanent physical negative impact through construction of the Proposed Development.	Very high, if present	Significant Long-Term Negative	Archaeological testing / monitoring, excavation and recording, if required.	Moderate Long-Term Negative

12.12 Decommissioning Phase

As outlined in **Chapter 02** (Description of the Proposed Development) in the event of decommissioning, measures will be undertaken by the Applicant to ensure that there will be **No Significant, Negative** environmental effects from the Proposed Development.

Examples of the measures that will be implemented are outlined in Section 2.10, **Chapter 02**. As a result, additional potential impacts and associated effects arising during the decommissioning phase are not anticipated above and beyond those already assessed during the construction phase.

12.13 Summary

The Proposed Development will impact upon known and unknown archaeological and architectural assets. Mitigation has been proposed to reduce this impact which will ensure any archaeological and architectural assets are identified and recorded to best practice thereby enriching the known heritage of Co. Kerry.

Table 12.9: Summary

Proposed Development Phase	Aspect / Impact Assessed	Existing Environment / Receptor Sensitivity	Effect / Magnitude	Significance (Prior to Mitigation)	Mitigation and Monitoring Measures (the Proposed Development design embedded environmental controls and all mitigation and monitoring measures detailed herein are included in the CEMP)	Residual Effect Significance
Construction	CHS 4 farm complex / destruction through groundworks	Low	Very high	Significant	This asset has already been subject to recording in the form of upstanding building survey to satisfy the condition upon Planning Permission (Condition 32 C 08.PA0002). While this asset will be significantly impacted by the Proposed Development, no further mitigation is required.	Moderate
Construction	CHS 5 Possible Archaeological Feature / destruction through groundworks	Low	Very high	Significant	Full resolution of all archaeological sites and areas identified during archaeological testing within the scheme boundary will be carried out at the pre-construction phase. All archaeological works (which will be agreed by the Archaeological Consultant and the NMS) will be carried out in compliance with the National Monuments Acts 1930 – 2004 (and Policy and Guidelines on Archaeological Excavation (Department of Arts, Heritage Gaeltacht and the Islands, 1999)).	Moderate
Construction	CHS 6 Well / destruction through groundworks	Low	Very high	Significant	It is recommended that a photographic survey and written description of CH6 Well be carried out in advance of groundworks within the vicinity of this asset. It is also recommended that the dismantling of the well be carried out in an orderly fashion under the supervision of a suitably qualified archaeologist	Moderate
Construction	CHS 7 Gun Emplacement / destruction through groundworks	Low	Very high	Significant	This asset has already been subject to recording in the form of upstanding building survey to satisfy the condition upon Planning Permission (Condition 32 C 08.PA0002). While this asset will be significantly impacted by the Proposed Development, no further mitigation is required.	Moderate
Construction	CHS 15 Well / destruction through groundworks	Low	Very high	Significant	This asset has already been subject to recording in the form of upstanding building survey to satisfy the condition upon Planning Permission (Condition 32 C 08.PA0002). While this asset will be significantly impacted by the Proposed Development, no further mitigation is required.	Moderate
Construction	Known Areas of Archaeological Potential / destruction through groundworks	Low	Very high	Significant	Full resolution of all archaeological sites and areas identified during archaeological testing within the scheme boundary will be carried out at the pre-construction phase. All archaeological works (which will be agreed by the Archaeological Consultant and the NMS) will be carried out in compliance with the National Monuments Acts 1930 – 2004 (and Policy and Guidelines on Archaeological Excavation (Department of Arts, Heritage Gaeltacht and the Islands, 1999)).	Moderate

Proposed Development Phase	Aspect / Impact Assessed	Existing Environment / Receptor Sensitivity	Effect / Magnitude	Significance (Prior to Mitigation)	Mitigation and Monitoring Measures (the Proposed Development design embedded environmental controls and all mitigation and monitoring measures detailed herein are included in the CEMP)	Residual Effect Significance
Construction	Previously unknown archaeological features / destruction through groundworks	Low	Very High	Significant	A General Watching Brief (GWB) will be carried out for ground works by a suitably qualified archaeologist in compliance with the National Monuments Acts 1930 – 2004 (and Policy and Guidelines on Archaeological Excavation (Department of Arts, Heritage Gaeltacht and the Islands, 1999).	Moderate
Construction	CHS10 Ringfort (KE003-004)	Low	Very High	Significant	Embedded mitigation in design comprising a buffer zone established around the asset to preserve in situ. The buffer zone will be defined by a permanent fence line.	No Effect
Construction	Lookout Post / Searchlight Emplacement (RPS-KY-087)	Medium	Low	Low	Asset is located immediately adjacent to the Proposed Development construction works. Embedded mitigation in design comprising a buffer zone established around the asset to prevent incursion during construction.	No Effect
Construction	Marine Anomaly A8	Medium	Low	Low	Asset is located over 390 m from the Proposed Development construction works. Embedded mitigation in design comprising a 50 m buffer zone established around the asset to prevent incursion during construction.	No Effect

12.14 References

- Aalen, F.H.A, Whelan, K. & Stout, M. (1997). *Atlas of the Irish Rural Landscape*. Cork University Press.
- AMS (2023). *Shannon LNG Pipeline Project, County Kerry, and County Limerick: Archaeological Geophysical Survey*. Unpublished report.
- AMS (2024a) *Report on Intertidal Survey at Ralappane and Carhoonakineely, Co. Kerry*. Unpublished report prepared for New Fortress Energy.
- AMS (2024b) *DRAFT Report on Marine Geophysical Survey for Archaeological Purposes at Ralappane and Carhoonakineely, Co. Kerry*. Unpublished report prepared for New Fortress Energy.
- Arup Consulting Engineers (2007). *Shannon LNG Terminal Environmental Impact Statement*.
- Boland, D., (2006). *Marine Geo-archaeological Survey: Proposed Gas Terminal, Site Investigation Phase, Unpublished report*.
- Cork County Council (Cork Co. Co.) (2006). *Guidance Notes for the Appraisal of Historic Gardens, Demesnes, Estates and their Settings*.
- CRDS Ltd. (2008). *Shannon LNG Stream Assessment. Unpublished report*.
- Dargan, P., (2017). *Ireland's Emergency Fortress. Fort Shannon, County Kerry*.
- Department of Arts, Heritage and the Gaeltacht (DAHG) (2002). *National Heritage Plan*.
- Department of Arts, Heritage and the Gaeltacht (DAHG) (2004). *Architectural Heritage Guidelines, (revised 2011)*.
- Department of Arts, Heritage and the Gaeltacht (DAHG) (2013). *National Inventory of Architectural Heritage Handbook*.
- Department of Arts, Heritage, Gaeltacht and the Islands (DAHGI) (1999a). *Framework and Principles for the Protection of the Archaeological Heritage*. Dublin. Government Publications Office.
- Department of Arts, Heritage, Gaeltacht and the Islands (DAHGI) (1999b). *Policy and Guidelines on Archaeological Excavation*. Dublin. Government Publications Office.
- Environmental Protection Agency (EPA) (2022). *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*.
- Excavations.ie. *Database of Irish Excavation Reports*. Available at: <https://www.excavations.ie/>
- Historic Environment (HE) (2017). *Historic Environment Good Practice Advice in Planning: Note 3 (Second Edition) – The Setting of Heritage Assets* Historic England.
- Joyce, PW. (1913). *Irish Names of Places (3 vols)*. Dublin, Phoenix.
- Kerry County Council (Kerry Co. Co.) (2022). *Kerry County Development Plan 2022-2028*.
- Kerry County Council (Kerry Co. Co.) *Kerry County Development Plan 2022-2028*. Record of Protected Structures.
- Laban (2009). *Report on an Architectural Survey carried out on the proposed Shannon LNG Site in the Townlands of Ralappane and Kilcolgan Lower, Kilnaughtin Parish, Co. Kerry* published as part of EIS.
- Lane (2006). *Chapter 14: Archaeological, Architectural and Cultural Heritage*. In Arup (Ed) Shannon LNG Terminal, Environmental Impact Statement, Arup Consulting Engineers.
- Lane (2012). *Chapter 16: Archaeological, Architectural and Cultural Heritage*. In Arup (Ed) Shannon LNG CHP Plant, Environmental Impact Statement, Arup Consulting Engineers.
- Lewis, S. (1837). *Topographical Dictionary of Ireland on-line*.
- Long & O'Malley, (2009). *Report on Archaeological Test Trenching carried out on the proposed Shannon LNG Site in the Townlands of Ralappane and Kilcolgan Lower, Kilnaughtin Parish, Co. Kerry, Vols.1&2 published as part of EIS*.
- Mooney, C, (1956). *Franciscan Architecture in Pre-Reformation Ireland (Part II) in The Journal of the Royal Society of Antiquaries of Ireland Vol 86, No. 2*.
- National Inventory of Architectural Heritage Buildings Survey and Garden Survey. Available at: www.buildingsofireland.ie/Surveys/

National Monument Section, Department of Culture, Heritage and the Gaeltacht (DCHG). *Sites and Monuments Record, County Meath*. Available at: www.archaeology.ie.

National Monuments Acts (1930 – 2004). *Irish Statute Book*. Government of Ireland.

National Roads Authority (NRA) (2006). *Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes*. Dublin.

National Roads Authority (NRA) (2007). *Guidelines for the Assessment of Architectural Heritage Impacts of National Road Schemes*. Dublin.

Nicholls, J. October (2006). *Geophysical Survey Report: Ballylongford, County Kerry*. Unpublished report.

O' Leary, M. August (2006). *Aerial Archaeological Survey, Ballylongford Kerry*. Unpublished report.

O'Danachair, C, 1958. *The Holy Wells of North County Kerry in The Journal of the Royal Society of Antiquaries of Ireland Vol LXXXVIII*.

O'Donovan, J., (1841). *Ordnance Survey of Ireland: Letters, Kerry*.

O'Leary M., (2007). *Archaeological Architectural and Cultural Heritage section of EIS for proposed Shannon LNG site*. published as part of EIS.

Planning and Development Act 2000 (Revised) Updated to 16th July 2021.

Planning and Development Regulations 2001 (as amended). Irish Statute Book. Government of Ireland.

Planning Policy 2002. *Irish Statute Book*. Government of Ireland.

The Heritage Acts 1995 and 2018. *Irish Statute Book*. Government of Ireland.

The Heritage Council (2000). *Archaeology & Development: Guidelines for Good Practice for Developers*. The Heritage Council, Dublin.

