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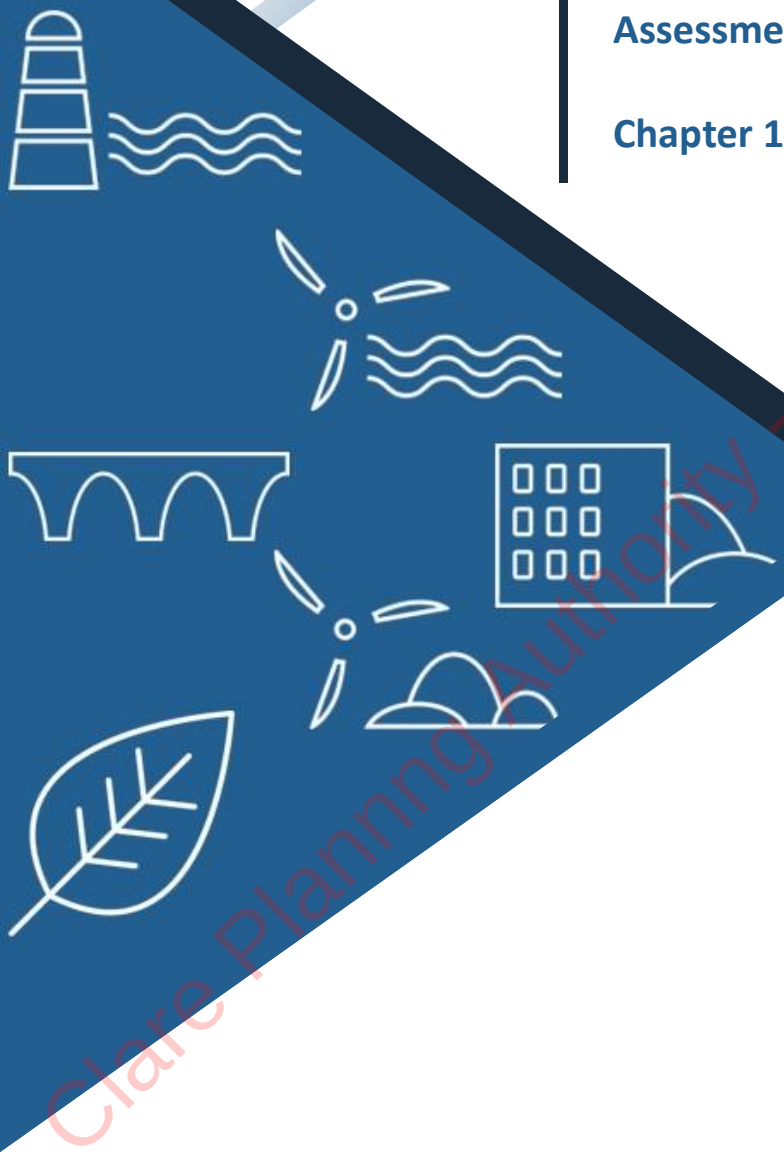
Illaunbaun Wind Farm - Environmental Impact Assessment Report

Chapter 16 – Archaeological & Cultural Heritage



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ACRONYMS

ACA	Architectural Conservation Area
AH	Archaeological Heritage
ASI	Archaeological Survey of Ireland
BA	Bachelor of Art
CDP	County Development Plan
CH	Cultural Heritage
DAHG	Department of Arts, Heritage, Gaeltacht and the Islands
DHLGH	Department of Housing, Local Government and Heritage
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
GIS	Geographic Information System
ICOMOS	International Council on Monuments and Sites
ITM	Irish Transverse Mercator
LAP	Local Area Plan
NCRBS	North Clare Road Bridge Survey
NIAH	National Inventory of Architectural Heritage
NMI	National Museum of Ireland
NMS	National Monuments Service
OS	Ordnance Survey
PO	Preservation Order
PV	Photovoltaic
RMP	Record of Monuments and Places
RPS	Record of Protected Structures
SEA	Strategic Environmental Assessment
SMR	Sites and Monuments Record
TII	Transport Infrastructure Ireland
UNESCO	United Nations Educational, Scientific and Cultural Organization
WTG	Wind Turbine Generator

GLOSSARY OF TERMS

Bivallate	Bivallate describes a ringfort with two sets of defensive banks and ditches
Cumulative impacts	'The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects' (EPA, 2022a).
Indirect impact	'Impacts on the environment, which are not a direct result of the project, often produced away from (the site) or as a result of a complex pathway' (EPA, 2022a).
Mitigation	Measure or action which would avoid, reduce, or remediate an impact.

16 CULTURAL HERITAGE

16.1 INTRODUCTION

This chapter of the Environmental Impact Assessment (EIA) Report presents the assessment of the likely significant effects (as per the "EIA Regulations") of the Proposed Development on Cultural Heritage arising from the construction and operation of the Proposed Development, both alone and cumulatively with other plans and projects, and was determined following the issue of the *Illaunbaun Wind Farm - Environmental Impact Assessment Scoping Report* to stakeholders described in Chapter 6: Project Scoping and Consultation.

The primary purpose of this report is to describe the cultural heritage[1] of the receiving environment and analyse any potential development related effects on it.

This chapter comprises of the following elements:

- Summary of relevant policy and guidance
- Data sources used to characterise the Study Area
- Summary of consultations with stakeholders
- Methodology followed in assessing the impacts of the Proposed Development (such as information of the Study Area and the approach taken in assessing the potential impacts)
- Review of baseline conditions
- Assessment of likely effects arising from the construction and operation of the Proposed Development
- Identification of further mitigation measures and/or monitoring requirements (if any) in respect of any significant effects (following the 'mitigation hierarchy' of avoidance, minimisation, restoration and offsets in consecutive order)
- Summary of residual impact assessment determinations in the case of any additional mitigation measures identified during this process.

16.1.1 RELEVANT LEGISLATION AND GUIDELINES

The following policy, legislation, plans and guidance are considered applicable to this chapter.

16.1.1.1 NATIONAL AND INTERNATIONAL LEGISLATION

- Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 1999.
- Council of Europe (1985). Convention for the Protection of the Architectural Heritage of Europe (ratified by Ireland 1997), 'Granada Convention'.

[1] Cultural Heritage is a broad term that includes Archaeological Heritage, Built (Architectural) Heritage, Portable Heritage, Intangible Cultural Heritage, and other resources inherited from the past by contemporary society.

- Council of Europe (1992). European Convention on the Protection of the Archaeological Heritage (ratified by Ireland 1992), 'Valletta Convention'
- Council of Europe (2005). Framework Convention on the Value of Cultural Heritage for Society, 'Faro Convention'.
- Heritage Act, 2018
- Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023. This Act was enacted in October 2023, and while this Act is now law. The Minister for Housing, Local Government and Heritage commenced certain provisions in May 2024 (S.I. No. 252/2024), however, until this Act is fully commenced, the National Monuments Acts have therefore not yet been repealed and remain in force.
- International Council on Monuments and Sites (ICOMOS) Xi'an Declaration on the Conservation of the Setting of Heritage Structures, Sites and Areas, 2005.
- National Monuments Act, 1930 to 2014.
- The UNESCO World Heritage Convention, 1972.

16.1.1.2 RELEVANT POLICIES AND PLANS

- Built and Archaeological Heritage: Climate Change Sectoral Adaptation Plan, Department of Cultural, Heritage and the Gaeltacht, September 2019.
- Code of Practice for Archaeology agreed between the Minister for Arts, Heritage, Regional, Rural and Gaeltacht Affairs and Transport Infrastructure Ireland, 2017.

16.1.1.3 GUIDANCE

- Department of Arts, Heritage, Gaeltacht and the Islands (DAHG) (1999). Framework and Principles for the Protection of the Archaeological Heritage.
- Guidelines for Cultural Heritage Impact Assessment of TII National Road and Greenway Projects (February 2024) (hereafter referred to as TII Guidelines).
- Historic England (2017). The Setting of Heritage Assets, Historic Environment Good Practice Advice in Planning Note 3 (Second Edition).
- ICOMOS (2011). Guidance on Heritage Impact Assessments for Cultural World Heritage Properties.
- Monitoring Impacts of Climate Change on Built Heritage, Report of the ICOMOS Ireland Climate Change Sub-Committee, January 2010.
- The Heritage Council (2013). Historic Landscape Characterisation in Ireland: Best Practice Guidance.
- Transport Infrastructure Ireland (TII) (2024) *Guidelines for Cultural Heritage Impact Assessment of TII National Road and Greenway Projects* [hereafter referred to as TII Guidelines].

16.1.2 ASSESSMENT METHODOLOGY

16.1.2.1 STATEMENT OF COMPETENCE

This chapter was prepared by Dr Clare Crowley, Senior Archaeologist and Heritage Consultant at Courtney Deery Heritage Consultancy Ltd. Clare has more than 25 years' experience in the field and holds a PhD in Archaeology (Dublin Institute of Technology, 2009), a BA (Hons) in Ancient History, Archaeology & French (Trinity College Dublin, 1996), a Certificate in Repair and Conservation of Historic Buildings (Dublin Civic Trust, 2004) and a Certificate in Condition Surveys of Historic Buildings (University of Oxford, 2017). She has carried out numerous surveys and evaluations of archaeological and historic monuments, buildings, sites, and landscapes, for the purposes of conservation, assessment, management, and development control. She has undertaken a considerable variety of Cultural Heritage studies and assessments, including EIAR, LAP and SEA research and fieldwork for large-scale infrastructural projects (including wind farms, e.g. Moanvane Wind Farm, Co. Offaly), and nationwide building and historic monument surveys. Recent projects include Barnesmore Gap Greenway, Co Donegal, N2 Slane Bypass, Co. Meath, and numerous sustainable energy projects, such as the proposed Illaunbaun Wind Farm (Co. Clare), proposed grid connections to planned and permitted wind farms, Solar PV Farms in Counties Cork, Meath, Wexford, Kildare, Carlow, Kilkenny and Westmeath

16.1.2.2 CONSULTATION

Consultation took place in July 2024 with the National Monuments Service (Department of Housing, Local Government and Heritage (DHLGH)), with regard to the assessment of Recorded Monuments in proximity to the Proposed Development and their settings. A strategy for the assessment of the monuments was agreed, to include an assessment of visual impact, informed by photomontages, which duly formed part of this chapter.

The assessment was cognisant of the observations in relation to archaeology as submitted by the DHLGH (28 February 2025) in response to the EIA Scoping Report.

16.1.2.3 STUDY AREA

The area examined for this study includes the full extent of the Proposed Development land take.

In order to understand and to characterise the character, context and significance of the archaeological, architectural and cultural heritage in and around the Proposed Development, and to identify the likely and significant impacts, the following heritage assets were examined: Candidate sites on the tentative list for inscription onto the World Heritage list, national monuments, recorded archaeological sites and monuments, record of monuments and places/sites and monuments record (RMP / SMR sites), record of protected structures (RPS sites), National Inventory of Architectural heritage (NIAH) building and garden survey, and undesignated cultural heritage features.

To identify the likely and significant impacts of the Proposed Development on cultural heritage sites of different sensitivity values, the study area for the assessment included the following Zones of Influence:

- World Heritage properties and candidate sites on the tentative list for inscription onto the World Heritage list (20km radius from the proposed turbine locations);
- National monuments (5km radius from the proposed turbine locations) and nationally significant complexes in elevated positions or with views integral to the setting of the monument (10km radius from the proposed turbine locations);
- Recorded Monuments (2km radius from the proposed turbine locations);
- Protected Structures and NIAH sites (2km radius from the proposed turbine locations);
- Undesignated Cultural Heritage features (within the Proposed Development Boundary).

This methodology has ensured that a robust assessment has taken place on all recorded cultural heritage assets within and in proximity to the Proposed Development and that the likely and significant impacts are considered.

16.1.2.4 FIELD WORK

The land within the Proposed Development was inspected on 24th August 2023 and 10th June 2024. The field inspection was undertaken to assess current and previous land use, access to the site, local topography, and any additional environmental information relevant to the site's appraisal. It sought to identify and assess cultural heritage sites that might be subject to direct or indirect setting impacts as a result of the Proposed Development.

An evaluation was undertaken of any identified heritage features as well as the archaeological potential of any given area. The field survey sought to identify any low-visibility archaeological features with little surface expression and to identify properties, structures or features considered to be of architectural or cultural heritage merit. All features were recorded and photographed. The results of the field survey are detailed in Appendix 16-02.

16.1.3 DATA SOURCES

The following sources were availed of:

- The National Monuments, Preservation Orders and Register of Historic Monuments lists were sourced directly from the Department of Housing, Local Government and Heritage (DHLGH);
- Record of Monuments and Places (RMP) and Sites and Monuments Record (SMR);
- Record of Protected Structures (RPS) and Architectural Conservation Areas (ACAs), Clare County Development Plan 2023-2029;
- The National Inventory of Architectural Heritage (NIAH) Building Survey and Garden Survey, the Department of Housing, Local Government and Heritage (DHLGH) highlight a representative sample of architectural heritage in the county and raise awareness of the wealth of the same. The NIAH surveys can be reviewed online at www.buildingsofireland.ie.
- The topographical files of the National Museum of Ireland;
- National Folklore Collection (www.duchas.ie) ;

- Cartographical sources, Tailte Éireann Historic Mapping Archive, including early editions of the Ordnance Survey (OS) maps and other historical mapping (such as Down Survey 1656 barony and parish maps);
- Excavations Bulletins and Excavations Database (1970-2025);
- Aerial imagery (Google Earth 2001–2025, Bing 2025; OSi 1995, 2000, 2006, 2013-18);
- Lotts Architecture and Urbanism (2015), The Bridges of North County Clare: An Inventory of Civil Engineering Heritage;
- Other documentary sources (as indicated within the chapter/appendices footnotes).

16.1.3.1 DATA ANALYSIS

The mapping and data analysis were managed through ArcGIS (geographical information software). Information was structured by the identification of heritage assets, such as the RMP, NIAH and National Monuments, as point data on the programme. For this project the RMP datasets were obtained from www.archaeology.ie (accessed and downloaded 20/04/2023). More recent datasets are not available to download, however, the Historic Environment Viewer of the Archaeological Survey of Ireland https://heritagedata.maps.arcgis.com/apps/webappviewer; www.archaeology.ie) was cross-checked for any changes in February 2025.

The National Monuments list was sourced directly from the DHLGH and added as a layer. The NIAH dataset was also obtained from the DHLGH and was cross-referenced with the Record of Protected Structures in the Clare County Development Plan (2023-2029). The Geographical Information System (GIS) for the project formed a permanent, renewable database to provide information for the EIA process.

16.1.4 ASSESSMENT OF EFFECTS

Every landscape presents different topographical and environmental conditions, land cover and land usage, and as such, the location, scale and physical form of each element of a wind farm project and associated works are site specific.

Cultural heritage sites are considered to be a non-renewable resource, and cultural heritage material assets are generally considered to be location sensitive. In this context, any change to their environment, such as construction activity and ground disturbance works, could adversely affect these sites. The likely significance of all effects is determined in consideration of the magnitude of the impact and the baseline rating upon which the impact has an effect (i.e., the sensitivity or value of the cultural heritage receptor). Having assessed the potential magnitude of impact with respect to the sensitivity/value of the asset, the overall significance of the effect is then classified as not significant, imperceptible, slight, moderate, significant, very significant, or profound.

16.1.4.1 TYPE OF IMPACTS

Potential impacts on the cultural heritage environment can be described in three categories: direct physical impacts, indirect physical impacts, and impacts on setting.

Direct Physical Impacts

Direct physical impacts describe those development activities that directly cause damage to the fabric of a heritage asset. Typically, these activities are related to construction works, e.g. they could include excavation of foundations, earthmoving/site preparation creation of access roads and the excavation of service trenches. Further direct physical impacts are unlikely to be experienced during the operational life of the Proposed Development.

Indirect Physical Impacts

Indirect physical impacts describe those processes, triggered by development activity, that lead to the degradation of heritage assets.

Impacts on Setting

Impacts on setting of heritage assets describes how the presence of a development changes the surroundings of a heritage asset (archaeological, architectural or cultural heritage sites) in such a way that it affects (positively or negatively) the heritage significance of that asset. Visual impacts are most commonly encountered, but other environmental factors such as noise, light or air quality can be relevant in some cases. Impacts may be encountered at all stages in the life cycle of a development from construction to decommissioning, but they are only likely to be considered significant during the prolonged operational life of the development. Factors taken into account when assessing the impact on setting include (after English Heritage 2005 & Heritage Council 2013):

- Visual dominance - Wind turbines are far greater in vertical scale than most historic features. Where a historic feature is the most visually dominant feature in the surrounding landscape, the adjacent construction of turbines may be inappropriate.
- Scale - The extent of a wind farm and the number, density and disposition of its turbines will also contribute to its visual impact.
- Intervisibility - Certain archaeological or historic landscape features were intended to be seen from other historic sites. Construction of wind turbines should respect this intervisibility.
- Vistas and sight-lines - Designed landscapes involve key vistas or the use of topography to add drama. Location of turbines within key views, which may extend beyond any designated area, should be avoided.
- Movement (sound / light effects) - Adequate distance should always be provided between important historic sites and wind turbine developments to avoid the site being overshadowed or affected by noise and shadow-flicker effects.
- Unaltered settings - The setting of some historic sites may be little changed from the period when the site was first constructed, used or abandoned. Largely unaltered settings for certain types of sites may be rare survivals and especially vulnerable to modern intrusions such as wind turbines.

While a direct physical impact can easily be assessed in quantitative terms, the assessment of the setting can be subjective and, as such, is a matter of qualitative and professional judgement.

16.1.4.2 SIGNIFICANCE / SENSITIVITY CRITERIA

In accordance with EPA Guidelines (EPA 2022), the context, character, significance and sensitivity of each cultural heritage receptor requires evaluation, and the significance of the impact is then determined by considering the importance of the asset and the predicted magnitude of the impact. In accordance with the TII Guidelines (TII 2024), the importance criteria used to evaluate a cultural heritage site, monument or complex take into account the character and integrity of the asset and any available data regarding it. This can be ascertained by looking at the following criteria (compiled by Courtney Deery Heritage Consultancy Ltd, based on standard authorities and guidelines): the existing status (level of protection), condition or preservation, documentation or historical significance, group value, rarity, visibility in the landscape, fragility or vulnerability, and amenity value (Table 16-1). While these criteria contribute to the importance of a feature, they should not be treated as definitive. These criteria are indicators which contribute to a wider judgement based on the individual circumstances of these cultural heritage receptors.

An evaluation of the importance of cultural heritage receptors is based on their designation and on the extent to which these assets contribute to the cultural heritage environment, through their individual or group qualities, either directly or potentially. Table 16-2 presents the scale of importance together with criteria as per the TII Guidelines. Non-designated cultural heritage sites can be assigned a low, medium or high sensitivity value, taking into consideration the criteria cited in Table 16-1 (e.g. condition, character, integrity or preservation, data, group value, rarity, visibility in the landscape, fragility or vulnerability, and amenity value).

Table 16-1: Explanation of Cultural Heritage Receptor Assessment Criteria

Criteria	Explanation
Existing status	The level of protection associated with a cultural heritage asset is an important consideration.
Condition / Preservation / Integrity	The survival of a Cultural Heritage Receptor's archaeological potential both above and below ground is an important consideration and should be assessed in relation to its present condition and surviving features. Well-preserved sites should be highlighted; this assessment can only be based on a field inspection.
Documentation / Data	The significance of a Cultural Heritage Receptor may be enhanced by the existence of records of previous investigations or contemporary documentation supported by written evidence or historic maps. Sites with a definite historical association or an example of a notable event or person should be highlighted.
Group Value / Character	The value of a single Cultural Heritage Receptor may be greatly enhanced by its association with related contemporary monuments or with monuments from different periods indicating an extended time presence in any specific area. In some cases, it may be preferable to protect the complete group, including associated and adjacent land, rather than to protect isolated monuments within that group.
Rarity / Character	The rarity of some Cultural Heritage Receptor types can be a central factor affecting response strategies for development, whatever the condition of the

Criteria	Explanation
	individual feature. It is important to recognise sites that have a limited distribution.
Visibility in the landscape / Character / Integrity	Cultural Heritage Receptors that are highly visible in the landscape have a heightened physical presence. The inter-visibility between monuments may also be explored in this category.
Fragility / Vulnerability / Integrity	It is important to assess the level of threat to a cultural heritage asset from erosion, natural degradation, agricultural activity, land clearance, neglect, careless treatment or development.
Amenity Value / Character	Regard should be taken of the existing and potential amenity value of a Cultural Heritage Receptor.

Table 16-2: Importance Criteria (per TII Guidelines)

Importance	Criteria
Very High	Designated Built Heritage Receptors rated as being of international importance, including associated historic gardens and designed landscapes. Designated features of international intangible heritage value. Designated historic landscapes of international value. National Monuments. Other designated Cultural Heritage Receptors of international importance. World Heritage Properties.
High	Architectural Conservation Areas. Built Heritage Receptors rated as being of national importance by the NIAH, including associated historic gardens and designed landscapes. Historic landscapes (designated or undesignated) of outstanding interest and of demonstrable national value. These will be well-preserved historic landscapes exhibiting considerable coherence, time-depth, or other critical factors. Other designated or undesignated Cultural Heritage Receptors of demonstrable national importance. Places or features of national intangible heritage value. Protected Structures. Recorded Monuments (or sites and monuments scheduled for inclusion on the RMP) of high quality and importance. Sites and monuments subject to a Preservation Order or Temporary Preservation Order. Undesignated receptors of high quality and importance. World Heritage Tentative List properties.
Medium	Built Heritage Receptors rated as being of regional importance by the NIAH, including associated historic gardens and designed landscapes. Historic landscapes of regional value (designated or undesignated).

Importance	Criteria
	Historic townscapes or built-up areas with demonstrable historic integrity in their buildings or built settings (e.g. including street furniture and other structures). Other designated or undesignated receptors of regional Cultural Heritage importance. Places or features of regional intangible heritage value. Recorded Monuments (or sites and monuments scheduled for inclusion on the RMP).
Low	Built Heritage Receptors rated as being of local importance by the NIAH, including associated historic gardens and designed landscapes. Historic landscapes whose value is limited by poor preservation and/or poor survival of contextual associations. Historic townscape or built-up areas of limited historic integrity in their buildings or built settings (e.g. including street furniture and other structures). Other designated or undesignated Cultural Heritage Receptors of local importance. Places or features of local intangible heritage value. Receptors compromised by poor preservation of contextual associations with inherent, albeit limited, Cultural Heritage value. Undesignated historic buildings of modest quality in their fabric or historical association.
Negligible	Receptors/landscapes with very little surviving Cultural Heritage interest.

16.1.4.3 MAGNITUDE OF IMPACT

When assessing the impact magnitude, the following need to be considered:

- Extent – size, scale and spatial distributions of the impact
- Duration – period of time over which the impact will occur
- Frequency – how often the impact will occur
- Context – how will the extent, duration and frequency contrast with the accepted baseline conditions

Table 16-3: Magnitude of Impact Criteria

Importance	Criteria
Very High	Major alteration to, or complete loss of, a Cultural Heritage Receptor. Effects likely to be experienced at a very large scale; considered permanent and irreversible.
High	Notable or long-term change to a Cultural Heritage Receptor.
Medium	Moderate or long-term change over a restricted area or a moderate change to a Cultural Heritage Receptor.

Importance	Criteria
Low	Minor, short- or medium-term change over a restricted area or a minor change to a Cultural Heritage Receptor.
Negligible	Imperceptible change to a Cultural Heritage Receptor.

16.1.4.4 SIGNIFICANCE OF EFFECT

The likely significance of the effect is determined by considering the baseline rating (importance) of the asset upon which there is an impact, and the magnitude of the effect (Figure 16-1). The effect significance is defined as Imperceptible, Not Significant, Slight, Moderate, Significant, Very Significant, or Profound (Figure 16-1 and Table 16-4).

Table 16-4: Defining Significance of Effect (per TII Guidelines)

Impact	Definition
Profound	An effect which obliterates a Cultural Heritage Receptor of high or very high importance.
Very Significant	An effect which, by its character, magnitude, duration or intensity, considerably alters most of an important aspect of the Cultural Heritage Receptor.
Significant	An effect which, by its character, magnitude, duration or intensity alters an important aspect of the Cultural Heritage Receptor.
Moderate	An effect that alters the character of the Cultural Heritage Receptor in a manner that is consistent with existing and emerging baseline trends.
Slight	An effect which causes noticeable changes in the character of the Cultural Heritage Receptor without affecting its importance.
Not Significant	An effect which causes noticeable changes in the character of the Cultural Heritage Receptor, but without significant consequences.
Imperceptible	An effect capable of measurement but without significant consequences.

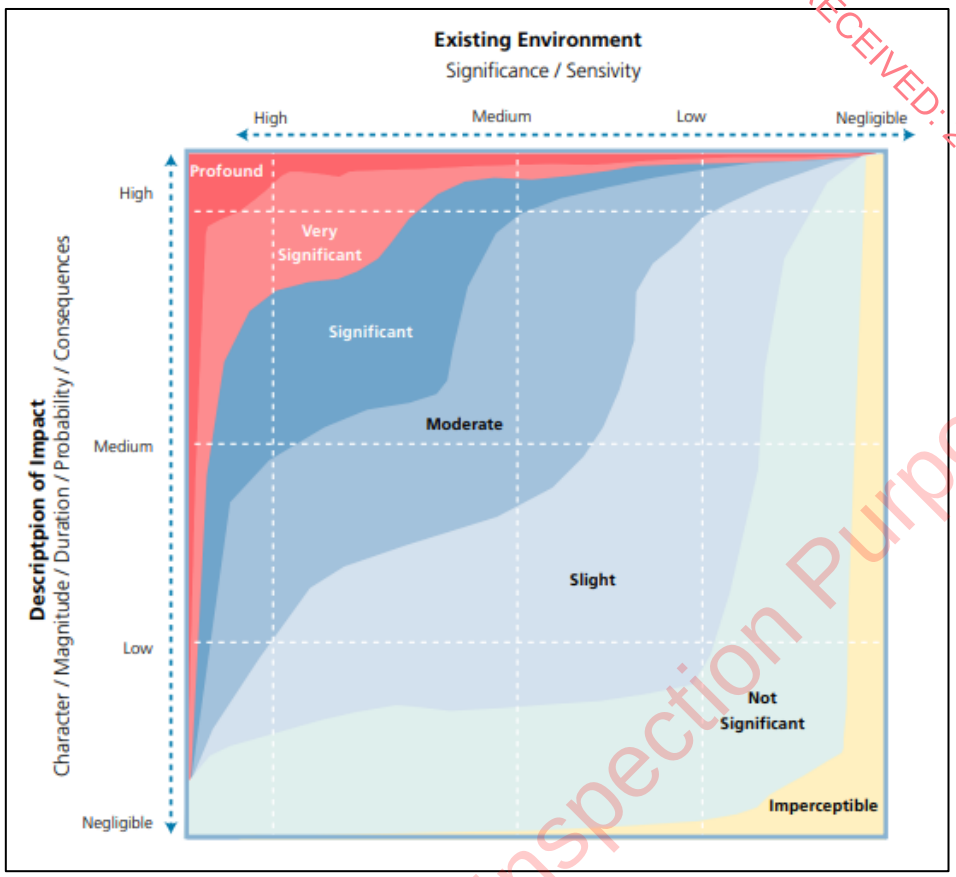

Figure 16-1: Description of Impacts from the EPA Guidelines on the Information to be Contained in EIAR (EPA 2022)

16.1.5 LIMITATIONS OF ASSESSMENT

No difficulties or limitations were encountered during the course of the assessment.

16.2 BASELINE CULTURAL HERITAGE IN RECEIVING ENVIRONMENT

16.2.1 STUDY AREA CONTEXT

County Clare is famed for its cultural and natural heritage. Archaeological evidence indicates that the landscape surrounding the Proposed Development has attracted human activity and occupation since the prehistoric period.

The underlying geology is carboniferous mudstone, siltstone and sandstone, partly overlain by blanket peat. The Landscape Character Assessment for County Clare in the Clare County Development Plan 2023-2029 notes that this area forms part of the settled landscape within the Malbay coastal farmland, a rural area under strong urban influence.

Table 16-5: Townlands within the Proposed Development

Townland Name	Civil Parish	Barony
Illaunbaun	Kilfarboy	Ibrickan
Tooreen	Kilfarboy	Ibrickan
Slievenalicka	Kilfarboy	Ibrickan
Drumbaun	Kilfarboy	Ibrickan
Fahanlunaghta Beg	Kilmanaheen	Corcomroe

16.2.2 BASELINE SUMMARY

An overview of the archaeological and historic development of the lands within or in the vicinity of the Proposed Development is contained in Appendix 16-2, which also includes a review of historic map sources, aerial imagery, placename evidence, and folklore, and the results of the field walkover survey.

No previous archaeological investigations have been undertaken within the Proposed Development or in the surrounding townlands. No features of potential archaeological interest were identified from aerial photographs.

No stray finds are recorded in the National Museum of Ireland (NMI) topographical files for the townlands located within or adjacent to the proposed wind farm. A search of Clare Museum's online Acquisitions Collection (www.clarelibrary.ie) similarly returned no records.

The first edition OS six-map (1836) depicts a rural landscape at the Proposed Development location, one of scarce, dispersed settlements and generally small fields interspersed with larger areas of unenclosed marginal land. Several structures were identified on the first edition OS six-map (1836) and/or later revisions within the Proposed Development, all of which were cabins, houses, or outbuildings. These have been assigned ID numbers and are described in Section 16.2.3.3.

While placename evidence and folklore revealed nothing of significance, an account in the 1930s Schools' Collection provides a glimpse of the vernacular architecture of the area, which is of interest in the light of the buildings shown on the historic mapping. In describing the damage wrought by storms, the account tells that:

"Ricks of hay on the houses and cabins of the peasant used to be blown down. Probably the storms were not very fierce as it was easy to blow down the houses. They were constructed of mud and the thatch tied with the 'Sugain' or Straw Rope. The sugan did not hold long because it rotted after a few months and the least wind could blow off the thatch".

16.2.3 DESIGNATED CULTURAL HERITAGE SITES

16.2.3.1 ARCHAEOLOGICAL HERITAGE

World Heritage

No World Heritage properties or candidate sites are located within a 20km radius of the proposed wind turbine locations.

National Monuments

A review of all national monuments in State Care and those sites subject to a Preservation Order (PO) was undertaken as part of the assessment in order to ascertain any potential impacts on their setting as a result of the Proposed Development.

No national monuments or PO sites are located within the wind farm boundary, and none are located within 5km of the proposed wind turbine locations.

There are no nationally significant complexes in elevated positions or with views integral to the setting of the monument within a 10km radius of the proposed wind turbine locations.

Recorded Monuments

There are no recorded monuments (RMP sites) within the Proposed Development Boundary or immediately adjacent to it (Figure 16-3 and Figure 16-4).

One RMP site is located within c. 500m of the proposed wind turbine locations, a bivallate ringfort in Drumbaun townland (RMP CL023-044; Table 16-6, Figure 16-2). The upstanding monument is located in a pasture field c. 315m from the nearest turbine location (WTG4), which is proposed within forestry on the hillslope east of the monument. The setting of the monument and a visual impact assessment in relation to it is described in Section 16.2.3.3.

Table 16-6: RMP sites within 500m of the Proposed Wind Turbine Locations

RMP No.	Classification	Townland	ITM E	ITM N	Distance to nearest turbine
CL023-044	Ringfort - rath	DRUMBAUN	508592	681938	c. 315m to WTG4

There are five RMP sites within 1km of the Proposed Development (Table 16-7), three of which comprise the cluster at Kilfarboy, where there is a church (Kilfarboy Church) and graveyard and an /associated holy well (RMP CL031-008001 to -008003). There are also two ringforts (RMP CL023-043 & CL031-009). With regard to the ecclesiastical remains at Kilfarboy, the setting of the monuments and a visual impact assessment in relation to them is described in Section 16.2.3.3.

A further 10 RMP sites are located within a 1-2km radius, comprising ringforts, a house site, and other types of enclosure (including a barrow) or earthwork (Table 16-8). The sites all have a low profile in the landscape or in some cases have no above-ground remains, and their settings are considered to be restricted to their immediate or close environs. One of the 10 sites is a redundant record.

Table 16-7: RMP sites within 1km of the Proposed Wind Turbine Locations

RMP No.	Classification	Townland	ITM E	ITM N	Distance to nearest turbine
CL031-008001	Church	KILFARBOY	508104	681602	c. 900m to WTG4
CL031-008002	Graveyard	KILFARBOY	508112	681593	c. 868m to WTG4
CL031-008003	Ritual site - holy well	KILFARBOY	508084	681582	c. 926m to WTG4
CL031-009	Ringfort - rath	LEEDS	508587	680987	c. 853m to WTG1
CL023-043	Ringfort – rath	KILFARBOY	508372	682358	c. 655m to WTG4

Table 16-8: RMP sites within 1-2km of the Proposed Wind Turbine Locations

RMP No.	Classification	Townland	ITM E	ITM N	Distance to nearest turbine
CL023-026	Ringfort – rath	AILLBRACK, TOOR	509418	683652	c. 1.7km to WTG4
CL023-030001	Ringfort – rath	CLOONEYOGAN SOUTH	510133	683512	c. 1.7km to WTG5
CL023-030002	House - indeterminate date	CLOONEYOGAN SOUTH	510133	683512	c. 1.7km to WTG5
CL023-041	Ringfort – rath	BALLYVASKIN NORTH	507191	681669	c. 1.77km to WTG4
CL023-042	Barrow – ring-barrow	BALLYVASKIN NORTH	507246	682563	c. 1.83km to WTG4
CL023-061	Concentric enclosure	CLOONEYOGAN SOUTH	510934	683524	c. 1.95km to WTG2
CL031-006	Earthwork	CARROWKEEL (Ibrickan By.)	507437	681467	c. 1.53km to WTG4
CL031-007	Ringfort – rath	KILFARBOY	507582	681602	c. 1.34km to WTG4
CL031-019	Earthwork	SILVERHILL	510684	679154	

RMP No.	Classification	Townland	ITM E	ITM N	Distance to nearest turbine
CL031-050	Redundant record	SLIEVENALICKA	509157	680472	c. 1.07km to WTG3 & WTG4

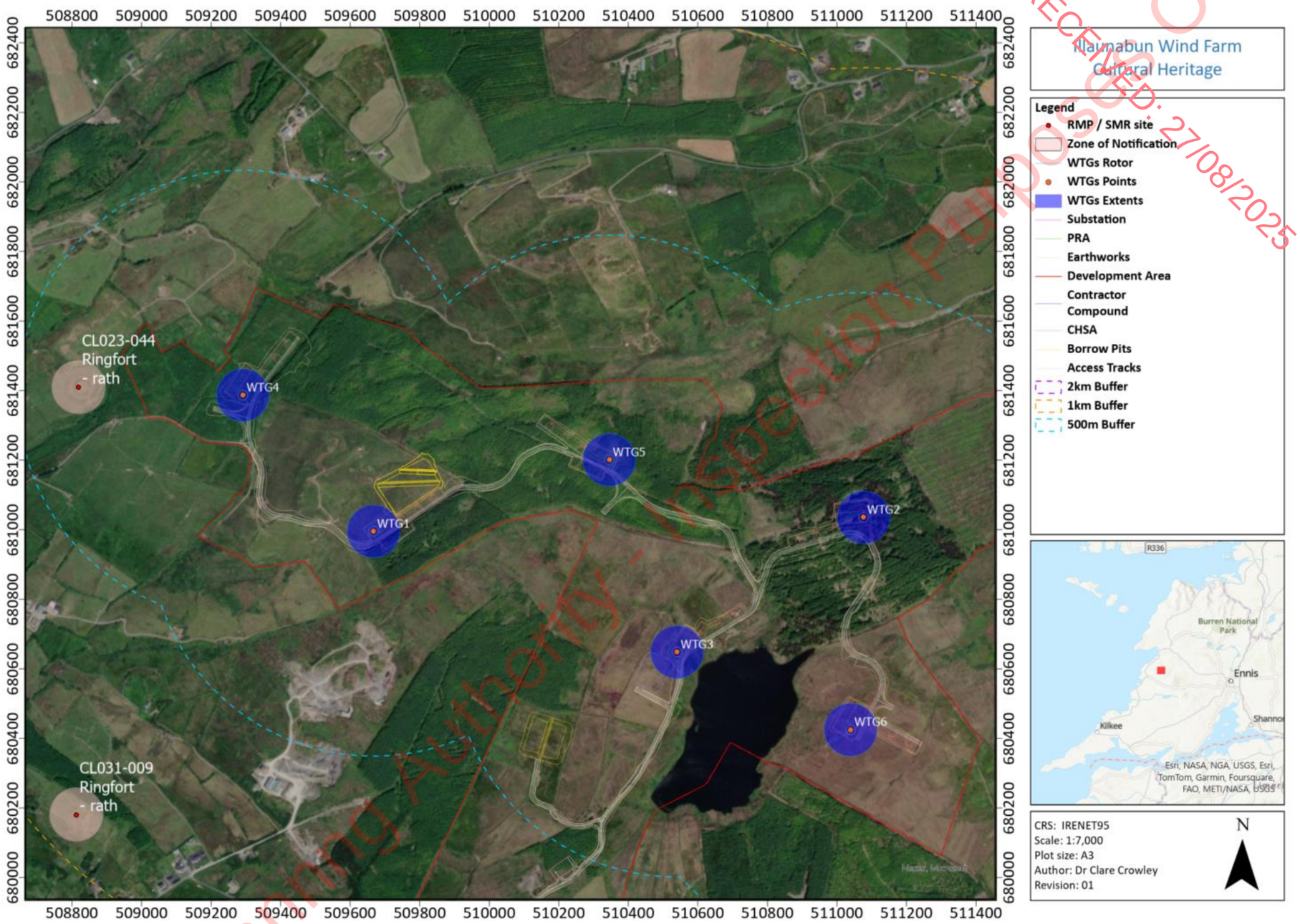

Figure 16-2 RMP Site within 500m of proposed wind turbine locations

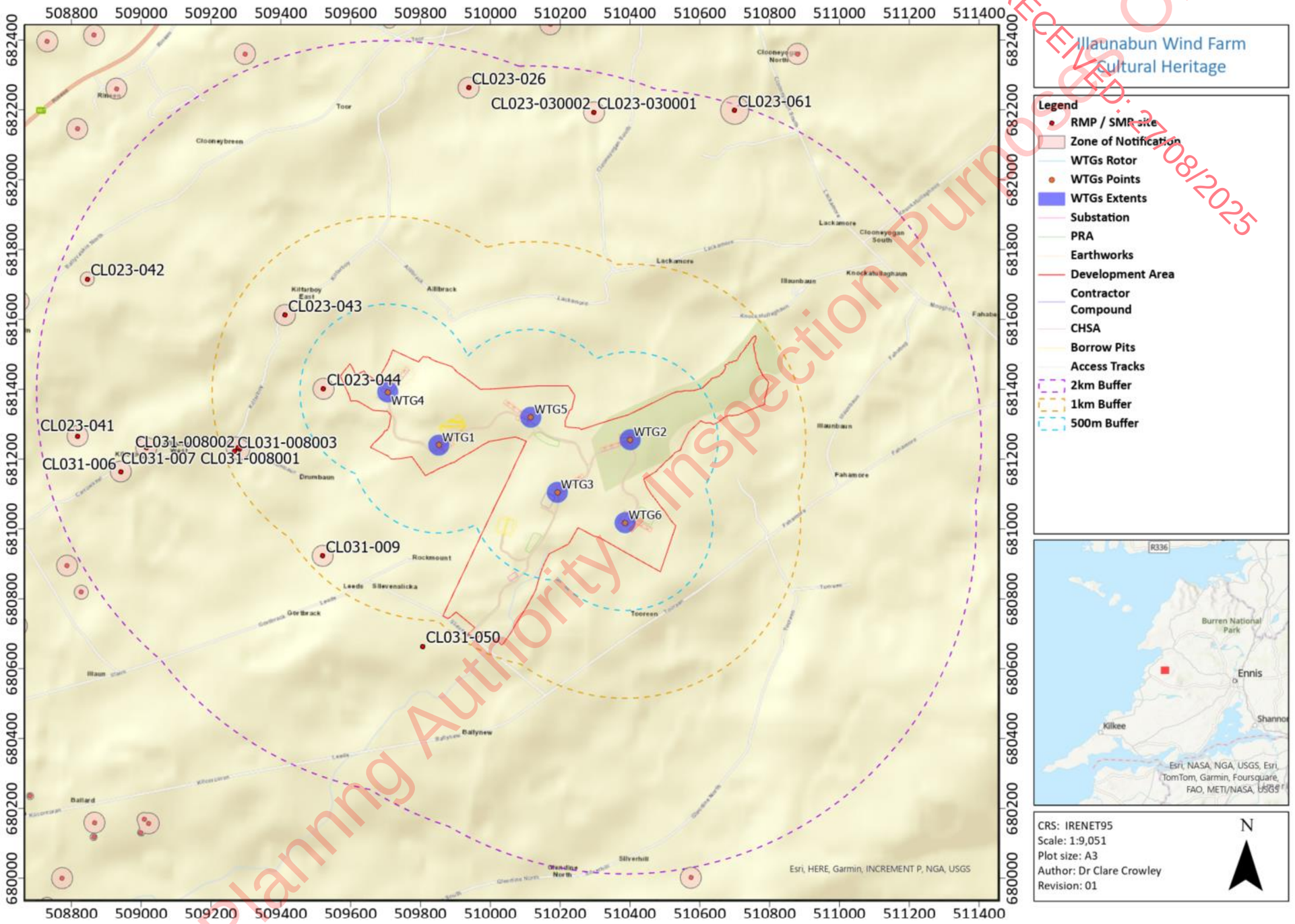

Figure 16-3 RMP Sites within 2km of proposed wind turbine locations

16.2.3.2 ARCHITECTURAL HERITAGE

Record of Protected Structures (RPS)

There are no protected structures within or in proximity to the Proposed Development and only one RPS site within a 2km radius, Kilfarboy Church, Graveyard and Holy Well (all three under RPS No. 635) (Table 16-9).

The church, graveyard and holy well in Kilfarboy townland lie just over 1km west of the nearest proposed turbine (WTG1); they are discussed above under Archaeological Heritage (Section 16.2.3.1) and their setting is described in Section 16.2.3.3. This RPS site corresponds to RMP No. CL031-008001 to -008003.

Table 16-9: RPS sites within 2km of the Proposed Development

RPS No.	Other Reference	Site Type	Townland	ITM E	ITM N
635	RMP CL031-008	Church, Graveyard and Holy Well	KILFARBOY	508104	681602

National Inventory of Architectural Heritage (NIAH) Building and Garden Surveys

No additional NIAH sites are located within a 2km radius of the Proposed Development.

Architectural Conservation Areas (ACAs)

There are no ACAs located within a 2km radius of the Proposed Development.

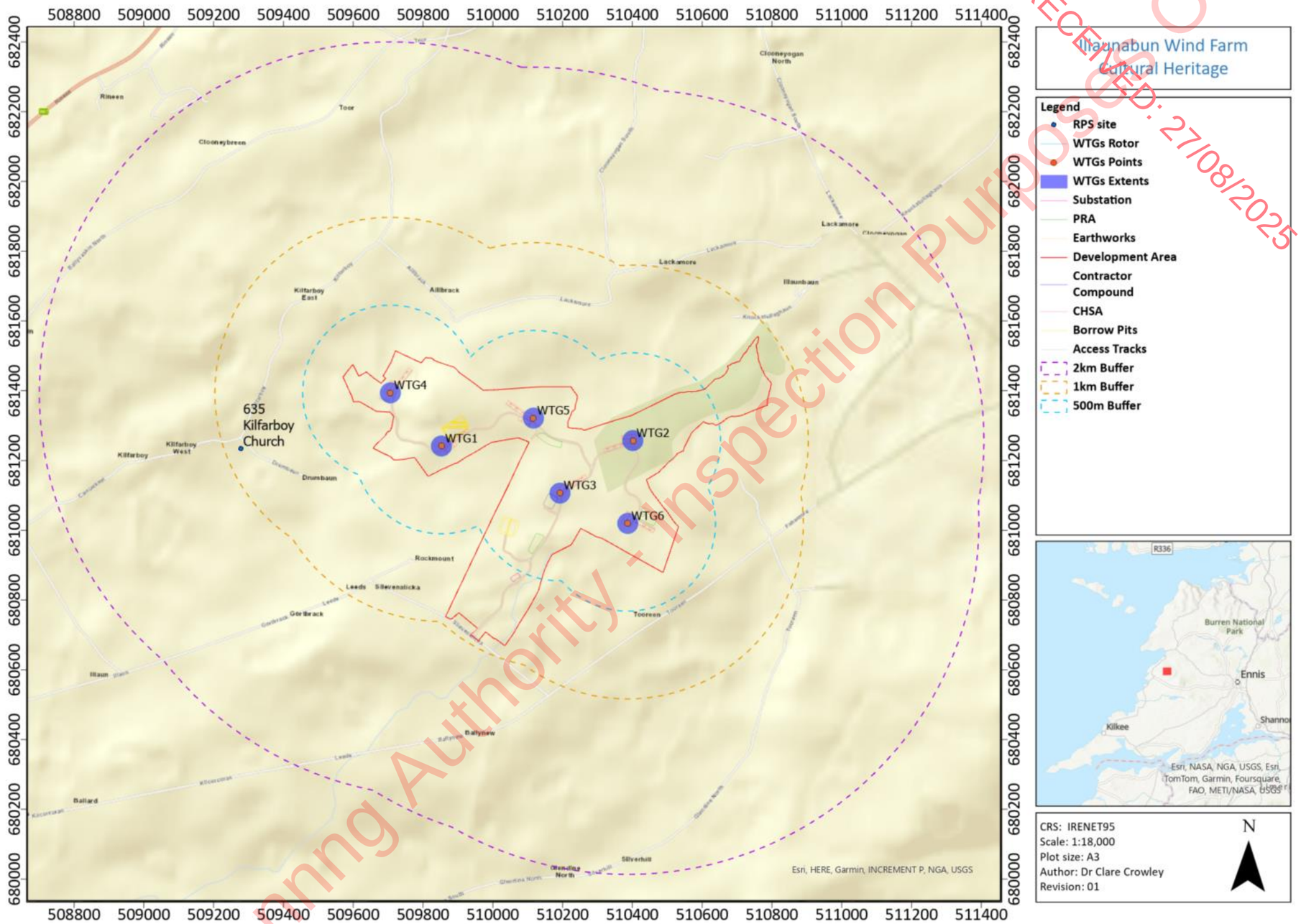

Figure 16-4: Designated Architectural Heritage (RPS) Sites within 2km of proposed wind turbine locations

16.2.3.3 VISUAL IMPACT ASSESSMENT

Recorded monument, Ringfort (RMP CL023-044), Drumbaun townland

The bivallate nature of the recorded monument, its larger size (relative to other ringforts in the study area), and the scale of its banks and ditches (e.g. Figure 16-7), indicate that it may have been one of the more important of the ringforts in this landscape. Despite its good condition and the impressive size of its enclosing elements, the monument is not a visually dominant feature and is difficult to discern from a distance, in the meadow pasture field in which it sits and the nearby field boundaries (Figure 16-5). The ringfort is on private land and is not accessible to the public. It is not possible to see the monument from the nearby public road, nor from the adjacent farm access track, as it is screened by the field and road-side boundaries to the west and south-west and by young forestry plantation to the south.

Figure 16-5: View towards ringfort, situated at the base of the forested slope, and to the Proposed Development location beyond it

An inspection of the monument and its setting were carried out as part of this assessment. Access to the monument was arranged for the purposes of the inspection. The ringfort is located in a relatively level area of pasture land with rising ground immediately to its east and south-east and good views west and north-westwards to the coast (Figure 16-6: & Figure 16-7:). It is possible that the views out to sea and towards the other ringforts in the landscape to the west and north-west, though the undulating topography would indicate that very few of these would have been visible, may have influenced the siting of the monument and have been more significant in the context of its setting. These views, which are considered to contribute most to the setting of the monument, would not be interrupted by the Proposed Development.

The nearest turbine (WTG4, c. 315m east of the ringfort; Figure 16-2 & Figure 16-9:) will be a prominent new structure, with at least half of it visible above the forestry (Figure 16-10: & Figure 16-11:). The top of WTG1 and the blade tips of WTG5 will also be visible behind the high ground that rises to the east and south-east of the monument. The tips of telecommunication masts, which are also visible above the ridge line (Figure 16-8:), and the areas of forestry plantation on the hillside and in the fields adjacent to the ringfort represent existing modern changes to the landscape in this direction. The surrounding landscape is a modern agricultural one, with individual houses and farmsteads, powered by the overhead lines that criss-cross the fields.

The upper elevation of the turbines would be clear and a noticeable element in the immediate forested and hillside setting, from the ringfort at Drumbaun (RMP CL023-044) (Figure 16-10: & Figure 16-11:). This will introduce substantial change to the view to the east/south-east, however, views in this direction are not considered to contribute substantially to the significance of the setting. The long range and distant views to the west and north-west, which may have influenced the siting of the monument and have been more significant in the context of its setting, will remain unchanged. This visual change will not restrict the open and expansive nature of the views from this site.

Figure 16-6: View north-west from the ringfort to the sea

Figure 16-7: View west from the ringfort to the sea, standing on the outer bank of the north-west side of the monument, showing the substantial banks and ditch

Figure 16-8: View of ringfort (outer bank marked by ranging rod), facing east / southeast towards Proposed Development location

Figure 16-9: Recorded monument CL031-044 (Ringfort) and nearest proposed turbine location (WTG4)

Figure 16-10: Viewpoint Heritage VP1, showing baseline photograph and cumulative wireline view. Taken from ringfort, facing east-southeast (after Macroworks Ltd; see Appendix 16-03 at scale)

Figure 16-11: Viewpoint Heritage VP1, showing photomontage. Taken from ringfort, facing east-southeast (after Macroworks Ltd; see Appendix 16-03 at scale)

Ecclesiastical remains at Kilfarboy

The immediate surrounds of the church and graveyard (Figure 16-12: & Figure 16-13:) are relatively open, with a low stone graveyard wall and no trees along the boundary (Figure 16-14: & Figure 16-15:). The topography restricts the views somewhat to the west, north and east, where flat pastureland gives way to hills. The Proposed Development is located on the hills to the east and north-east. The scale of the Proposed Development is small, with only six turbines, and as a development, it is visually permeable (as opposed to a large block of development).Figure 16-17: & Figure 16-18:). Although the turbines will be partially visible from this site (the nearest is WTG4, c. 868m north-east of the graveyard boundary (Figure 16-16:), though all will be visible to some degree above the ridgeline, churches and graveyards commonly have an enclosed aspect and an insular focus and are not designed to take in views of the surrounding landscape. Where such views exist, they are accidental rather than planned and are not considered to contribute to the significance of the ecclesiastical site.

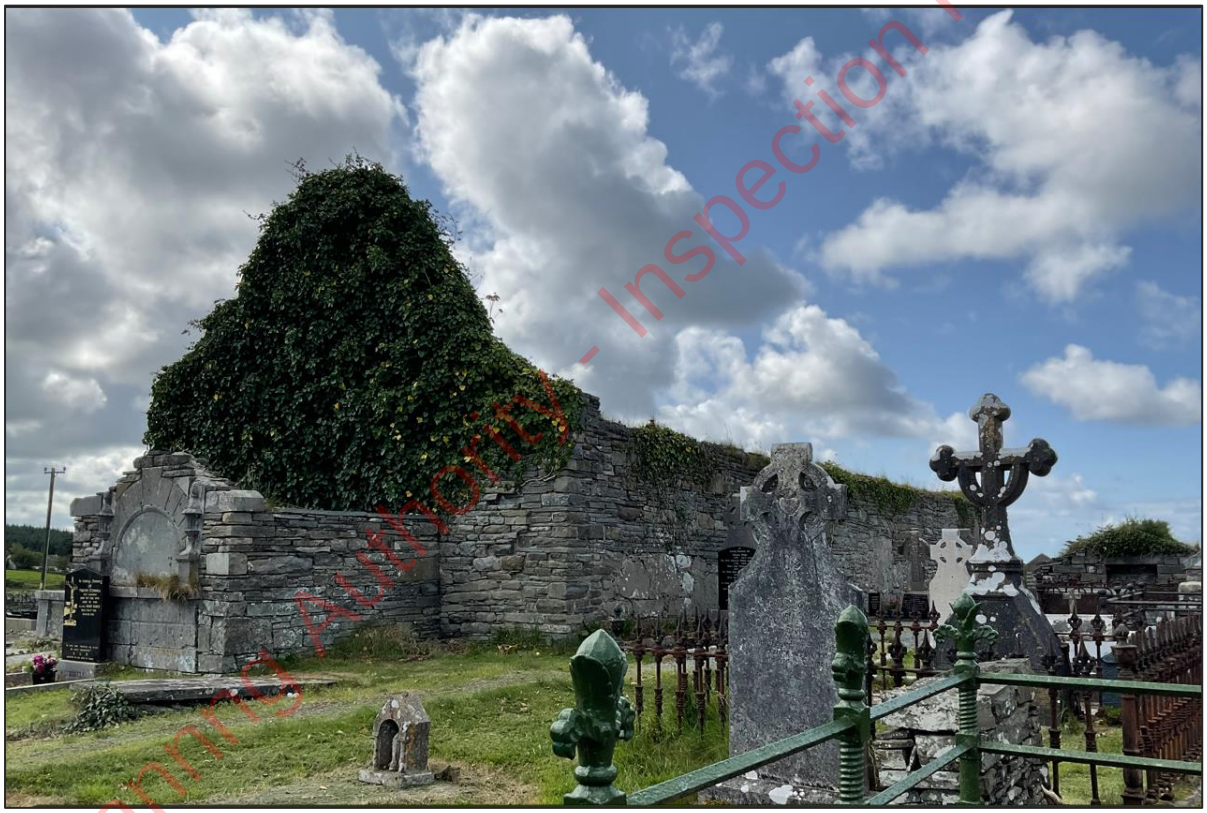

Figure 16-12: Kilfarboy Church from inside graveyard (RMP CL031-008 & RPS 635) facing south-west

Figure 16-13: Interior of Kilfarboy Church, facing east / north-east gable

Figure 16-14: View east / south-east towards Proposed Development location from inside Kilfarboy Graveyard (RMP CL031-008 & RPS 635)

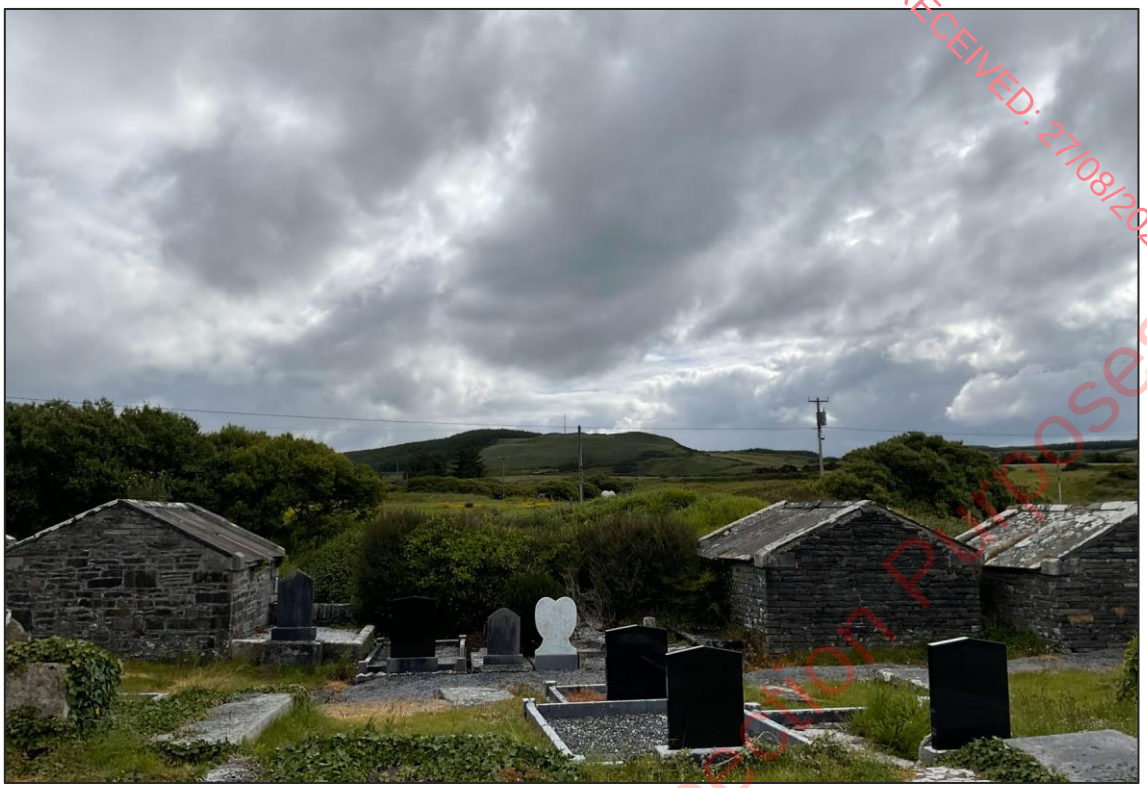

Figure 16-15: View east / north-east towards Proposed Development location from inside Kilfarboy Graveyard (RMP CL031-008 & RPS 635)

Figure 16-16: Kilfarboy Church and Graveyard, with nearest proposed turbine locations (WTG4 & WTG1)

Figure 16-17: Viewpoint VP11, showing baseline photograph and cumulative wireline view. Taken from graveyard, facing east (after Macroworks Ltd; see Volume V: Photomontages at scale)

Figure 16-18: Viewpoint VP11, showing photomontage. Taken from graveyard, facing east (after Macroworks Ltd; see Volume V: Photomontages at scale)

16.2.4 NON-DESIGNATED CULTURAL HERITAGE SITES

Three features of cultural heritage interest were identified from the historic mapping (Figures 16-5 to 16-7) within the Proposed Development Boundary, as noted in Section 16.2.2 (CH1, CH2, etc. in Table 16-10). None of the features are located on the proposed access routes, at the proposed turbine/platform locations, or on other associated infrastructure.

Descriptions of the non-designated sites are contained in Table 16-11 Below and their locations are shown on Figure 16-19. Additional detail and images, where relevant, are provided in Section 16.2 of Appendix 16-2. No new cultural heritage features were identified during the field survey.

Table 16-10: Non-Designated Cultural Heritage Sites in proximity to the Proposed Development

ID No.	Classification	Townland	ITM E	ITM N
CH1	Structure (site of)	Slievenalicka	509667	681087
CH2	Structure & kiln (site of)	Illaunbaun	510820	681934
CH3	Structures (site of)	Illaunbaun	510839	681781

Table 16-11: Descriptions of Non-Designated Cultural Heritage Sites

ID No.	Distance	Description
CH1	c. 8m SE of proposed borrow pit	First edition six-inch OS map of 1839 shows a structure set at the corner of a small field enclosure (Figure 16-20:), in an area otherwise indicated as marginal land, with the placename 'Carrickaleigh' to the east of it. Indicated as roofless by the time of the OS 25-inch map of 1895 and is no longer depicted on the revised six-inch map of 1921. Not visible on the ground during field survey. Area is very overgrown.
CH2	c. 535m NE of WTG2	First edition OS shows a structure set within a rectilinear yard or plot, with a kiln depicted to the east (Figure 16-21:). A track runs south-eastwards to a field. Structures within a farmyard (CH3 below) are located on the north side of the field. The site is now located in dense Coillte forestry plantation.
CH3	c. 535m NE of WTG2	First edition OS shows farmstead comprising two structures within a subdivided yard. Still depicted on the later mapping (Figure 16-22:). The site is now located in dense Coillte forestry plantation.

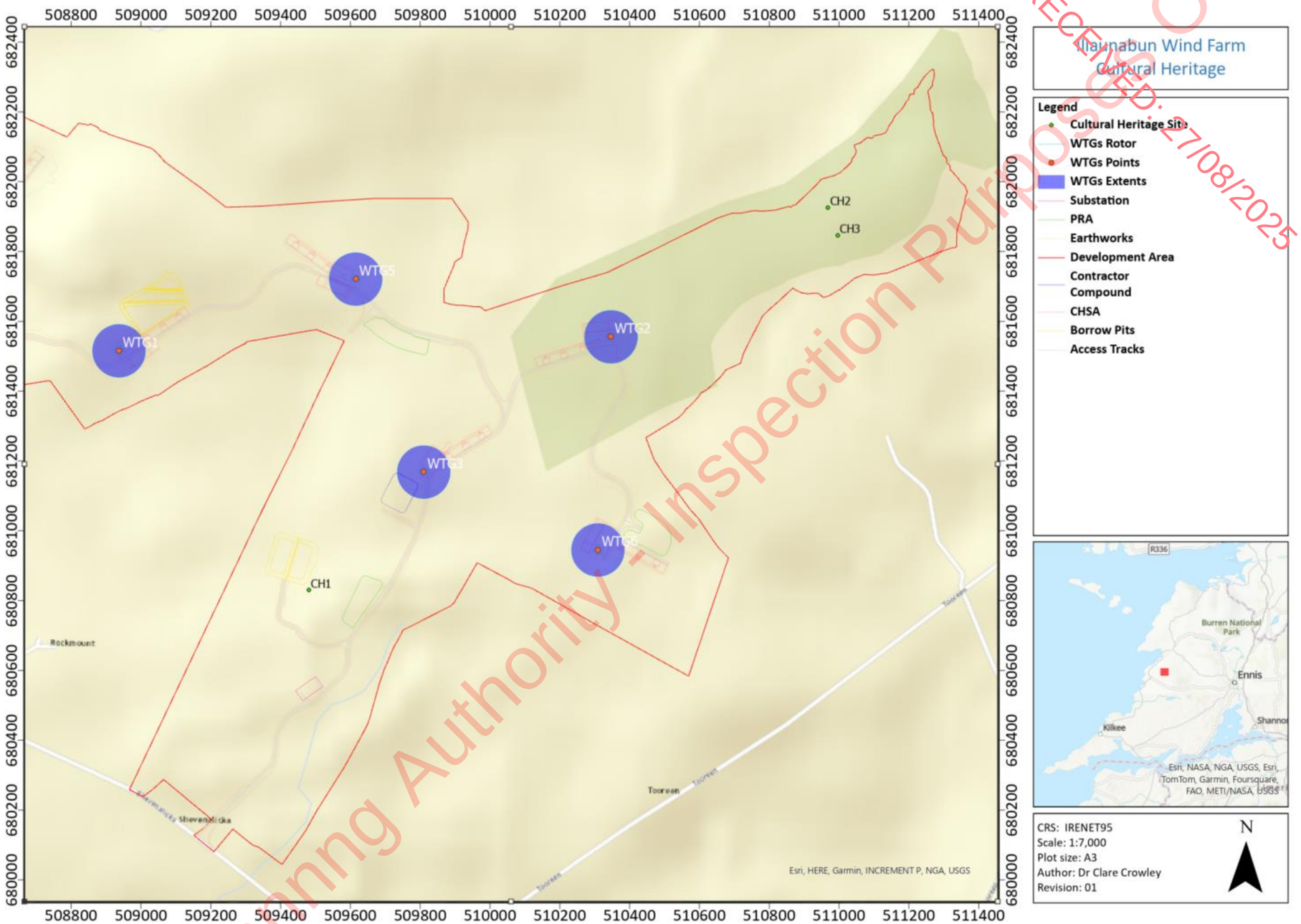

Figure 16-19: Non-Designated Cultural Heritage Sites within the Proposed Development area

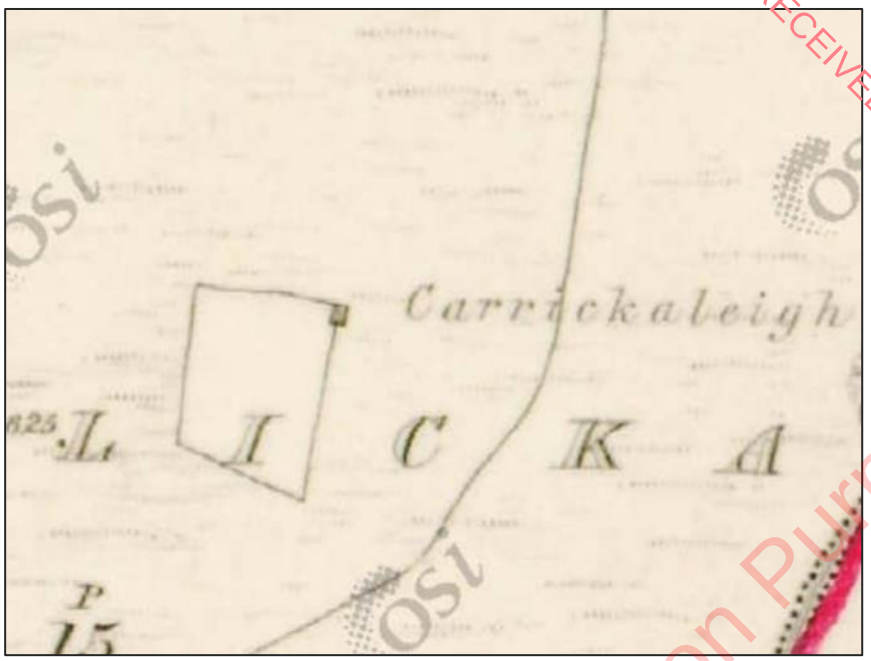

Figure 16-20: Structure (CH1) depicted on the first edition OS six-inch map (1839)

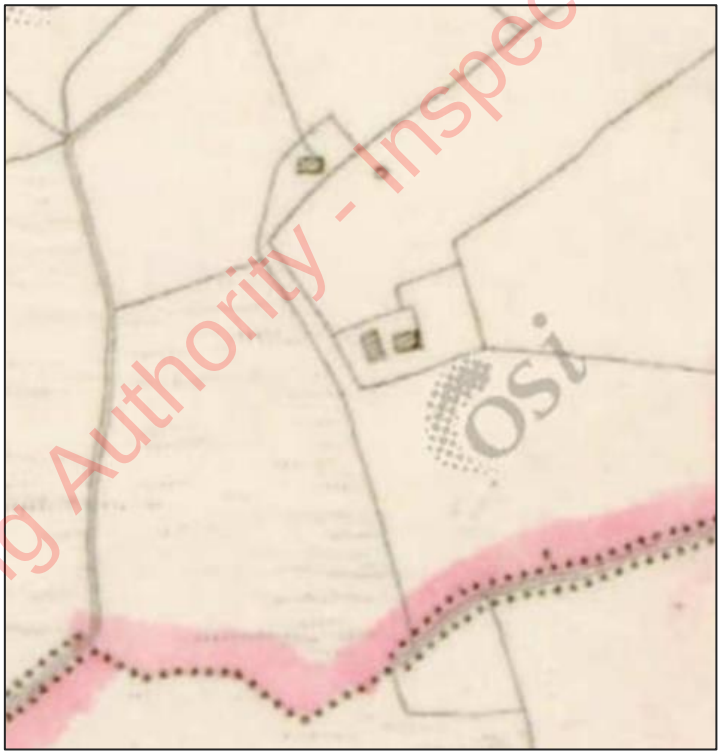

Figure 16-21: Structures (CH2 & CH3) depicted on the first edition OS six-inch map (1839

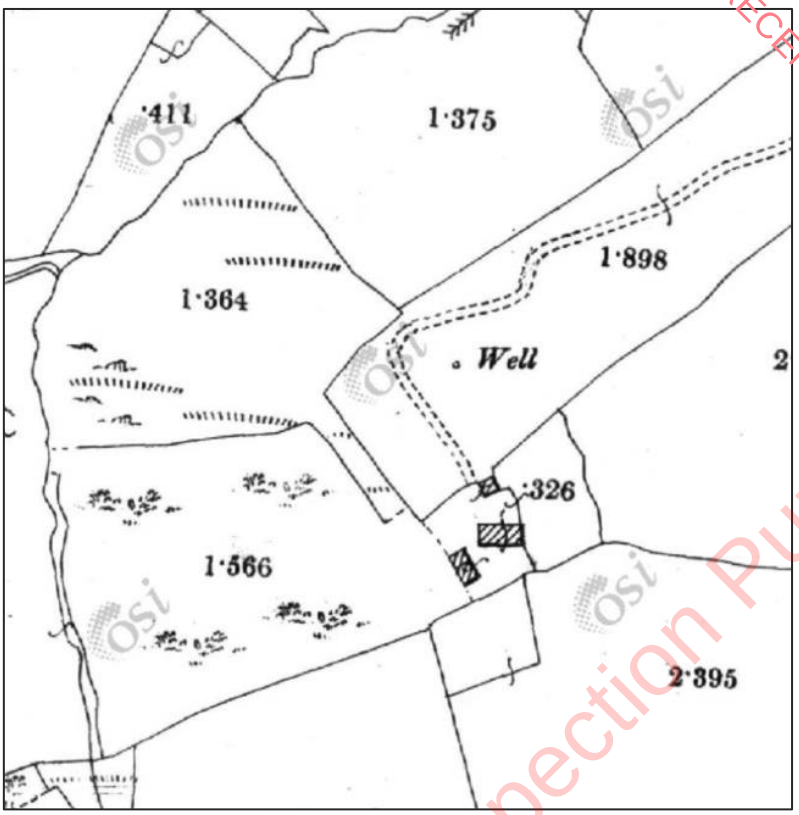

Figure 16-22: Structures (CH3) depicted on the OS 25-inch map (1895)

16.2.5 POTENTIAL FOR SUB-SURFACE ARCHAEOLOGY

No known archaeological sites are recorded within the Proposed Development Boundary, and no potential archaeological sites were identified through the desktop research and field walkover survey. The topography and land use (wet, boggy ground, overgrown areas of rough pasture, thick vegetation) precluded the use of geophysical survey and no specific sites of archaeological potential were identified on which to target archaeological testing. It was also found during the field survey walkover that most of the locations could only be accessed on foot, and it was noted that the ground conditions would present difficulties for or preclude machine access for testing.

The majority of the proposed access tracks will follow existing farm and forestry access tracks. Three of the proposed wind turbines (WTG2, WTG4, WTG5) and part of a fourth (WTG1), and associated platforms are located within existing forestry, as are the locations for the proposed substation and for the proposed peat repository area (PRA) nearest WTG5. Construction of the existing tracks and tree-planting and tree-root activity in the larger areas is very likely to have disturbed any archaeological deposits which may have existed. The archaeological potential in these areas is considered to be reduced.

For the areas of the Proposed Development that are located within undeveloped/undisturbed agricultural land or otherwise non-forested areas (WTG3, WTG6, part of WTG1, and associated platforms; borrow pits; short sections of new access track; compound; and the PRA at WTG6), these areas are considered to have an archaeological 'greenfield' potential, as they are previously

undisturbed. It is possible that previously unknown subsurface archaeological features and finds may be uncovered in these areas.

16.3 ASSESSMENT OF EFFECTS

16.3.1 "DO-NOTHING" SCENARIO

In the 'do-nothing' scenario, the Proposed Development site would not be redeveloped and, therefore, there would be no adverse effects to any, as of yet, undiscovered subsurface archaeological features or finds, nor to any features of architectural heritage, cultural heritage or historic interest.

16.3.2 CONSTRUCTION PHASE IMPACTS

No likely significant effects were identified in relation to cultural heritage during the construction phase.

There will be no impacts on any known cultural heritage receptors during the construction phase.

There is the potential for groundworks to disturb any previously unknown archaeological features that may be present at the proposed locations of WTG3, WTG6, part of WTG1, and associated platforms, borrow pits, sections of new access track, compound, and the PRA at WTG6. Ground disturbance works for the Proposed Development at these locations would have a direct negative impact on any such features that may be present. The significance of the effect is undetermined.

Table 16-12: Potential Impacts Construction Phase

Ref. No.	Category	Site Type	Potential Impact
CL023-044	Archaeology (RMP)	Ringfort - rath	No impact due to distance
CL031-009	Archaeology (RMP)	Ringfort - rath	No impact due to distance
CL023-026	Archaeology (RMP)	Ringfort – rath	No impact due to distance
CL023-030001	Archaeology (RMP)	Ringfort – rath	No impact due to distance
CL023-030002	Archaeology (RMP)	House - indeterminate date	No impact due to distance
CL023-031	Archaeology (RMP)	Ringfort – rath	No impact due to distance
CL023-034	Archaeology (RMP)	Earthwork	No impact due to distance
CL023-041		Ringfort – rath	No impact due to distance
CL023-043	Archaeology (RMP)	Ringfort – rath	No impact due to distance
CL023-061	Archaeology (RMP)	Concentric enclosure	No impact due to distance
CL031-006	Archaeology (RMP)	Earthwork	No impact due to distance
CL031-007	Archaeology (RMP)	Ringfort – rath	No impact due to distance
CL031-046	Archaeology (RMP)	Standing stone	No impact due to distance

Ref. No.	Category	Site Type	Potential Impact
RMP CL031-008001 to -008003 & RPS 635	Archaeology (RMP) Architecture (RPS)	Church, Graveyard, Holy well	No impact due to distance
CL031-018	Archaeology (RMP)	Ringfort – rath	No impact due to distance
CL031-019	Archaeology (RMP)	Earthwork	No impact due to distance
CH1	Cultural Heritage (Non-Designated)	Structure (site of)	No impact (outside area of proposed works)
CH2	Cultural Heritage (Non-Designated)	Structure & kiln (site of)	No impact due to distance
CH3	Cultural Heritage (Non-Designated)	Structures (site of)	No impact due to distance
n/a	Archaeology	Archaeological Potential (greenfield)	Potential for groundworks to disturb any previously unknown archaeological features that may be present. Significance of effect undetermined.

16.3.3 OPERATIONAL PHASE IMPACTS

No likely significant effects were identified in relation to cultural heritage during the operational phase.

Two impacts were identified in relation to cultural heritage during the operational phase: a moderate, long-term and negative impact on the setting of a ringfort at Drumbaun (RMP CL023-044), and a slight, long-term and negative impact on the setting of the ecclesiastical remains at Kilfarboy (RMP CL031-008001 to -008003 & RPS 635).

In accordance with accepted guidance, setting is not exclusively about the visual envelope; it embraces considerably more than just views. An impact on setting will only occur if the change affects the contribution made by setting to the significance of the asset. It is considered that the setting comprises those parts of the surroundings that contribute to significance. So, while the level of visual change has been documented as part of this process (Section 16.2.3.3), this impact assessment strives to assess the effect on the significance of the asset. It is possible to make major changes to the setting and have little effect on the significance of the asset because the setting contributes little to that significance. Therefore, impact magnitude is expressed in terms of the degree to which the significance of the asset is increased or decreased.

The upper elevation of the turbines would be clear and a noticeable element in the immediate forested and hillside setting, from the ringfort at Drumbaun (RMP CL023-044). This will introduce substantial change to the view to the east/south-east, however, views in this direction are not considered to contribute substantially to the significance of the setting. The long range and distant views to the west and north-west, which may have influenced the siting of the monument and have been more significant in the context of its setting, will remain unchanged. This visual change will not

restrict the open and expansive nature of the views from this site. The effect of the introduction of the proposed turbines on the setting of the site from a cultural heritage perspective would therefore be of a medium magnitude, in which there is a noticeable change in the receiving environment in one direction, but this change does not alter the integrity of the monument. The sensitivity of the designated receptor is medium, giving an overall significance of effect of moderate, long-term and negative.

Although the turbines will be visible above the ridgeline to the west from the ecclesiastical remains at Kilfarboy (RMP CL031-008001 to -008003 & RPS 635), the distance will greatly reduce any visual dominance or intrusiveness. There is a change in the receiving environment in one direction, but this change does not alter the integrity of the monument. The scale of the Proposed Development is small, with only six turbines, and as a development, it will be visually permeable (as opposed to a large block of development). In addition, the focus of the ecclesiastical site is insular by nature (being an ecclesiastical site) with no designed vistas or views, all of which mitigates the effect, resulting in a low magnitude. The significance of the designated receptor is medium, giving an overall significance of effect of slight, long-term and negative.

Table 16-13: Operation Phase Effects

Ref. No.	Category	Site Type	Operation Effect
CL023-044	Archaeology (RMP)	Ringfort - rath	Moderate long-term negative effect on the setting of the receptor due to the visibility of the turbines.
RMP CL031-008001 to -008003 & RPS 635	Archaeology (RMP) Architecture (RPS)	Church, Graveyard, Holy well	Slight long-term negative effect on the setting of the receptors due to the visibility of the turbines.

16.3.4 CUMULATIVE EFFECTS AND OTHER INTERACTIONS

No interactions were identified during the assessment process.

16.3.4.1 CONSTRUCTION PHASE

No construction phase cumulative effects were identified in relation to cultural heritage.

16.3.4.2 OPERATIONAL PHASE

No other wind farms or intrusive development are visible from the ringfort in Drumbaun (RMP CL023-044) or from Kilfarboy Church, Graveyard and Holy Well (RMP CL031-008001 to -008003 & RPS 635), the only designated Cultural Heritage receptors for which an impact was identified. As such, no cumulative effects were identified.

16.4 MITIGATION FOR CULTURAL HERITAGE

16.4.1 CONSTRUCTION PHASE MITIGATION MEASURES

The topography and land use (wet ground, overgrown areas of rough pasture) preclude the use of geophysical survey in the non-forested / previously undisturbed areas. In addition, no specific sites of archaeological potential were identified on which to undertake advanced targeted archaeological testing. The ground conditions would also present difficulties for or preclude machine access for testing and potentially unsafe working conditions.

Given the archaeological potential of these greenfield areas, a programme of archaeological testing will take place well in advance of construction, in areas where access is possible and conditions are deemed to be safe, to determine whether any features, finds or deposits are present. Where access and ground conditions preclude this, the testing will take place once site enabling works have commenced to allow access into the site and provide safe working conditions.

A report on the results of the testing will be submitted to the relevant authorities. Any archaeological sites or features identified during testing will be preserved by record (archaeologically excavated) or preserved in-situ (avoidance), following consultation with the National Monuments Service and the National Museum of Ireland.

Archaeological testing under licence to the National Monuments Service of the Department of Housing, Local Government and Heritage (DHLGH) will be carried out at the following locations:

- Proposed turbines WTG3, WTG6, part of WTG1 and associated platforms
- Proposed borrow pits
- Proposed compound
- Proposed PRA at WTG6
- Sections of access track in greenfield areas

In addition, archaeological monitoring under licence to the National Monuments Service (DHLGH) of all earth-moving works during construction will be undertaken. The purpose of monitoring is to determine if any archaeological material or features are uncovered during ground disturbance works. In the event of the discovery of archaeological finds or remains, the DHLGH and the NMI will be notified immediately. Provision will be made to allow for and fund any archaeological work that may be needed if any remains are noted. If features are revealed, the immediate area will be investigated, allowing no further development to take place until the site is fully identified, recorded and excavated or alternatively avoided to the satisfaction of the statutory authorities.

During the construction phase, all mitigation measures will be undertaken in compliance with national policy guidelines and statutory provisions for the protection of the archaeological, architectural and cultural heritage.

16.4.2 OPERATIONAL PHASE MITIGATION MEASURES

All physical cultural heritage impact issues will be resolved at the construction stage of the development. With regard to impacts on the settings of the ringfort in Drumbaun (RMP CL023-044) or from Kilfarboy Church, Graveyard and Holy Well (RMP CL031-008001 to -008003 & RPS 635), the effects cannot be mitigated due to the scale and size of the proposed turbines during the project life.

16.5 ASSESSMENT OF RESIDUAL EFFECTS

16.5.1 INTRODUCTION

Residual effects are the degree of environmental change that will occur after the proposed mitigation measures have taken effect. No significant residual effects were identified in relation to cultural heritage.

16.5.2 PERMANENT EFFECTS

No residual permanent effects were identified.

16.5.3 CONSTRUCTION EFFECTS

No residual construction effects were identified. All physical cultural heritage impact issues will be resolved at the pre-construction and construction stage of the development.

16.5.4 OPERATION EFFECTS

During the 30-year operation of the wind farm, the development will continue to affect the setting of the ringfort in Drumbaun (RMP CL023-044) and Kilfarboy Church, Graveyard and Holy Well (RMP CL031-008001 to -008003 & RPS 635), resulting in a moderate long-term negative and slight long-term negative residual effect, respectively.

16.6 SUMMARY OF EFFECTS AND MITIGATIONS

Cultural Heritage Receptor	Potential Effect	Construction / Operation	Beneficial / Adverse/ Neutral	Extent (Site / Local / National / Trans-boundary)	Short term/ Long term	Direct/ Indirect	Permanent / Temporary	Reversible / Irreversible	Significance of Effect (according to defined criteria)	Proposed Mitigation	Residual Effects (according to defined criteria)
CL023-044	Moderate	Operation	Adverse	-	Long-term	Direct (on setting)	Temporary	Reversible	Moderate	None	Moderate
RMP CL031-008001 to -008003 & RPS 635	Slight	Operation	Adverse	-	Long -term	Direct (on setting)	Temporary	Reversible	Slight	None	Slight
Archaeological potential (greenfield)	Undetermined	Construction	Adverse	-		Direct	Permanent	Irreversible	Undetermined	Archaeological testing and monitoring	Undetermined

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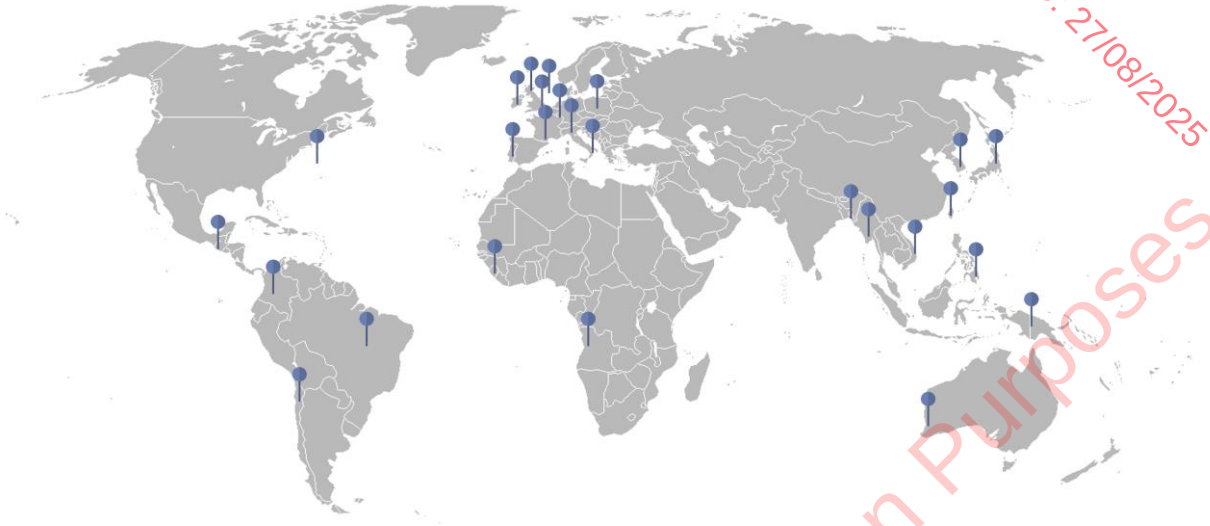
Global Project Reach



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