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Chapter 13 Cultural Heritage

Ballynisky Wind Farm

Ballynisky Green Energy Ltd.

December 2025

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Appendix

Appendix 13A – Recorded Monuments

Appendix 13B – Geophysical Survey Report

List of Abbreviations

Abbreviation	Full term
ACA	Architectural Conservation Areas
ASIAP	Archaeological Survey of Ireland Aerial Photographs
Ed.	Edition
c.	<i>circa</i>
CBD	Children's burial ground
DoEHLG	Department of the Environment Heritage and Local Government
NIAH	National Inventory of Architectural Heritage
NMN	National Monument Number
NMS	National Monuments Service
OS	Ordnance Survey
OSNB	Ordnance Survey Names Book
RMP	Record of Monuments and Places
RPS	Recorded Protected Structure
SMRS	Sites and Monuments Record
UAV	Unmanned aerial vehicle
VS	Vernacular Structure

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13. Cultural Heritage

13.1 Introduction

This chapter presents the results of an archaeological, geophysical, architectural and wider built heritage assessment of potential impacts of a proposed wind farm, known as Ballynisky Wind Farm (BWF) in Co. Limerick. A full description of the proposed development and its components has been provided in **Chapter 3** of this EIAR. In essence, this chapter assesses potential impacts on archaeology and wider cultural heritage of a proposal to construct:

- Six (6 No.) proposed turbines.
- Proposed substation and temporary compound.
- Proposed Met Mast.
- Proposed internal access track / grid connection between the turbines and proposed substation.
- Proposed grid connection.
- Temporary delivery access track.

13.1.1 Statement of Authority

This chapter was prepared and written by Laurence Dunne of Laurence Dunne Archaeology Ltd (LDA). Laurence is the principal and senior archaeologist of LDA and has been a licensed archaeologist for 29 years. In that time, he has completed an extensive and diverse range of projects, the vast majority of which are development driven. Projects range from small scale single house constructions to large scale residential and major commercial developments, wind and solar farms, roadways, water and sewerage schemes, pipelines, inter-connector telecom and electrical cabling both terrestrial and undersea, coastal defense and channel deepening projects, dive surveys and shipwreck excavations. His keen interest and expertise in underwater archaeology and wider coastal cultural heritage have led to a number of high-profile projects including the recovery and conservation of artefacts from the RMS Lusitania as part of an international expedition to make a documentary movie financed by National Geographic. Laurence has completed over forty archaeological/cultural sections for Environmental Impact Statements (EIS) and Archaeological Impact Assessments (AIA), excavations and monitoring in Ireland relating to renewable energy. Since 1999, Laurence Dunne has completed twenty-seven wind farm projects. The wind farm projects involved all facets of the planning process: EIA, AIA, test excavations in advance of planning as well as subsequent monitoring of construction works. LDA has also undertaken assessments with regard to linear grid cable trenching for planning purposes as well as targeted test trenching and follow-up monitoring at several sites in North and East Kerry and Limerick.

13.2 Methodology

The assessment was completed using a combination of: (1) desk-based assessment of all available archaeological, historical, cultural and cartographic sources; (2) field inspection of the limits of the proposed BWF site in December 2021; (3) inspection of the proposed grid cable route (Option A) in June and November 2022; (4) licensed geophysical survey and analysis. Field inspection results are still relevant at the present day as archaeological or cultural heritage sites are not subject to dynamic changes.

A desk-based assessment is defined as a programme of study of the historic environment within a specified area or site that addresses agreed research and / or conservation objectives. In that context, the primary EIAR study area extends for c.300m from the proposed turbines and substation. To assess potential indirect impacts of the proposed BWF on the wider encompassing cultural environment a c.3km radius zone was established for recorded archaeological monuments (**Figure 13-3**). Additionally, National Monuments were assessed within a c.10km radius from the limits of

BWF. The study zones above were created for the purpose of this report and were based on professional experience and judgment based on several similar projects undertaken by the author (see **Section 13.1.1**).

To assess potential direct impact, c.200m corridor encompassing the proposed grid connection (Option A) was established. This 200m corridor was created based on a 60m radius Zone Of Notification of the monuments in the area as well as on a potentiality of discovery unrecorded features associate with the monuments. For the purposes of this assessment, the Wind Farm site has been considered separately from Grid Connection Option A, which constitutes a linear infrastructure element located outside the main development footprint. Grid Connection Option B is situated entirely within the Wind Farm site boundary. Accordingly, these works are assessed within this Chapter as an integral component of the Wind Farm.

Licensed test excavations on the footprint of the proposed BWF and further targeted testing of anomalies identified in the geophysical report were not included in this study. However, they will be undertaken in advance of construction as a Condition of planning if granted. The above strategy reflects a recent ACP Inspectors report (<https://www.pleanala.ie/en-ie/case/321242>) extracted verbatim viz: - *'The OPR Practice Note PN03 on Planning Conditions (2022) confirms the use of planning conditions to address archaeological concerns post-consent, and the associated NMS Explanatory Note and Glossary of Terms acknowledges that in cases where archaeological remains may be present, planning permission may be granted with a condition requiring pre-development archaeological testing. I have taken into consideration the stated precedent cases where An Bord Pleanála granted permission for solar farms subject to conditions requiring pre-development test trenching. I am satisfied that the Planning Authority's concerns regarding potential impacts on archaeology on the site can be dealt with by way of Condition in the event of a grant of permission. On this basis, I conclude that the proposed development complies with Objective EH O37 of the Limerick City and County Development Plan 2022-2028. Therefore, I recommend the Board not uphold the Planning Authority's reason for refusal'*.

13.2.1 Research Sources

The following sources were examined:

- Sites and Monuments Records / Record of Monuments and Places:
The Sites and Monuments Records (SMR) / Record of Monuments and Places (RMP) compiled by the Archaeological Survey of Ireland of the National Monuments Service (NMS) comprises lists, classifications of monuments and maps of all recorded monuments with known locations and zones of archaeological notification. All sites recorded on the Record of Monuments and Places (RMP) receive statutory protection under the National Monuments Act 1994. The monument records are searchable online from the NMS (www.archaeology.ie - assessed in January 2023).
- National Monuments in State Care Database:
This is a list of all the National Monuments in the State where each designated monument is assigned a National Monument number whether in guardianship or ownership and has a brief description. A National Monument receives statutory protection and is described 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 Act, 1930, Section 2). Once the site is in ownership or guardianship of the state, it may not be interfered with without the written consent of the Minister.
- Topographic Files of the National Museum of Ireland
The National Museum of Ireland (NMI) Topographic Files of artefacts found in Ireland by townland were examined as well as the online searchable browser database of artefacts on the Heritage Maps produced by the Heritage Council (www.heritagemaps.ie).

- **National Inventory of Architectural Heritage (NIAH) Database (Architectural & Garden Survey)**
The NIAH was established under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999. It is a government-based organisation tasked with making a nationwide record of local, regional, national and internationally significant structures dating to post-1700 AD. In turn this record provides county councils with a guide as to what structures to list within the Record of Protected Structures (RPS). A protected structure is a structure that is considered to be of 'special interest', which is broadly defined by the Planning and Development Act, 2000 as structures of architectural, historical, archaeological, artistic, cultural, scientific, social or technical point interest. The 2000 Act requires each planning authority to compile and maintain a list of RPS's. The RPS is a mechanism for the statutory protection of the architectural heritage and is listed in every County Development Plan and Town Development Plan (see below). Only those structures of regional importance or above are included in the Minister's recommendations for inclusion in the RPS. The NIAH have also carried out a nationwide desk-based survey of historic gardens, including demesnes of large houses.
- **Limerick Development Plan 2022-2028**
The Development Plan for County Limerick (2022-2028) which contains a catalogue of all the Protected Structures, archaeological sites and Architectural Conservation Areas (ACA) within the county was also examined.
- **Excavation Bulletin**
The Excavations Bulletin and its online database which contains summaries of all archaeological excavations carried out in Ireland since 1970 up to present, was also examined in February 2023 to establish if any archaeological investigations had been carried out within or near to the area of the BWF (www.excavations.ie).
- **Placename Studies**
Placenames (*logainmneacha*) are an important aspect of understanding the history and topography of a location particularly when used in association with the Ordnance Survey Name Books (OSNB). The general or baseline placename research source is an online GIS portal which was accessed in June 2022 (www.logainm.ie).
- **Cartographic sources**
Several historic maps were examined including Down Survey (c. 1655), 1st Edition Ordnance Survey 6" map (1840-42) and 2nd Edition 25" (1893) maps of Co. Limerick.
- **Analysis of aerial imagery**
Aerial photographic coverage provides initial information on the terrain and its likely archaeological potential and is an important source of information regarding the precise location of sites and their extent. A variety of aerial photography was examined including aerial orthoimages from the National Monuments Service, Ordnance Survey (1995-2013), Google Earth (2004-2021), and Bing Maps websites. Furthermore, targeted, low flown, unmanned aerial vehicle (UAV) survey imagery of the proposed BWF site was undertaken during the field inspection in December 2021, June 2022 and November 2022.
- **Field inspection**
Field inspection is necessary to determine the extent and nature of archaeological, architectural, and cultural heritage remains and can also lead to the identification of previously unrecorded sites or artefacts. The field inspection for the WF (turbines location and internal grid connection / access track) was carried out in December 2021 and inspection of the proposed external grid route connection (Option A) in November 2022. The field inspection involved:
 - Prior examination of historic maps, records and aerial imagery.
 - Noting and recording the terrain type and current land usage.
 - Noting and recording the presence of known and previously unknown features of archaeological, architectural or cultural heritage significance.

- Noting the extent and condition of recorded sites and structures (RMPs/ RPS/ NIAH).
- Field walking supported by and coeval with targeted low flown UAV survey.
- Potential archaeological features mapped using a Global Navigation Satellite System (GNSS) to <50mm accuracy.
- Licensed Geophysical Survey
A licensed geophysical survey was undertaken targeted on nine areas (A – I) to effectively include the vast majority of the proposed windfarm based on the results of prior research and field inspection. Furthermore, liaison on the scope of the geophysics was undertaken and agreed with Sarah McCutcheon, LC& C archaeologist in advance. The geophysical survey was undertaken by Shanarc Archaeology under licence 24R0517.

13.2.2 Guidelines and Best Practice

The following guidelines were used as part of the assessment:

- National Monument Acts, 1930 to 2014;
- Heritage Acts 1995 and 2018;
- European Convention on the Protection of the Archaeological Heritage (the 'Valletta Convention') ratified by Ireland in 1997;
- Council of Europe Convention on the Protection of the Architectural Heritage of Europe (the 'Granada Convention') ratified by Ireland in 1997;
- Framework and Principles for the Protection of the Archaeological Heritage, 1999, Department of Arts, Heritage, Gaeltacht and the Islands;
- The Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous) Provisions Act, 1999, as amended;
- The conservation principles as set out by International Council on Monuments and Sites (ICOMOS) in the Venice and Burra Charters;
- Planning and Development Act, 2000, as amended;
- Architectural Heritage Protection-Guidelines for Planners by the Department of the Environment Heritage and Local Government 2011 (DoEHLG);
- The Architectural and Archaeological Heritage Objectives as detailed in Limerick Development Plan 2022-2028;
- The Advice Series-A Guide to the Care of Older Buildings published by the Architectural Heritage Advisory Unit of the DoEHLG, 2007-2011; and
- The National Inventory of Architectural Heritage (NIAH) Handbook, May 2024 Edition.

13.2.3 Statement on Limitations and Difficulties Encountered

No limitations/difficulties were encountered during this assessment.

13.3 Existing Receiving Environment

The proposed Ballynisky Wind Farm (BWF) development is located on low lying lands c.28km SW of Limerick City, with the main wind farm and turbine infrastructure occupying parts of three townlands viz: Ballynisky and Ballyegny More in the parish of Clonagh and Barony of Connello Lower, and Graigoor townland in the parish of Kilbradan and Barony of Shanid. The associated grid connection route is discussed in **Section 13.4**.

13.3.1 Archaeology

There are 15 known recorded monuments within the c.300m study zone encompassing the proposed BWF (main wind farm and turbine infrastructure) and c.200 recorded monuments within the wider, 3km radius study zone. There are

no National Monuments within the limits of BWF. However, 5 are located within a 10km radius of BWF. Full details of all archaeological assets are given in **Tables 13-1, 13-2** and shown on **Figures 13-1, 13-2** below.

National Monuments

A 'National Monument' as defined in Section 2 of the National Monuments Act (1930) as 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 in state care include those which are in the ownership or guardianship of the Minister for Culture Heritage and the Gaeltacht (now Housing, Local Government and Heritage). The property of such monuments remains in the owner's hands, but its maintenance and upkeep are the responsibility of the State.

There are no National Monuments in State Ownership / Guardianship situated directly on the footprint of the development or within the red line boundary of the proposed BWF (**Chapter 03** of this **EIAR**). There are five National Monuments in State Ownership / Guardianship situated within the 10km wider study area of the proposed BWF (**Figure 13-1, Table 13-1**). The assessment of these National Monuments was undertaken within the 10km study zone to establish potential cultural visual impacts. The assessment outside of 10km radius zone was not considered as possible cultural visual impact would be classified as *not-significant*, even if the turbines will be visible from monuments locations.

Table 13-1: National Monuments within 10km of Study Area

Nat. Mon. No.	SMR No.	Local name	Class	Status	Townland	ITM (E)	ITM (N)	Distance from proposed WF
201	LI011-092003	Askeaton Castle	Castle - Anglo-Norman masonry castle	Ownership	Aghalacka	534025	650311	8.2km to the NE
636 & 582	LI036-067002	Desmond Hall and Great Hall	Castle - Anglo-Norman masonry castle	Ownership	Castle Demesne	527874	633708	8.7km to the SSW
185	LI011-092006	Askeaton Abbey	Religious house - Franciscan friars	Guardianship	Moigh South	533931	650731	8.5km to the NE
459	LI028-102	Ardagh Fort	Ringfort	Ownership	Reerasta South	527443	638586	4.4km to the SW
459	LI028-102001	Reerasta Cloch	Standing Stone	Ownership	Reerasta South	527443	638586	4.4km to the SW

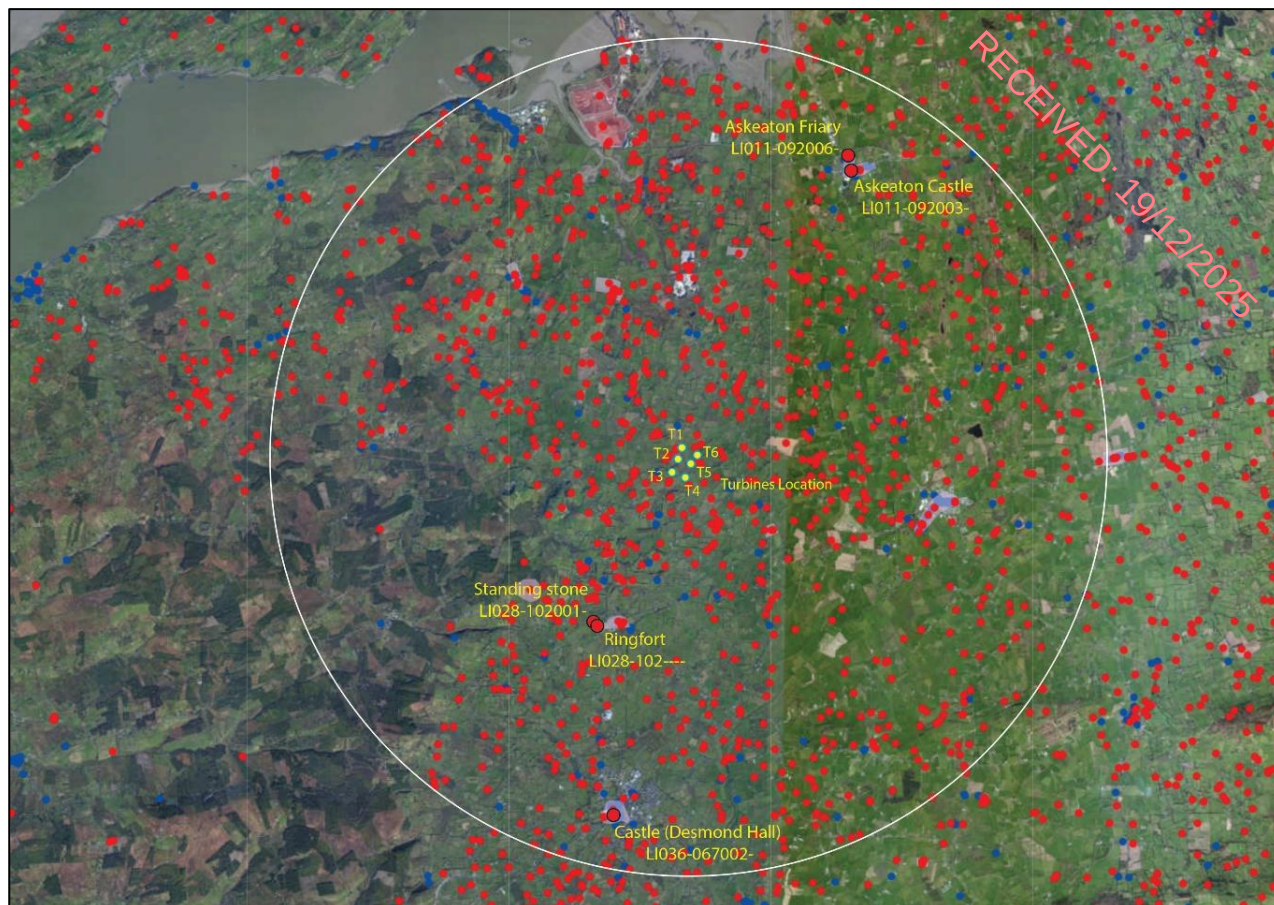


Figure 13-1: National Monuments Identified in 10km Radius of BWF. Red Dots Denote Recorded Monuments
(Adapted Extract from SMR Online Mapping (www.archaeology.ie)).

Recorded Monuments within the EIAR Study Area

The Sites and Monuments Records (SMR) / Record of Monuments and Places (RMP) list 15 monuments within the EIAR study area (maximum of c.300m distance from the proposed development (**Figure 13-2**). All 15 monuments are classified as ringforts or enclosures.

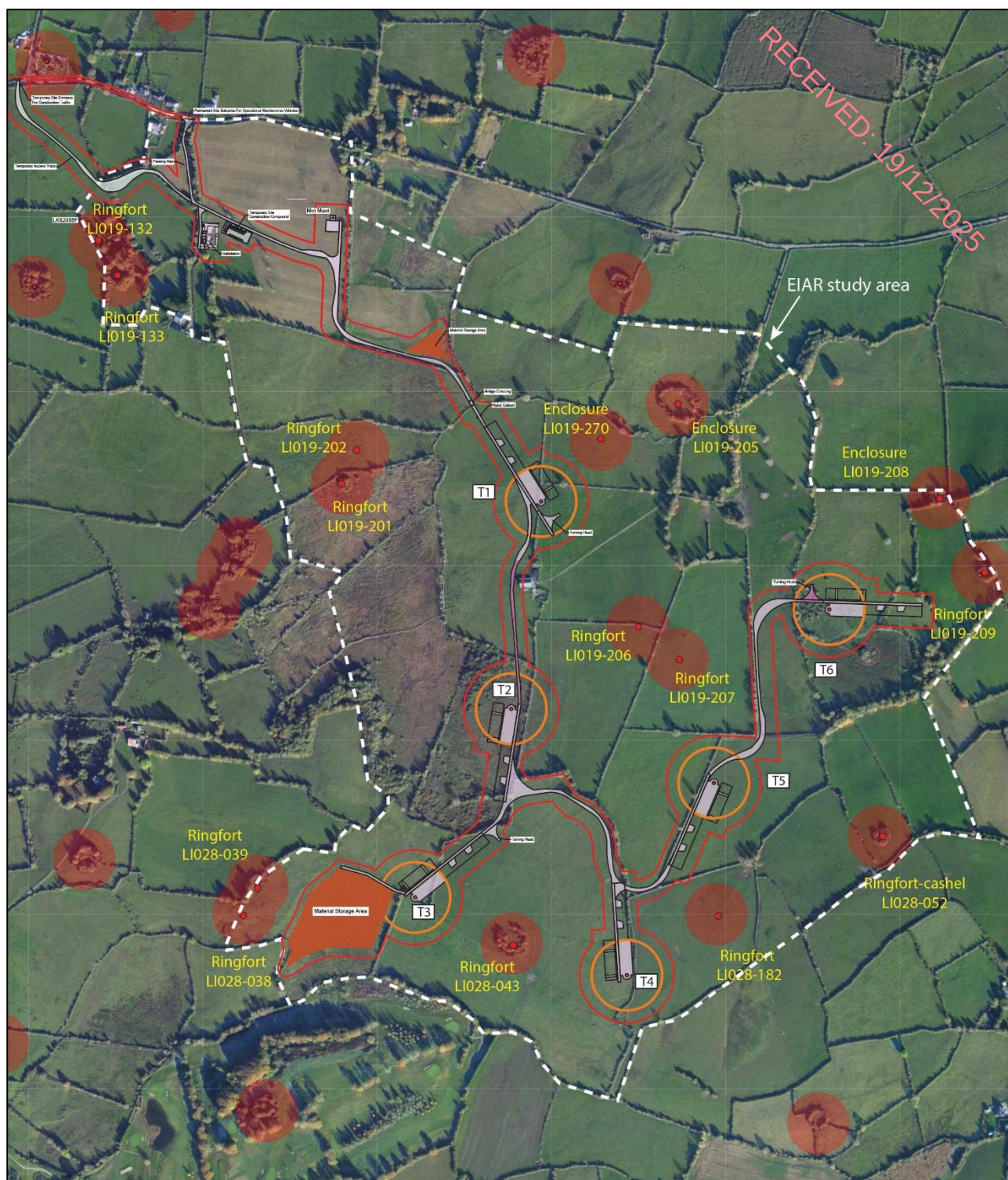


Figure 13-2: Recorded Monuments within the EIAR Study Area

Enclosures LI019-270 and LI019-205

The nearest recorded monument to BWF is an enclosure LI019-270, situated c.120m NE of proposed turbine T1 (**Figure 13-2**). This circular enclosure (c.20m in diameter) is not depicted on any of the OS historic maps and was first identified as a cropmark by the Archaeological Survey of Ireland Aerial Photographs (ASIAP) taken in 2006. Targeted UAV imagery undertaken during the field inspection of this study clearly confirmed the location of the monument (**Plate 13-1**).

A second enclosure (LI019-205) is situated c.220m to the NE of T1. This large enclosure is sub-oval in plan and measures c.80m NW-SE and 60m NE-SW. The interior is 'enclosed by earthen bank with external fosse (D 0.2m; Wth 2m). Bank (int. H 0.8m ext. H 0.75m) best preserved W->N. Dip in bank (Wth 2.4m) at SE' (www.archaeology.ie). The enclosure is clearly visible at ground level as it features a distinctive ring of mature trees (Plate 13-1).



Plate 13-1: Oblique UAV Image from SW of the Two Recorded Enclosures in Proximity of Turbine 1 (LDARCH 2022).

Ringfort LI028-043

A bivallate ringfort LI028-043 is located c.150m to the W of proposed turbine T4 and c.150m to the SE of proposed turbine T3 (Figure 13-2). The sub-oval ringfort measures c.55m NW-SE and 45m NE-SW and features a noticeable ring of mature trees. The internal platform is enclosed by two earthen/stone banks (bivallate) with an intervening fosse (Plate 13-2). The description in the National Monuments Service (NMS) database records: 'Inner bank evident NNE->NNW, highest along its W half (int. H 0.7m; ext. H 2.75m) but replaced by scarp NNW->NNE; at SSE is break in bank with causeway (Wth 3.4m) across fosse. Slight internal berm (max. Wth 5m; H 0.5m) evident at base of bank SW->NW, possibly due to slumping of bank material. Outer bank of earth-and-stone has an average external height of c. 0.85m but is highest WSW->NNW (int. H 2.2m; ext. H 1.1m) but has been levelled NNW->NNE. Fosse (Wth 3.25m base) covered by dense overgrowth around much of its perimeter' (ibid).



Plate 13-2: Oblique UAV Image of Bivallate Ringfort LI028-043 from SE (LDARCH 2022).

Ringfort LI028-182

Ringfort LI028-182 is situated c.150m to the E of proposed turbine T4 (**Figure 13-2**). The ringfort is not depicted on any of the OS historic maps but is clearly visible on aerial images as a sub-circular cropmark, measuring c.35m (NE-SW) x 36m (NW-SE). The monument has an external shallow fosse most evident in the SW-NE quadrant (*ibid*). In the course of fieldwork for this study, the monument was clearly evident at ground level and on aerial UAV imagery (**Plate 13-3**).



Plate 13-3: View from E of Recorded Ringfort LI028-182. Note Ringfort LI028-043 in the Background (LDARCH 2022).

Ringforts LI019-207 and LI019-206

Two ringforts are situated approximately in the central area of BWF (i.e., between T1 and T5). Ringfort LI019-207 is situated c.200m to the N of T5 and LI019-206 c.280m to the SE of T1. Both monuments are depicted on the historic OS maps. However, both ringforts were levelled in the past and no obvious trace is visible overground today. UAV imagery taken during the field inspection revealed the circular shape of ringfort LI019-207 (**Plate 13-4**). There was no definitive above ground evidence of the second ringfort LI019-206, although a raised platform was noted that may reflect the possible interior of the ringfort.



Plate 13-4: Oblique UAV View from SE of the Cropmark of Levelled Ringfort LI019-207 and Site of Levelled Ringfort LI019-206 Beyond (LDARCH 2022).

Ringforts LI019-202 and LI019-201

Two further recorded ringforts are situated within c.40m from each other and c.280m to the W of proposed turbine T1. Ringfort LI019-202 is depicted on the historic OS maps. The c.45m diameter ringfort was levelled in the past but is visible on aerial images and noticeable at ground level.

The second ringfort, LI019-201, is bivallate and is more visible. The ringfort is described in the NMS database as a 'Circular area (diam. c. 20m) enclosed by two concentric earthen banks with wide intervening fosse (Wth 5.7m; D 0.35m). Inner bank (int. H 0.35m; ext. H 0.9m) is heavily masked by overgrowth. Outer bank (ext. H 0.3m), surviving N->E and SE->W, is best preserved SE->WSW. It is incorporated into field boundary which kinks around outer edge of fosse W->N. Break in outer bank at E->SE matched roughly by dip in inner bank at ESE. Interior is completely covered by dense vegetation overgrowth (www.archaeology.ie)'.

Ringforts LI028-039 and LI028-038

Both of these ringforts are situated c.20m from each other and c.280m to the W of proposed turbine T3. They are depicted on the historic OS maps but have since been levelled with very little relict above ground evidence of the bank and ditch surviving today. The remains of the ringfort LI028-039 are represented by a 'circular area (22.5m N-S; 22.5m E-W) defined by scarped edge (H 0.6m; Wth 3.9m) NNE->SW and enclosed by curving field boundary incorporating enclosing bank SW->NNE' (ibid). Ringfort LI028-038 is defined by a 'roughly circular area (33m N-S; 30m E-W) enclosed by scarped edge (H 0.55m; Wth 3.2m), with external fosse (D 0.1m; Wth 1.2m) evident NNE->ENE and W->NNW but truncated by dry-stone field boundary NNW->NNE. Counterscarp bank (int. H 0.1m; ext. H 0.3m) evident NNE->ENE' (ibid).

Ringfort - Cashel LI028-052

A ringfort – cashel, LI028-052, is located on flat grassy pasture c.300m to the SE of proposed turbine T5. It is depicted on the historic OS maps as roughly circular, measuring c.30m in diameter and enclosed by a single wall. Field inspection revealed that the enclosing wall was highly overgrown and concealed beneath a robust growth of briars and small mature trees were noted within the interior (**Plate 13-5**).



Plate 13-5: Oblique UAV View from N of Ringfort-Cashel LI028-052 (LDARCH 2022).

Enclosure LI019-208 and Ringfort LI019-209

Two recorded monuments are located c.300m to the E and NE of proposed T6. They are both depicted on the pre-famine 1st Edition historic OS map as sub-circular shaped tree covered monuments.

Enclosure LI019-208 is described in the NMS online database as '*a roughly rectangular area (20.8m N-S; 36m E-W) partially enclosed by earth and stone bank (int. H 0.9m; ext. H 0.9m) best preserved along W side. Covered silage pit with two retaining concrete walls built near centre; wall to S runs along line of removed enclosing bank. Two small concrete yards adjoin pit to E and W. Linear enclosing bank to N, masked by dense vegetation, incorporated into field boundary; enclosing element to E removed. Recent gaps (Wth. c. 3m) in NW and SW corners. Farm passage (on N-S axis) enters E yard area at NE.*' (ibid).'

The ringfort LI019-209 is located c.100m SE of enclosure LI019-208. It is sub-oval in plan (24.7m N-S; 28.5m E-W) and enclosed by an earthen bank with mature trees growing along the bank. The interior is also partially overgrown with trees (ibid).

Recorded Monuments within a 3.0km Radius Study Area

Examination of the Sites and Monuments Records (SMR) / Record of Monuments and Places (RMP) revealed 194 recorded monuments within a c.3 km radius zone from outermost limits of the proposed turbines, of which three are redundant records. The created 3km radius zone was based on professional experience as well as analysis of the landscape and site inspection supported by drone survey. The vast majority of the recorded monuments are from the medieval period, with ringforts (138) being the dominant type representing just over 71% of the total (**Figure 13-3; Table 13-2**). If the 17 enclosures (<9%) are included as possible original ringforts, the total increases to 80%. The prehistoric period is represented in the 3.0km radius study area by 8 monuments (c.4%) comprising of 3 standing stones (**Figure 13-3, Nos. 84, 182 & 183**) and 5 fulachta fiadh (**Figure 13-3, Nos. 21, 83, 85, 86 & 89**) all of which generally date to the Bronze Age.

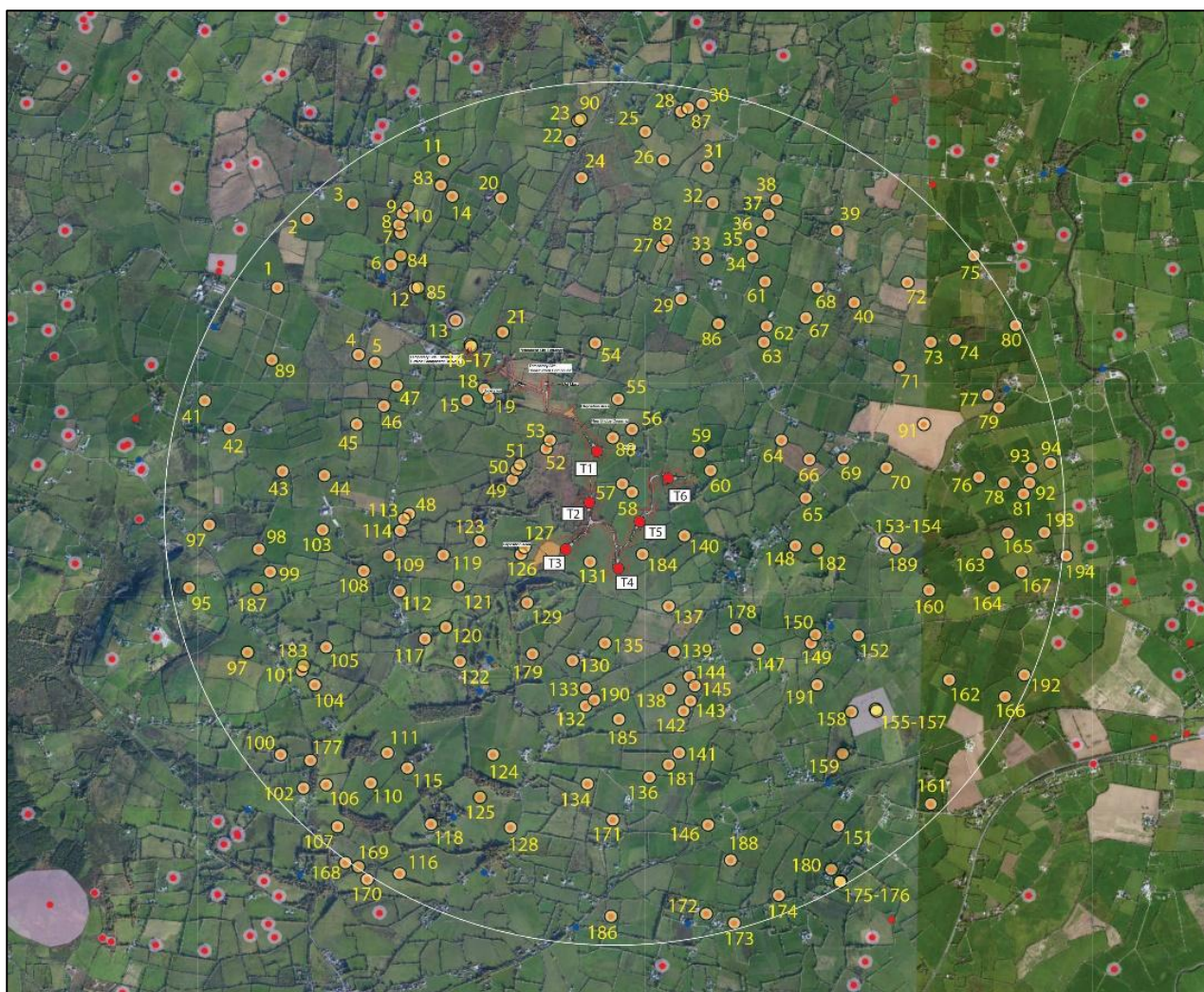


Figure 13-3: Recorded Monuments in c.3km Radius from the BWF

Table 13-2: Recorded Monuments in c.3km Radius from the BWF

No.	SMR No.	Class	Townland	ITM (E)	ITM (N)	Distance (circa)
1	LI019-108- ---	Ringfort – rath	DUNMOYLAN	527470	644392	c. 2.7km to the NW of nearest T1
2	LI019-110- ---	Ringfort – rath	LISBANE	527697	644932	c. 2.8km to the NW of nearest T1

No.	SMR No.	Class	Townland	ITM (E)	ITM (N)	Distance (<i>circa</i>)
3	LI019-111- ---	Ringfort – rath	LISBANE	528039	645049	c. 2.8km to the NW of nearest T1
4	LI019-112- ---	Ringfort – rath	BALLYSTEEN (Shanid By.)	528086	643858	c. 1.9km to the NW of nearest T1
5	LI019-113- ---	Ringfort – rath	BALLYSTEEN (Shanid By.)	528211	643802	c. 1.8km to the NW of nearest T1
6	LI019-114- ---	Ringfort – rath	BALLYSTEEN (Shanid By.)	528331	644568	c. 2km to the NW of nearest T1
7	LI019-115- ---	Ringfort – rath	LISBANE	528405	644822	c. 2.2km to the NW of nearest T1
8	LI019-116- ---	Ringfort – rath	LISBANE	528391	644885	c. 2.3km to the NW of nearest T1
9	LI019-117- ---	Ringfort – rath	LISBANE	528414	644971	c. 2.3km to the NW of nearest T1
10	LI019-118- ---	Ringfort – rath	LISBANE	528452	645026	c. 2.3km to the NW of nearest T1
11	LI019-125- ---	Ringfort – rath	LISBANE	528728	645397	c. 2.5km to the NW of nearest T1
12	LI019-126- ---	Ringfort – rath	LISBANE	528509	644385	c. 1.8km to the NW of nearest T1
13	LI019-127- ---	Hilltop enclosure	LISBANE	528821	644129	c. 1.4km to the NW of nearest T1
14	LI019-129- ---	Enclosure	LISBANE	528792	645109	c. 2.2km to the NW of nearest T1
15	LI019-130- ---	Enclosure	KILBRADLAN	528907	643502	c. 1km to the NW of nearest T1
16	LI019-131001-	Church	KILBRADLAN	528931	643939	c. 1.2km to the NW of nearest T1
17	LI019-131002-	Graveyard	KILBRADLAN	528937	643926	c. 1.2km to the NW of nearest T1
18	LI019-132- ---	Ringfort – rath	KILBRADLAN	529035	643591	c. 1km to the NW of nearest T1
19	LI019-133- ---	Ringfort – rath	KILBRADLAN	529071	643523	c. 0.9km to the NW of nearest T1
20	LI019-134- ---	Ringfort – rath	LISBANE	529160	645095	c. 2km to the N of nearest T1
21	LI019-135- ---	Fulacht fiadh	KILBRADLAN	529179	644039	c. 1.1km to the NW of nearest T1
22	LI019-136- ---	Ringfort – rath	TUBBRID	529683	645548	c. 2.4km to the N of nearest T1
23	LI019-137- ---	Ritual site - holy well	TUBBRID	529747	645705	c. 2.5km to the N of nearest T1
24	LI019-138- ---	Ringfort – rath	KILBRADLAN	529772	645257	c. 2km to the N of nearest T1
25	LI019-139- ---	Ringfort – rath	CREEVES (Shanid By.)	530256	645617	c. 2.5km to the N of nearest T1
26	LI019-141- ---	Ringfort - cashel	CREEVES (Shanid By.)	530391	645398	c. 2.3km to the N of nearest T1
27	LI019-142- ---	Ringfort – rath	COOLTOMIN	530378	644716	c. 1.6km to the NE of nearest T1
28	LI019-143- ---	Ringfort – rath	CREEVES (Shanid By.)	530525	645778	c. 2.7km to the NE of nearest T1
29	LI019-144- ---	Ringfort – rath	COOLTOMIN	530522	644295	c. 1.3km to the NE of nearest T1

No.	SMR No.	Class	Townland	ITM (E)	ITM (N)	Distance (<i>circa</i>)
30	LI019-145- ---	Ringfort – rath	CREEVES (Connello Lower By.)	530685	645841	c. 2.8km to the NE of nearest T1
31	LI019-146- ---	Ringfort – rath	COOLTOMIN	530725	645342	c. 2.3km to the NE of nearest T1
32	LI019-147- ---	Ringfort – rath	COOLTOMIN	530761	645060	c. 2km to the NE of nearest T1
33	LI019-148- ---	Ringfort – rath	COOLTOMIN	530718	644614	c. 1.6km to the NE of nearest T1
34	LI019-151- ---	Ringfort – rath	COOLTOMIN	531065	644626	c. 1.8km to the NE of nearest T6
35	LI019-152- ---	Ringfort – rath	COOLTOMIN	531053	644729	c. 1.9km to the NE of nearest T6
36	LI019-153- ---	Ringfort – rath	COOLTOMIN	531135	644835	c. 2km to the NE of nearest T6
37	LI019-154- ---	Enclosure	COOLTOMIN	531184	644966	c. 2.1km to the NE of nearest T6
38	LI019-155- ---	Ringfort – rath	COOLTOMIN	531245	645086	c. 2.3km to the NE of nearest T6
39	LI019-160- ---	Ringfort – rath	COOLTOMIN	531704	644836	c. 2.3km to the NE of nearest T6
40	LI019-162- ---	Ringfort – rath	COOLTOMIN	531838	644272	c. 2km to the NE of nearest T6
41	LI019-190- ---	Ringfort – rath	CARRONS	526919	643494	c. 2.9km to the W of nearest T1
42	LI019-191- ---	Ringfort – rath	CARRONS	527106	643280	c. 2.7 km to the W of nearest T1
43	LI019-192- ---	Ringfort – rath	CARRONS	527512	642940	c. 2.2km to the W of nearest T3
44	LI019-193- ---	Ringfort – rath	RATHNAGORE	527827	642907	c. 1.9km to the W of nearest T3
45	LI019-194- ---	Ringfort – rath	BALLYNEETY (Shanid By.)	528071	643310	c. 1.7km to the W of nearest T1
46	LI019-195- ---	Ringfort – rath	BALLYNEETY (Shanid By.)	528273	643457	c. 1.6km to the W of nearest T1
47	LI019-196- ---	Ringfort – rath	BALLYNEETY (Shanid By.)	528378	643617	c. 1.5km to the W of nearest T1
48	LI019-198- ---	Ringfort – rath	BALLYNEETY (Shanid By.)	528470	642603	c. 1.2km to the W of nearest T3
49	LI019-199- ---	Ringfort – rath	GRAIGOOR	529246	642877	c. 0.6km to the W of nearest T2
50	LI019-200001-	Ringfort – rath	GRAIGOOR	529283	642952	c. 0.6km to the W of nearest T2
51	LI019-200002-	Ringfort – rath	GRAIGOOR	529309	642994	c. 0.6km to the W of nearest T2
52	LI019-201- ---	Ringfort – rath	GRAIGOOR	529505	643120	c. 0.3km to the W of nearest T1
53	LI019-202- ---	Ringfort – rath	GRAIGOOR	529536	643183	c. 0.3km to the W of nearest T1
54	LI019-203- ---	Ringfort – rath	BALLYLIN, Part of (Shanid By., Lismakeery ED)	529880	643951	c. 0.8km to the N of nearest T1
55	LI019-204- ---	Ringfort – rath	LISSATOTAN (Connello Lower By.)	530046	643508	c. 0.4km to the NE of nearest T1
56	LI019-205- ---	Enclosure	LISSATOTAN (Connello Lower By.)	530157	643274	c. 0.2km to the NE of nearest T2

No.	SMR No.	Class	Townland	ITM (E)	ITM (N)	Distance (<i>circa</i>)
57	LI019-206- ---	Ringfort – rath	BALLYNISKY	530080	642842	c.0.2km to the SW of nearest T2
58	LI019-207- ---	Ringfort – rath	BALLYNISKY	530157	642778	c.0.2km to the S of nearest T5
59	LI019-208- ---	Enclosure	BALLYNISKY	530665	643092	c. 0.3km to the NE of nearest T6
60	LI019-209- ---	Ringfort – rath	BALLYNISKY	530750	642947	c. 0.3km to the E of nearest T6
61	LI019-210- ---	Ringfort – rath	LISSATOTAN (Shanid By.)	531162	644433	c. 1.7km to the NE of nearest T6
62	LI019-211- ---	Ringfort – rath	LISSATOTAN (Shanid By.)	531174	644082	c. 1.4km to the NE of nearest T6
63	LI019-212- ---	Ringfort – rath	LISSATOTAN (Shanid By.)	531156	643961	c. 1.3km to the NE of nearest T6
64	LI019-213- ---	Ringfort – rath	GORTROE (Connello Lower By.)	531285	643187	c. 0.9km to the E of nearest T6
65	LI019-214- ---	Ringfort – rath	GORTROE (Connello Lower By.)	531469	642727	c. 1km to the E of nearest T6
66	LI019-215- ---	Ringfort – rath	GORTROE (Connello Lower By.)	531496	643032	c. 1km to the E of nearest T6
67	LI019-216- ---	Ringfort – rath	LISSATOTAN (Shanid By.)	531471	644154	c. 1.6km to the NE of nearest T6
68	LI019-217- ---	Ringfort – rath	LISSATOTAN (Shanid By.)	531554	644391	c. 1.8km to the NE of nearest T6
69	LI019-218- ---	Ringfort – rath	GORTROE (Connello Lower By.)	531755	643037	c. 1.3km to the E of nearest T6
70	LI019-219- ---	Ringfort – rath	GORTROE (Connello Lower By.)	532081	642966	c. 1.6km to the E of nearest T6
71	LI019-220- ---	Mound	RANAHAN	532181	643766	c. 1.9km to the NE of nearest T6
72	LI019-221- ---	Ringfort – rath	ARDLAMAN	532241	644427	c. 2.3km to the NE of nearest T6
73	LI019-222- ---	Ringfort – rath	RANAHAN	532415	643957	c. 2.2km to the NE of nearest T6
74	LI019-223- ---	Ringfort – rath	RANAHAN	532599	643982	c. 2.4km to the NE of nearest T6
75	LI019-224- ---	Ringfort – rath	ARDLAMAN	532742	644641	c. 2.9km to the NE of nearest T6
76	LI019-225- ---	Ringfort – rath	RIDDLESTOWN	532782	642893	c. 2.3km to the E of nearest T6
77	LI019-226- ---	Ringfort – rath	RANAHAN	532844	643544	c. 2.4km to the E of nearest T6
78	LI019-227- ---	Ringfort – rath	RIDDLESTOWN	532974	642845	c. 2.5km to the E of nearest T6
79	LI019-228- ---	Ringfort – rath	RIDDLESTOWN	532935	643443	c. 2.5km to the E of nearest T6
80	LI019-229- ---	Ringfort – rath	ARDLAMAN	533061	644095	c. 2.8km to the NE of nearest T6
81	LI019-232- ---	Ringfort – rath	RIDDLESTOWN	533116	642760	c. 2.6km to the E of nearest T6
82	LI019-235- ---	Enclosure	COOLTOMIN	530422	644765	c. 1.6km to the N of nearest T1
83	LI019-254- ---	Fulacht fiadh	LISBANE	528703	645198	c. 2.3km to the NW of nearest T1

No.	SMR No.	Class	Townland	ITM (E)	ITM (N)	Distance (<i>circa</i>)
84	LI019-258- ---	Standing stone	BALLYSTEEN (Shanid By.)	528404	644641	c. 2km to the NW of nearest T1
85	LI019-259- ---	Fulacht fiadh	LISBANE	528532	644388	c. 1.8km to the NW of nearest T1
86	LI019-261- ---	Fulacht fiadh	COOLTOMIN	530812	644106	c. 1.3km to the NE of nearest T1
87	LI019-264- ---	Enclosure	CREEVES (Shanid By.)	530581	645803	c. 2.7km to the NE of nearest T1
88	LI019-270- ---	Enclosure	BALLYNISKY	530008	643205	c. 0.1km to the NE of nearest T1
89	LI019-276- ---	Fulacht fiadh	CARRONS	527428	643821	c. 2.5km to the W of nearest T1
90	LI019-279- ---	Children's burial ground	TUBBRID	529762	645719	c. 2.5km to the N of nearest T1
91	LI019-280- ---	Earthwork	RANAHAN	532361	643312	c. 2km to the E of nearest T6
92	LI020-096- ---	Enclosure	RIDDLESTOWN	533165	642850	c. 2.7km to the E of nearest T6
93	LI020-097- ---	Enclosure	RIDDLESTOWN	533178	642965	c. 2.7km to the E of nearest T6
94	LI020-098- ---	Ringfort – rath	RIDDLESTOWN	533320	643010	c. 2.8km to the E of nearest T6
95	LI028-006- ---	Ringfort – rath	KNOCKBWEEHEEN	526801	642022	c. 2.8km to the W of nearest T3
96	LI028-007- ---	Ringfort – rath	BALLYEGNY	526952	642517	c. 2.6km to the W of nearest T3
97	LI028-009- ---	Mound	BALLYVOGHAN	527246	641510	c. 2.5km to the W of nearest T3
98	LI028-010- ---	Ringfort – rath	BALLYEGNY	527333	642328	c. 2.2km to the W of nearest T3
99	LI028-011- ---	Ringfort – rath	BALLYMAKEERY	527416	642147	c. 2.2km to the W of nearest T3
100	LI028-012- ---	Castle - tower house	BALLYVOGHAN	527494	640707	c. 2.6km to the SW of nearest T3
101	LI028-013- ---	Moated site	LISGORDAN	527653	641366	c. 2.2km to the SW of nearest T3
102	LI028-014- ---	Ringfort – rath	BALLYVOGHAN	527667	640439	c. 2.7km to the SW of nearest T3
103	LI028-015- ---	Ringfort – rath	RATHNAGORE	527815	642477	c. 1.8km to the W of nearest T3
104	LI028-016- ---	Ringfort – rath	LISGORDAN	527756	641257	c. 2.2km to the SW of nearest T3
105	LI028-017- ---	Ringfort – rath	LISGORDAN	527840	641551	c. 1.9km to the SW of nearest T3
106	LI028-018- ---	Enclosure	CAHERMOYLE	527837	640465	c. 2.5km to the SW of nearest T3
107	LI028-019- ---	Ringfort – rath	CAHERMOYLE	527926	640137	c. 2.7km to the SW of nearest T3
108	LI028-020- ---	Castle - tower house	BALLYEGNY BEG	528123	642155	c. 1.5km to the W of nearest T3
109	LI028-021- ---	Ringfort – rath	BALLYEGNY BEG	528316	642276	c. 1.2km to the W of nearest T3
110	LI028-022- ---	Ringfort – rath	CAHERMOYLE	528175	640482	c. 2.3km to the SW of nearest T3

No.	SMR No.	Class	Townland	ITM (E)	ITM (N)	Distance (<i>circa</i>)
111	LI028-023- ---	Enclosure	CAHERMOYLE	528306	640717	c. 2km to the SW of nearest T3
112	LI028-024- ---	Ringfort – rath	BALLYEGNY BEG	528394	641995	c. 1.2km to the W of nearest T3
113	LI028-025- ---	Ringfort – rath	BALLYNEETY (Shanid By.)	528428	642562	c. 1.2km to the W of nearest T3
114	LI028-026- ---	Ringfort – rath	BALLYNEETY (Shanid By.)	528404	642469	c. 1.2km to the W of nearest T3
115	LI028-027- ---	Burial ground	CAHERMOYLE	528456	640599	c. 2.1km to the SW of nearest T3
116	LI028-028- ---	Ringfort – rath	CAHERMOYLE	528395	639769	c. 2.8km to the SW of nearest T3
117	LI028-029- ---	Ringfort – rath	LISGORDAN	528586	641617	c. 1.2km to the SW of nearest T3
118	LI028-030- ---	Castle – unclassified	CAHERMOYLE	528632	640157	c. 2.4km to the SW of nearest T3
119	LI028-031- ---	Ringfort – rath	BALLYEGNY MORE	528728	642277	c. 0.9km to the W of nearest T3
120	LI028-032- ---	Mound	BALLYEGNY BEG	528744	641710	c. 1.1km to the SW of nearest T3
121	LI028-033- ---	Ringfort – rath	BALLYEGNY BEG	528836	642032	c. 0.8km to the SW of nearest T3
122	LI028-034- ---	Ringfort – rath	LISGORDAN	528850	641436	c. 1.2km to the SW of nearest T3
123	LI028-035- ---	Ringfort – rath	BALLYEGNY MORE	529005	642390	c. 0.6km to the W of nearest T3
124	LI028-036- ---	Ringfort – rath	RATHREAGH MORE	529101	640708	c. 1.7km to the S of nearest T3
125	LI028-037- ---	Ritual site - holy well	CAHERMOYLE	529006	640371	c. 2km to the S of nearest T3
126	LI028-038- ---	Ringfort – rath	BALLYEGNY MORE	529315	642284	c. 0.3km to the W of nearest T3
127	LI028-039- ---	Ringfort – rath	BALLYEGNY MORE	529341	642337	c. 0.3km to the W of nearest T3
128	LI028-040- ---	Designed landscape - tree-ring	CAHERMOYLE	529236	640129	c. 2.1km to the S of nearest T4
129	LI028-041- ---	Ringfort – rath	DROMTURK	529360	641902	c. 0.5km to the SW of nearest T3
130	LI028-042- ---	Ringfort – rath	BALLINVULLA	529704	641444	c. 0.8km to the S of nearest T4
131	LI028-043- ---	Ringfort – rath	BALLYEGNY MORE	529836	642226	c. 0.2km to the E of T3 and c.0.2km to the W of T4
132	LI028-044- ---	Ringfort – rath	RATHREAGH BEG	529805	641087	c. 1km to the S of nearest T4
133	LI028-045- ---	Ringfort – rath	RATHREAGH BEG	529807	641227	c. 0.9km to the S of nearest T4
134	LI028-046- ---	Ringfort – rath	RATHREAGH MORE	529820	640471	c. 1.7km to the S of nearest T4
135	LI028-047- ---	Ringfort – rath	BALLINVULLA	529948	641586	c. 0.6km to the S of nearest T4
136	LI028-048- ---	Ringfort – rath	RATHREAGH MORE	530286	640529	c. 1.6km to the S of nearest T4

No.	SMR No.	Class	Townland	ITM (E)	ITM (N)	Distance (<i>circa</i>)
137	LI028-049- ---	Ringfort – rath	COOLCAPPAGH	530432	641877	c. 0.4km to the SE of nearest T4
138	LI028-050- ---	Ringfort – rath	RATHREAGH BEG	530437	641223	c. 1km to the S of nearest T4
139	LI028-051- ---	Ringfort – rath	BALLYKENRY	530474	641517	c. 0.7km to the SE of nearest T4
140	LI028-052- ---	Ringfort - cashel	COOLCAPPAGH	530550	642434	c. 0.3km to the E of nearest T5
141	LI028-053- ---	Ringfort – rath	RATHREAGH MORE	530509	640719	c. 1.5km to the SE of nearest T4
142	LI028-054- ---	Ringfort – rath	RATHREAGH BEG	530545	641051	c. 1.2km to the SE of nearest T4
143	LI028-055- ---	Ringfort – rath	RATHREAGH BEG	530596	641128	c. 1.2km to the SE of nearest T4
144	LI028-056- ---	Ringfort – rath	BALLYKENRY	530593	641321	c. 1km to the SE of nearest T4
145	LI028-057- ---	Ringfort – rath	BALLYKENRY	530631	641248	c. 1.1km to the SE of nearest T4
146	LI028-058- ---	Ringfort – rath	COOLYBROWN	530730	640149	c. 2.1km to the SE of nearest T4
147	LI028-059- ---	Ringfort – rath	BALLYKENRY	531117	641537	c. 1.2km to the SE of nearest T4
148	LI028-060- ---	Ringfort – rath	LISNACULLIA (Connello Lower By.)	531393	642350	c. 1.1km to the SE of nearest T6
149	LI028-061- ---	Ringfort – rath	BALLYKENRY	531508	641584	c. 1.5km to the SE of nearest T4
150	LI028-062- ---	Ringfort – rath	BALLYKENRY	531547	641649	c. 1.5km to the SE of nearest T4
151	LI028-063- ---	Ringfort – rath	CLONAGH	531717	640140	c. 2.5km to the SE of nearest T4
152	LI028-064- ---	Ringfort – rath	DEELISH (Connello Lower By.)	531866	641646	c. 1.8km to the SE of nearest T5
153	LI028-065- ---	Castle - tower house	LISNACULLIA (Connello Lower By.)	532072	642377	c. 1.7km to the SE of nearest T6
154	LI028-065001-	Bawn	LISNACULLIA (Connello Lower By.)	532072	642377	c. 1.7km to the SE of nearest T6
155	LI028-066001-	Ecclesiastical enclosure	CLONAGH	532005	641051	c. 2.2km to the SE of nearest T4
156	LI028-066002-	Church	CLONAGH	531998	641060	c. 2.2km to the SE of nearest T4
157	LI028-066003-	Graveyard	CLONAGH	532005	641051	c. 2.2km to the SE of nearest T4
158	LI028-066004-	Road - hollow-way	CLONAGH	531816	641045	c. 2km to the SE of nearest T4
159	LI028-067- ---	Ritual site - holy well	CLONAGH	531750	640715	c. 2.1km to the SE of nearest T4
160	LI028-068- ---	Ringfort – rath	RIDDLESTOWN	532401	642001	c. 2.1km to the E of nearest T5
161	LI028-069- ---	Ringfort – rath	CLONAGH	532417	640313	c. 2.9km to the SE of nearest T4
162	LI028-070- ---	Ringfort – rath	BALLINLYNY	532557	641293	c. 2.6km to the SE of nearest T4
163	LI028-071- ---	Ringfort – rath	RIDDLESTOWN	532846	642292	c. 2.4km to the SE of nearest T6

No.	SMR No.	Class	Townland	ITM (E)	ITM (N)	Distance (<i>circa</i>)
164	LI028-072- ---	Ringfort – rath	RIDDLESTOWN	532893	642025	c. 2.5km to the SE of nearest T6
165	LI028-073- ---	Enclosure	RIDDLESTOWN	532997	642450	c. 2.5km to the E of nearest T6
166	LI028-074- ---	Ringfort – rath	BALLINLYNY	532982	641162	c. 2.9km to the SE of nearest T4
167	LI028-075- ---	Ringfort – rath	RIDDLESTOWN	533107	642145	c. 2.7km to the SE of nearest T6
168	LI028-104- ---	Ringfort – rath	GLENVILLE	527988	639850	c. 3km to the SW of nearest T3
169	LI028-105- ---	Redundant record	GLENVILLE	528085	639818	N/A
170	LI028-106- ---	Designed landscape - tree-ring	GLENVILLE	528152	639722	c. 3km to the SW of nearest T3
171	LI028-108- ---	Ringfort – rath	SKEHANAGH (Connello Lower By.)	530008	640188	c. 1.9km to the S of nearest T4
172	LI028-111- ---	Ringfort – rath	SKEHANAGH (Connello Lower By.)	530720	639447	c. 2.7km to the S of nearest T4
173	LI028-112- ---	Ringfort – rath	KILSCANNELL	530930	639375	c. 2.9km to the S of nearest T4
174	LI028-113- ---	Ringfort – rath	KILSCANNELL	531263	639596	c. 2.8km to the SE of nearest T4
175	LI028-114001-	Church	KILSCANNELL	531738	639706	c. 2.9km to the SE of nearest T4
176	LI028-114002-	Graveyard	KILSCANNELL	531729	639700	c. 2.9km to the SE of nearest T4
177	LI028-154- ---	Ringfort – rath	BALLYVOGHAN	527721	640660	c. 2.5km to the SW of nearest T3
178	LI028-159- ---	Ringfort – rath	BALLYKENRY	530940	641699	c. 1km to the SE of nearest T4
179	LI028-160- ---	Ringfort – rath	DROMTURK	529398	641496	c. 0.8km to the S of nearest T3
180	LI028-163- ---	Redundant record	KILSCANNELL	531663	639798	N/A
181	LI028-176- ---	Church	RATHREAGH MORE	530435	640629	c. 1.5km to the S of nearest T4
182	LI028-179- ---	Standing stone	LISNACULLIA (Connello Lower By.)	531555	642327	c. 1.2km to the SE of nearest T6
183	LI028-181- ---	Standing stone	LISGORDAN	527666	641407	c. 2.1km to the SW of nearest T3
184	LI028-182- ---	Ringfort – rath	BALLYNISKY	530234	642283	c. 0.2km to the NE of T4 and c. 0.2km to the S of T5
185	LI028-183- ---	Ringfort – rath	RATHREAGH BEG	530056	640983	c. 1.1km to the S of nearest T4
186	LI028-184- ---	Enclosure	SKEHANAGH (Connello Lower By.)	529993	639431	c. 2.7km to the S of nearest T4
187	LI028-185- ---	Enclosure	BALLYMAKEERY	527316	642013	c. 2.3km to the W of nearest T3
188	LI028-186- ---	Ringfort – rath	SKEHANAGH (Connello Lower By.)	530899	639870	c. 2.4km to the SE of nearest T4
189	LI028-192- ---	Enclosure	LISNACULLIA (Connello Lower By.)	532151	642333	c. 2.8km to the SE of nearest T6

No.	SMR No.	Class	Townland	ITM (E)	ITM (N)	Distance (circa)
190	LI028-193- ---	Enclosure	RATHREAGH BEG	529868	641133	c. 1km to the S of nearest T4
191	LI028-195- ---	Earthwork	CLONAGH	531558	641256	c. 1.7km to the SE of nearest T4
192	LI029-001- ---	Ringfort – rath	RIDDLESTOWN	533122	641335	c. 3km to the E of nearest T4
193	LI029-002- ---	Ringfort – rath	RIDDLESTOWN	533275	642456	c. 2.8km to the E of nearest T6
194	LI029-004- ---	Ringfort – rath	RIDDLESTOWN	533442	642273	c. 3km to the E of nearest T6

Mesolithic Period (8500-4000 BC)

Up to the recent past the earliest evidence of human occupation in Ireland has been at Mount Sandel in Co. Derry which has been radiocarbon dated to the Mesolithic or Middle Stone Age period c.8,000 BC (Woodman, Anderson & Finlay 1999, 131-151). However, recent research by Dr. Marion Dowd in collaboration with Dr. Ruth Carden have undertaken analysis of cut marks on the patella or kneecap of a bear in the National Museum of Ireland originally found in Alice and Gwendoline Cave in 1903, located c. 30 km to the N of the proposed WF, that has established that the marks were made by humans who were present in Ireland 2,500 years earlier than had previously been thought, i.e. at the end of the Palaeolithic or Old Stone age period some 12,500 years ago. *'The adult bear bone was one of thousands of bones originally discovered in Alice and Gwendoline Cave, Co. Clare in 1903 by a team of early scientists. They published a report on their investigations and noted that the bear bone had knife marks'* (Dowd & Carden 2016). Palaeolithic and Mesolithic people were hunter-gatherer-fisher transient nomadic groups whose imprint on the landscape was ephemeral at best. Often the only trace of Mesolithic activity are scatters of stone tools and the by-products of their manufacture, debitage. Occasionally, shell middens are found that date to the Mesolithic period.

There are no recorded Mesolithic sites recorded within the 3.0km radius study area.

Neolithic Period (4000-2500 BC)

The Neolithic period is marked by the introduction of agriculture to Ireland which was accompanied by more permanent sedentary settlement with evidence for rectangular timber houses being constructed. The Neolithic period is also associated with the tradition of megalithic tomb construction. Megalithic tombs are the most common recorded monument of the Neolithic period in Ireland.

There are no recorded Neolithic recorded monuments / sites within the 3.0km radius study area.

Bronze Age (2400–500 BC)

The Irish Bronze Age (2400–500 BC) is associated with the arrival of metal-working techniques to the island and this technological advance resulted in the introduction of a new artefactual assemblage into the Irish archaeological record. This period was also associated with the construction of several new monument types including standing stones, stone rows, stone circles, cairns and *fulachta fiadh* also known as burnt mounds.

Two types of Bronze Age monuments were recorded within the 3.0km radius study area, comprising of three standing stones and five *fulachta fiadh*, representing c.4% of the total number of recorded monuments in the study area.

Standing stones are sometimes difficult to date; however, it is generally accepted that they belong to the Bronze Age and / or Iron Age. They appear to have served a variety of functions. Many were used as burial markers to designate the location of a cist grave, which was a simple slab-lined grave containing, cremated remains or single flexed articulated burials, usually accompanied by grave-goods. Certainly, standing stones appear to have been largely of ritual significance. Other standing stones are believed to have served as territorial markers to denote the extent of tribal or familial land boundaries. The NMS database define them as *'A stone which has been deliberately set upright in the ground, usually orientated on a north-east-south-west axis, although other orientations do occur, and varying in height from 0.5m up to 6m. They functioned as prehistoric burial markers, commemorative monuments, indicators of routeways*

or boundaries and date from the Bronze and Iron Ages (c.2400 BC - AD 500), with some associated with early medieval ecclesiastical and burial contexts' (www.archaeology.ie). The closest standing stone to BWF is LI028-179, situated c.1.2km to the SE of Turbine 6 in the townland of Lisnacullia.

Fulachta fiadh (burnt mounds) are the most prolific Bronze Age monument type present in the Irish landscape and date, by and large, to the Middle Bronze Age (1600-1200 BC). *Fulachta fiadh* have often been seen as reflecting temporary hunting camps where meals were expediently prepared in prehistoric times. They are usually recognized by the presence of mounds of heat shattered stone and charcoal enriched soil. These burnt mounds are usually associated with a large trough, which was used to boil water. Apart from the traditionally suggested activities of cooking, more recent excavations have revealed possible connections with other types of activity include brewing, tanning (Waddell, 2022), bathing and partaking in saunas (Eogan and Shee Twohig, 2012). *Fulachta fiadh* require a water source to fill the trough and are usually located in boggy, marshy land or beside a river or stream. The nearest *fulacht fiadh* (LI019-135) is situated in the townland of Kilbradran c.1.1km to the NW of the nearest turbine, Turbine 1 and c.450m NW of the proposed substation site. The *fulacht* is manifest as a large circular mound (H 1.1m; 23.2m N-S; 24.9m E-W) of burnt material clearly noticeable on aerial images as well as depicted on OS historic maps (www.archaeology.ie).

Iron Age (500 BC-AD 400)

As elsewhere in Munster, monumental evidence dating to the Iron Age in Co. Limerick is not plentiful. There are no definitive recorded sites of this date within the 3.0km study area. However, as a caveat to that, the hilltop enclosure at Kilbradran (LI019-127) has recently been listed in the Atlas of Hillforts of Britain and Ireland (Lock & Ralston 2022; <https://hillforts.arch.ox.ac.uk>).

Early Medieval Period (AD 400-1169)

The Early Medieval period is more or less coeval with the arrival of Christianity and continued up to the arrival of the Anglo-Normans in the late 12th century. Settlement in the Early Medieval period (often referred to as the Early Christian or Early Historic periods) is best exemplified monumentally in a secular settlement context by ringforts. Ringforts are subdivided into those of earthen construction known as a rath or lios or those of dry-stone construction that are referred to as a *caiseal*, *caher*, *cathair*, and also *dún*. Ringforts are also referred to as raths derived from the Old Irish word *ráth*, meaning 'earthen rampart' while others are known as *lios* or *liss* which refers to the ringfort's internal space. The morphology of ringforts generally comprises of an earthen enclosing bank that was constructed by the casting up of material by the excavation of an outer circular or sub-circular ditch otherwise known as a fosse. In more prestigious examples there can be two (bi-vallate) or three (tri-vallate) enclosing banks and ditches. According to Stout (1997), the majority of ringforts were constructed over a three-hundred-year period between the start of the 7th century and end of the 9th century AD. They represent enclosed farmsteads probably occupied by extended family units and are likely to have been largely self-sufficient. Domestic dwellings, outhouses, animal pens, food processing structures, craft areas, hearths and souterrains would have been located within the limits of the ringfort while other activity including corn drying kilns and iron working / smelting activity was often undertaken nearby outside for fire safety considerations. Evidence of corn grinding, iron working, glass manufacture, spinning and weaving and food preparation has been recorded in association with domestic and animal timber dwellings and structures. Farming included a mixed economy involving cereal growing and animal husbandry, in particular, dairying.

In the Early Medieval Period (EMP) the Ballynisky Wind Farm area and the wider encompassing environs were attractive for these small, dispersed farming units. There are 139 ringforts within 3.0km radius study zone which makes them the most common monument type in the study area. The 12 ringforts within the EIAR study area are fully described above (**Section 13.3.1.2**). West Limerick is one of the densest areas in Ireland for ringforts, the barony of Connello Lower has a density of 1.98 ringforts per sq.km while the region in general has an average of 1.52 per sq. km (Stout 1997). In that context the study area of BWF straddles parts of Shanid and Lower Connello baronies.

Geographically this area of west Limerick is fertile limestone that forms the western limits of the Golden Vale that is pressed against the N and NW limits of the Mullaghareirk Mts. as far north as Carrigerry, with concentrations also

extending further NW as far as Tarbert. The easternmost limits of the ringfort concentration are demarcated by the Mague River beyond which is east Limerick.

Up to the 10th century the majority of Co. Limerick was dominated by the indigenous Uí Fidgente who were themselves a sept or tuath of the powerful Eóghanacht Caisil (Begley 1906; O'Connor 1987). Their royal residence was at Bruree, more anciently known as Dún Eochair Mhaighe (Begley 1906). The Uí Fidgente territory was divided into two separate kingdoms, the Uí Chonaill and Uí Cairbre with sovereignty alternating between them (Dunne 2015). The proposed Ballynisky Wind Farm is within the ancient kingdom of the Uí Chonaill. The baronies of Upper and Lower Connello are derived from them.

In AD 834 a fleet of Vikings entered the Shannon and raided the territory of the Uí Chonaill. In response a force led by Donnchadh leader of the Uí Chonaill and Uí Fidgente defeated the Vikings at Shanid near Shanagolden. This defeat did not deter the Vikings and subsequent fleets arrived every ten years or so up to AD876 after which there was a hiatus until AD916. After AD937 a growing permanency was being established by the Vikings who were becoming more intrinsically involved in native Irish political activity in the area now firmly established on Inis Sibthón, at Limerick. An allegiance between the Uí Fidgente and the Vikings was consolidated by the marriage of Ímar, Norse king of Waterford, to the daughter of Donnubán leader of the Uí Chairbre (ibid 12).

During the height of the Viking era, sometime between AD950 and AD977, Magnus son of Aralt (Harold) settled on Scatterry Island and it became a secondary settlement of the Danes of Limerick (Spellissy, 1998). In 977 Brian Borimhe (Boru) raided the island slaying all the inhabitants (600-800) which included a mixed Christian population of ecclesiastics and Vikings including the Viking King Ímar, or Maghnus and his two sons (ibid).

The once powerful ruling dynasty, the Eóghanacht Caisil, were in decline by the late tenth century following the death of their king, Ceallachán Caisil, in 954. The kingdom of the Uí Fidgente was also under stress and had also evolved into a number of weaker sub-kingdoms.

Into this power vacuum emerged the Dál Cais dynasty who by this time controlled both sides of the Shannon and were the inveterate enemies of the Uí Fidgente. Mathgamain (Mahon) became their first King of Munster but it was his brother Brian Borimhe who was responsible for their ultimate expansion and who was later to become High King of Ireland (ibid). The Dál gCais ultimately defeated the Uí Fidgente along with the Vikings at Shanid and other locations during the 9th century and later entirely took over the area in the 10th century. Thus, fragmenting the kingdom of the Uí Fidgente into several smaller sub-servient septs including the once powerful Uí Donnubháin forcing them into Kerry (Donovans) and the Uí Chairbre into West Cork - Carbery today. So as a regional polity this area was always looked on as worth having as the land is so good. This was always the frontier swordland particularly between the McCarthys to the S & SW and no doubt the O'Connors of North Kerry.

In addition, a total of 18 enclosures are recorded within 3.0km study zone including one hilltop enclosure. The term 'Enclosure' is used to denote monuments whose visible surviving relict remains cannot with confidence be assigned to any specific dating period. Some of these monuments, however, may represent denuded / levelled ringforts. The classification of Hilltop enclosure is a term used for an area less than 2 hectare in size enclosed by a univallate earthen bank or wall, sometimes with an external fosse and located in upland terrain. Of the 18 recorded enclosures in the study area there are 3 situated within the EIAR study area of BWF and are described above (**Section 13.3.1.2**).

Apart from early medieval secular settlement sites, mainly represented by ringforts, there are other ecclesiastic monuments in the area, which are associated with the arrival of Christianity. Monasticism was the principal characteristic of the Early Irish Christian Church whose origins lay in the Eastern Mediterranean inspired by Saints like Paul and Anthony who had retreated into the deserts of Egypt to live as hermit monks. Through time this monastic concept migrated into Ireland most likely through Gaul where its arrival had a profound impact on the existing spirituality of the Irish and witnessed the development of the 'Celtic Church' - a term that fell out of favour with more modern scholars but appears to be winning back somewhat today. The townland name of Dysert, near Foynes is a memory of this.

There is only one ecclesiastical enclosure (LI028-066001) within the 3.0km study zone, situated in the townland of Clonagh, c.2.2km to the SE of Turbine 4. This ecclesiastic enclosure consists of the medieval ruins of Clonagh Church (LI028-066002) and graveyard. The site is linked to a nearby holy well dedicated to St. Ciarán of Clonmacnoise (LI028-067, www.archaeology.ie). Early Christian sites often contain or are associated with holy wells. The origins of many holy wells can be pushed back to the prehistoric period associated with pre-Christian elder faiths. Two holy wells are situated within the 3km radius study zone.

High Medieval period (AD 1169-1600)

The high medieval period began with the arrival of the Anglo-Normans in Ireland in AD 1169 when Diarmait MacMurchadha, deposed King of Leinster, sought the support of mercenaries to regain his kingdom. Two years later Richard de Clare (Strongbow) inherited the Kingdom of Leinster through marriage and by the end of the 12th century the Normans had succeeded in conquering much of the country (Stout 1997).

One of the most visible monuments from this period are masonry castles, the majority of which were built by the Normans during the 12th-14th centuries. Many of these castles were large enough to house lords and their families, and sometimes large enough to hold small armies (professional soldiers) hired to defend them.

The late 14th century saw the recovery of much of the territory taken by the Normans and is represented by the construction of tower-houses built by both the Anglo-Normans and Gaelic-Irish during the period c.1400-1650. Tower Houses were a dramatic reduction in scale when compared to the previous Norman castles. Their location and presence though were an indication of status as well as for defensive purposes.

Four tower houses are listed in the National Monuments Service database within the 3km study zone. The closest is Castle Egney (LI028-020), situated in Ballyegny Beg, c.1.5km to the W of nearest turbine T3. This 15th century tower house was described in 1837 by Lewis as *'the remains of Castle Egney, consisting only of one slender square tower'* as it stands at present. The original tower house stood four or five storeys high but is now reduced to a maximum height of c.8m (www.archaeology.ie). Ballyegny Beg was traditionally held by the Norman family of De Wale (later Vale or Wall).

A second extant c.14m high tower house is Lisnacullia Castle (LI028-065) and bawn (LI028-065001) located in the townland of Lisnacullia, c.1.7km to the SE of turbine T6. The castle dates from c.1460-80 and is said to have been built by the MacSheehies. It was forfeited to Thomas Caune after the Desmond rebellion of 1579, held by Donogh O'Brien in 1620, and by Sir Edward Fitzgerald in 1655. Lisnacullia Castle and bawn was described by Salter (2004) as follows: *'It has a main block measuring 13.9m by 9.3m with walls 1.5m thick above a battered base set on a cliff edge. The fireplaces in the west wall of the lowest two levels under a vault are insertions. Above there was just one lofty room. This too had a fireplace in the west wall but it was destroyed in the 1960s when the wall above collapsed. The wing clasping the SE corner contains a newel-stair reached from the main block by an awkward zig-zag passage, although there is no certain evidence of the wing being an addition. Two upper levels are reached from the main block by a second stair carried on a squinch arch over the northern re-entrant angle. There are fragments of a polygonal bawn measuring about 30m across with an outbuilding and square tower at the corner furthest from the main tower'*.

The third tower house (LI028-012) is located in the townland of Ballyvaghan c.2.6km to the SW of turbine T3. The description in the NMS database records: *'A wing 3.8m wide projecting 2.4m at the east end of the south wall of this tower measuring 11.1m by 11.3m contains at second storey a latrine reached off the much damaged straight flights of stairs rising in the south and east walls. Nothing now survives above the vault over the second storey, which has a mural room in the SW corner, originally with a murder-hole covering the entrance (now blocked) below it'* (Salter 2004).

The fourth castle within the 3km radius zone is Cahermoyle (*Cathair Maothail*) (LI028-030) situated c.2.4km to the SW of turbine T3. This unclassified castle probably dates to the 14th century and is not depicted on any OSI historic mapping. Very little is recorded about the castle. Furthermore, the lack of any description of its masonry fabric in the NMS database suggests that nothing coherent of the castle survives into present times.

The High Medieval period also witnessed a major change in church building in Ireland, manifested also by the arrival of the major continental orders, patronized by the Normans. After the Synod of Rathbreasail in AD1111 the earlier Irish Church changed fundamentally, transitioning from the earlier monastic tradition to a diocesan, parish system. This heralded the construction of regional parish churches built on the model of those in England and generally consisting of simply nave and choir (chancel). Architecturally, the Cistercian influence changed Irish church construction from using the rounded Romanesque arch to the pointed or Gothic arch, which then continued to dominate church architecture in the country until the Reformation.

The nearest church (LI019-131002) is located in the townland of Kilbradran c.1.2km to the NW of turbine T1 and 0.5km to the NW of the proposed substation. The church in Kilbradran was built around 1250 and was under the control of the Augustinians of Athassel Abbey in Co Tipperary. Kilbradran was described in 1840 as: *'The old church of this parish originally consisted of a nave and choir. Of the latter only a small portion of the south wall remains. The nave, of which the walls are perfect, is thirty five and a half feet long by seventeen feet eight inches. The choir arch is entirely disfigured. On the south side wall, at the distance of two feet [0.6m] from the middle (now the east) gable, is a square window formed on both sides of coarse stones; it is five feet [1.5m] high by four feet [1.2m] on the inside; two feet eleven inches [0.9m] in height, five and a half inches [1.6m] in width at the top and nine inches [0.22m] at the bottom of the outside. On this wall at the distance of nine feet [2.7m] from the west gable was the doorway, which is at present much disfigured. The west gable and north wall are featureless. The walls of this church are about fourteen feet high [4.25m], two and a half feet [0.8m] in thickness and built of large stones, not quarried, irregularly laid with lime and sand mortar.'* (www.archaeology.ie). Today most of the east wall has collapsed, however the remains of the church are still in good condition highly covered with ivy. The well-maintained graveyard (LI019-131002) at Kilbradran is situated at the roadside.

The site of a second church (LI028-176) was located in the townland of Rathreagh More c.1.5km to the S of turbine T4. There is no visible trace of the church at this location.

A third Medieval church (LI028-066002) is located in the townland of Clonagh c.2.2km to the SE of turbine T4. According to T.J. Westrop the church was built around 1200 AD. Today it consists of the *'poorly preserved remains of a nave and chancel church with 19th century Madigan family mausoleum built onto E gable. Church now covered in ivy which makes detailed examination of the medieval fabric impossible'* (www.archaeology.ie). The Church was erected on an Early Christian ecclesiastical enclosure (LI028-066001 & see above).

The site of the fourth medieval church (LI028-114001-) is located at Kilscannell c. 2.9km to the SE of turbine T4. A church of Ireland church was built on the earlier site. This early 19th century edifice is a *'Freestanding Board of First Fruits Church of Ireland church, built in 1822, comprising three-stage square-profile tower, flanked to north and south by single-storey single-bay porches, adjoining west elevation of gabled three-bay double-height nave. Roof gone, cut limestone eaves course and finials remaining'* (www.buildingsofireland.ie).

Other secular monument types dating to the High Medieval period are moated sites. These monuments are defined by a square, rectangular or occasionally circular area, sometimes raised above the ground. As their name suggests, they are enclosed by a wide, often water-filled, fosse, with or without an outer bank and with a wide causewayed entrance. Moated sites generally date to the late 13th/early 14th centuries and were primarily fortified residences/farmsteads of Anglo-Norman settlers though they were also built by Gaelic lords (www.archaeology.ie). There is one moated site (LI028-013) within the 3km radius study zone in the townland of Lisgordan c.2.2km to the SW of turbine T3.

Post Medieval Period (AD 1600-1900)

There is one recorded monument dated to this period within the 3km radius zone. The monument comprises of a children's burial ground (CBG), LI019-279 located in townland of Tubbrid c.2.5km to the N of turbine T1. CBG's are more traditionally referred to as *killeens*, *ceallúraghs* or *ceallúnaigh*. The practice of burying children and infants in separate set-aside places appears to have occurred in Ireland since at least the late medieval period or possibly earlier. It reflects the refusal by church authorities to allow the burial of unbaptised children in consecrated ground. Some studies have

shown that the burial of infants was often carried out shortly after death, at night, usually by male members of the family. In many instances burials are marked by low uninscribed upright slabs or quartz stones.

Excavations Ireland database

The proposed Ballynisky WF will be situated within three townlands: Graigoor, Ballynisky and Ballyegny More. Examination of the Excavations Bulletin (1970 – 2023) revealed that no licensed archaeological works took place within any of three townlands (www.excavations.ie).

Topographical files

Information on artefact finds from the receiving environment in County Limerick has been recorded in the Topographic Files of the National Museum (NMI) of Ireland since the late 18th century. A review of the NMI database revealed that there were no archaeological artefacts found in any of three townlands of Graigoor, Ballynisky or Ballyegny More (www.heritagemaps.ie).

National Inventory of Architectural Heritage (NIAH)

The National Inventory of Architectural Heritage (NIAH) was established under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999. It is a government-based organisation tasked with making a nationwide record of locally, regionally, nationally and internationally significant structures dating to post-1700 AD, which in turn provides county councils with a guide as to what structures to list within their Record of Protected Structures.

There are no Recorded Protected Structures or NIAH structures within the limits of the red line boundary of the proposed BWF site. There are however fifteen recorded NIAH structures within the 3km radius from the nearest proposed turbines, of which eight are listed as Recorded Protected Structures (**Figure 13-4, Table 13-3**). This c.3km radius study zone was established on professional experience as well as analysis of the landscape and site inspection supported by drone survey.

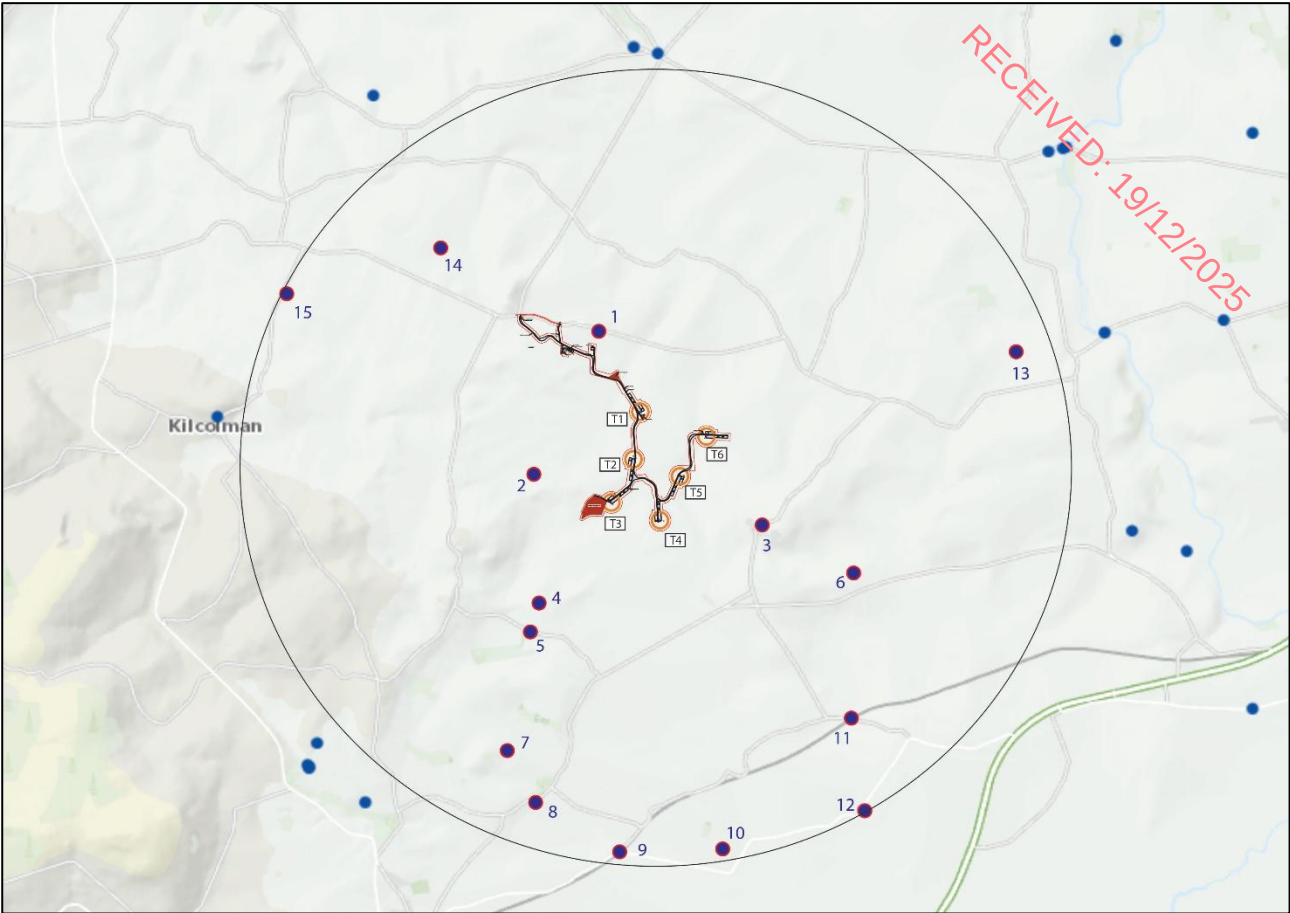


Figure 13-4: NIAH Structures and RPS within 3km Radius from the BWF

Table 13-3: NIAH Structures including RPS in 3km Radius

N o	NIAH Reg. No.	Structure	Townland	Date	Rating	ITM (N)	ITM (E)	RPS	Distance (circa)
1	21901914	House (Mangan's)	GRAIGOOR	1790 - 1810	Regional	529554	643765	448	0.7 km to the NW of the nearest T1
2	21902809	House (Ballyegny House)	BALLYEGNY MORE	1860 - 1880	Regional	529028	642548	87	0.6 km to the W of the nearest T3
3	21902816	Post Box	BALLYNAMUDD AGH	1920 - 1940	Regional	530906	642127	NO	0.8 km to the E of the nearest T5
4	21902810	Country House (Newcastle West Golf Club House)	RATHGOONAN	1870 - 1875	Regional	529074	641459	654	1 km to the SW of the nearest T3

N o	NIAH Reg. No.	Structure	Townland	Date	Rating	ITM (N)	ITM (E)	RPS	Distance (circa)
5	2190281 1	Water Pump	RATHGOONAN	1890 - 1910	Regional	529001	641209	NO	1.3 km to the SW of the nearest T3
6	2190281 7	House (Shanahan's)	DEELISH	1800 - 1830	Regional	531654	641730	313	1.6 km to the SE of the nearest T5
7	2190281 2	Country House (Cahermoyle House)	CAHERMOYLE	1870 - 1875	Regional	528813	640222	204	2.4 km to the SW of the nearest T4
8	2190281 3	House (Cathair Moathail)	CAHERMOYLE	1820 - 1840	Regional	529038	639759	205	2.6 km to the SW of the nearest T4
9	2190281 4	Bridge	SKEHANAGH	1860 - 1880	Regional	529719	639362	NO	2.8 km to the S of the nearest T4
10	2190282 1	Country House	SKEHANAGH	1780 - 1800	Regional	530572	639362	NO	2.8 km to the S of the nearest T4
11	2190281 8	Bridge	CLONAGH	1860 - 1880	Regional	531631	640487	NO	2.3 km to the SE of the nearest T4
12	2190282 0	Church/chapel	KILSCANNELL	1820 - 1830	Regional	531743	639719	510	3 km to the SE of the nearest T4
13	2190191 9	Country House (Riddlestown Park)	RIDDLESTOWN	1725 - 1735	Regional	532992	643590	655	2.6km to the E of the nearest T6
14	2190190 9	Country House	BALLYSTEEN	1780 - 1800	Regional	528263	644470	NO	2km to the NW of the nearest T1
15	2190190 5	Presbytery/paroc hial/ curate's house	CARRONS	1850 - 1870	Regional	526986	644086	NO	2km to the NW of the nearest T1

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Archaeological Landscapes

Examination of the Limerick Development Plan (2022-2028) revealed that the proposed BWF is not situated within a designated archaeological landscape.

Aerial Photography

A suite of aerial imagery was examined including ortho imagery available from the Ordnance Survey (www.osi.ie) which includes B&W imagery from 1995 and colour imagery from 2000 and 2005. Higher resolution aerial imagery from the OS via the NMS portal (www.archaeology.ie) was also examined. Sequential aerial imagery on Google Earth (taken between 2009 and 2021) and Bing Maps (2018) was also examined.

Furthermore, targeted, low-flown UAV imagery of the proposed BWF was also undertaken in tandem with archaeological field inspections in December 2021. In that context a new potential enclosure site, (possible previous ringfort) was identified during the UAV survey. Further examination of aerial imagery available online confirmed this discovery. The partially levelled enclosure is truncated by a field boundary and consequently is only visible as a semi-circular enclosure with a prominent bank. A full description of the discovery is given below.

13.3.2 Cartographic Research

Down Survey (1656-1658)

In the mid-17th century Ireland was in ruins, over 20% of the population was dead after twelve terrible years of war starting in 1641 at the outbreak of the Catholic Confederation Wars and ultimately resulting in victory for the English armies under Oliver Cromwell in 1652. Cromwell immediately set about an immense project of social engineering underpinned by a massive transfer of landownership from the native Catholics to English Protestants. For this to happen the land had to be accurately mapped and surveyed and this enormous undertaking was given to Wm Petty who was surgeon-general in the English army. This was the largest land survey of its kind anywhere in the world at the time and was undertaken between 1656-1658 and was known as the Down Survey. The survey to measure all the forfeited land was necessary in order to facilitate its re-distribution to the ownership of the English Protestant grantees comprising merchant adventurers and also as payment to English soldiers (www.downsurvey.tcd.ie). For this to happen an act known as the Act of Settlement of Ireland was passed on the 12th August 1652 that divided the defeated Catholic Royalists into eight different classes. The leaders of the first six classes not only forfeited their lands but were also sentenced to death. The seventh class represented swordsmen under the rank of gentlemen who forfeited two-thirds of their land while the eighth class were those who remained neutral and if Catholic lost one third and if Protestant lost one twentieth. The forfeiting landowners were commanded to appear at Loughrea immediately after Christmas 1653 and to bring with them their Certificates of Transplantation issued by the Cromwellians.

The Down Survey maps for the two Parishes within the proposed BWF was examined (**Table 13-4, Figure 13-5**). No post medieval features were noted for the three townlands.

Table 13-4: The BWF Townlands in Down Survey

Townland	Down Survey Name	1641 Owner(s):	1670 Owner(s):	Parish	Profitable Land	Unprofitable Land	Forfeited
Ballynisky	Ballynesky	Richard Stephenstone (Protestant)	Sir Thomas Southwell (Protestant)	Cloyneagh	104 plantation acres	NA	104 plantation acres
Ballyegny More	Ballyegny	John Hurly Knocklong (Protestant)	John Bourke (Catholic), John Hurly (Protestant)	Cloyneagh	204 plantation acres	NA	204 plantation acres
Graigoor	Gragare & Clonelgatt	James Rice (Protestant)	Edward Cosgrave (Protestant)	Kilbradran	92 plantation acres	3 plantation acres	92 plantation acres

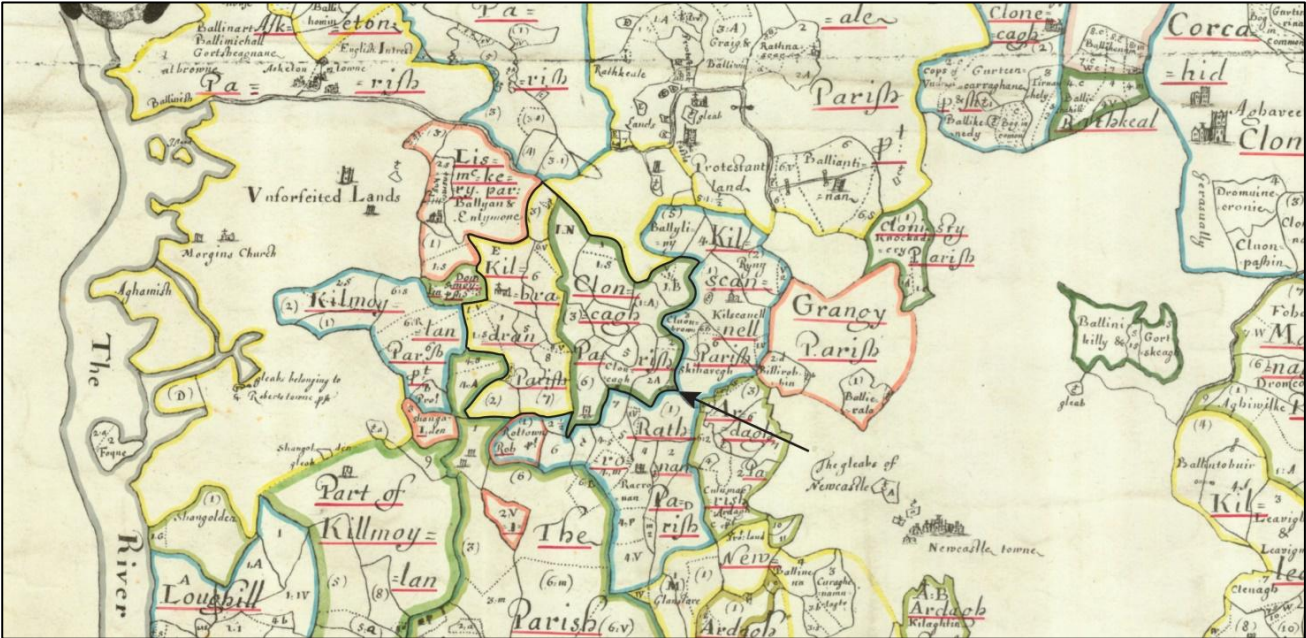


Figure 13-5: Parishes of Cloyneagh and Kilbradran. Extract from Down Survey Maps

Wider Cultural Heritage Sites

Cultural heritage assets can incorporate both archaeological and built heritage remains which are not subject to statutory protection, or which have not been previously recorded as heritage assets in any known datasets. To identify potential cultural heritage sites within the proposed BWF, the historic Ordnance Survey maps and available aerial photographs were examined following which field inspections were undertaken.

A characteristic of the post-medieval landscape are small vernacular, generally rectangular structures that in the majority represent domestic dwellings or farm buildings. ‘Vernacular’ is a term used to describe traditional buildings constructed using locally available materials and according to local styles. Vernacular structures were usually built of local rubble stonework using lime mortar or more rarely of clay. Depending on the region and county, vernacular buildings were also constructed with red brick, limestone, sandstone or combination of those two together. Examples of other structures that may fall into this category include shops, outbuildings, mills, limekilns, malt-kilns, wells, farmsteads, forges, gates and gate piers etc.

Examination of the pre-famine 1st Edition OS 6" map of 1840-42 revealed five pre-famine structures (Vernacular Structures 1-6) in close proximity to the proposed turbines and internal grid connection (**Figure 13-6**).

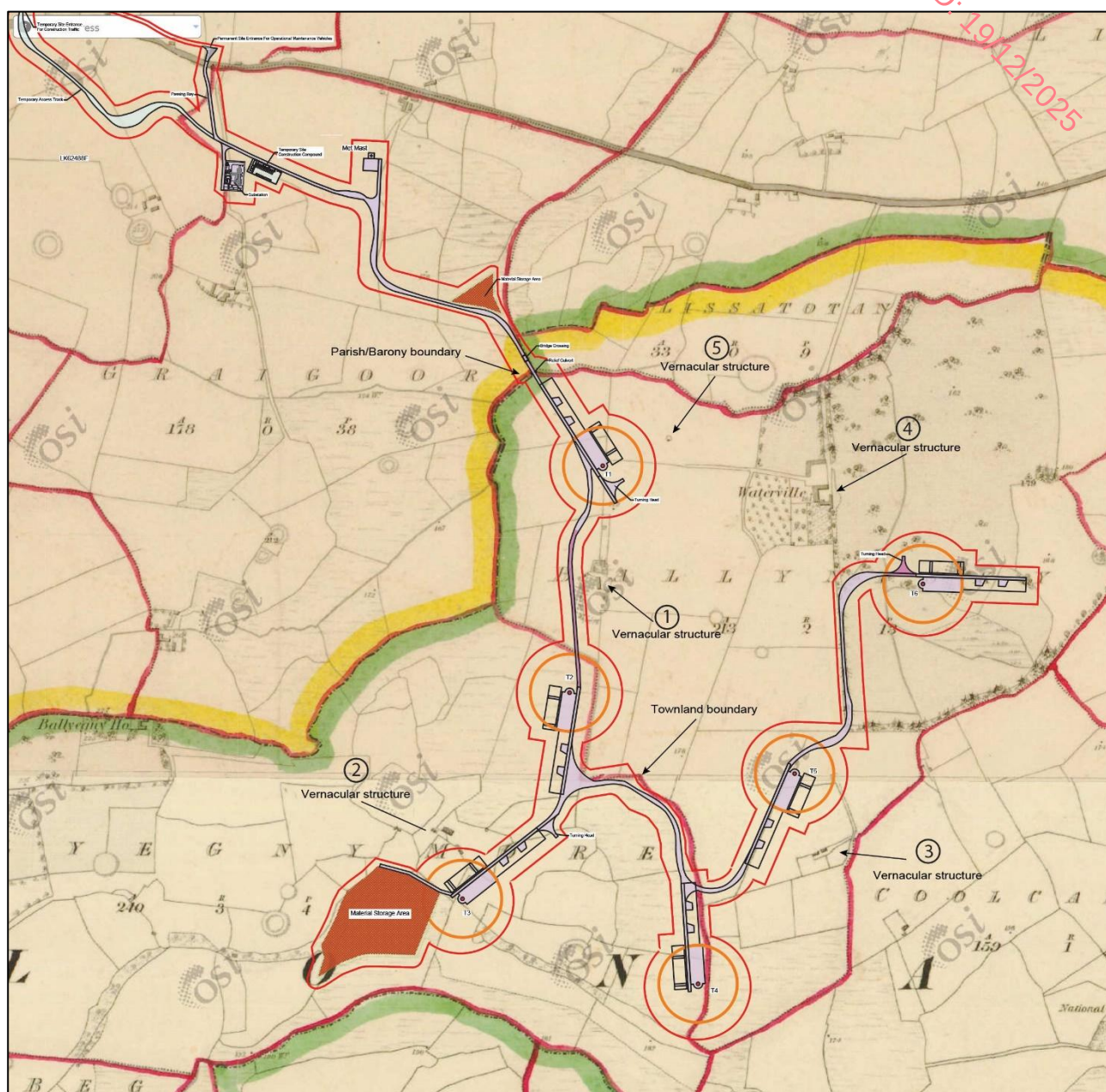


Figure 13-6: BWF Layout Overlain on 1st Ed., Pre-famine OS Map

Vernacular Structure 1 (VS1) is located in Ballynisky townland between turbines T1 and T2. The proposed access track / internal grid route connecting the two turbines will be traversed c.60m west of the VS1. The structure marked on the pre-famine 1st Ed. historic 6" map was probably a single house with a small shed and a garden. VS1 is further denoted on the 2nd Edition 25" OS map with additional small out-buildings. Today there is a modern shed and concrete yard at the location, but some rubblestone masonry of VS1 still survives (**Plate 13-6**).



Plate 13-6: Possible Remnants of VS1 from NW

Vernacular Structure 2 (VS2) is depicted on 1st Ed. 6" map in the eastern limits of Ballyegny More townland comprising of six buildings orientated roughly in a NW-SE line within amorphous fields and a single well (**Figure 13-6**). Proposed Turbine 6 will be situated at a location abutting the structures. Examination of the 2nd Ed. 1893 25" OS map denotes that only one of the structures had survived by this time. Today there is no visible overground trace of any of the structures. Field inspection however, revealed a small depression and change in vegetation at this location that may reflect the site (**Plate 13-12**).

Vernacular Structure 3 (VS3) was located at the southern limits of Ballynisky townland and comprised of two small buildings (**Figure 13-6**). The two structures are not denoted on the 1893 25" OS map. Field inspection in the course of this study revealed no trace of these structures. VS3 was located c.70m to the SE of proposed turbine T5.

Vernacular Structure 4 (VS4) is the most prominent and largest historic structure within the study area. The relict upstanding complex comprises of the remains of a large complex named Waterville House or Waterfield- that no doubt takes its name from the townland Ballynisky - *Baile an Uisce*, the townland of the water. Waterville is depicted on the 1st Ed OS 6" map. It is depicted as a large L-shaped structure abutted on its SE corner by a contiguous complex of narrower outbuildings, most likely stables that collectively creates a central enclosed yard area entered from the NE. The curtilage comprises of formal walled orchards and garden abuts the structure to the W and S with a second L-shaped outbuilding to the N.

Griffith's Valuation (1853) describes this structure as a rectangular building, one storey high in good repair with a plain garden and set of offices and some trees. The resident of the house at the time was John Creagh and the house itself was erected by his late father sometime around 1785-90 (www.askaboutireland.ie). The 2nd Edition OS map of 1893 shows that some of the walls were demolished by this time and the house had become mostly roofless (**Figure 13-7**). The remnants of Waterville House are situated c.180m to the NW of the closest proposed turbine T6 (**Plate 13-7**).

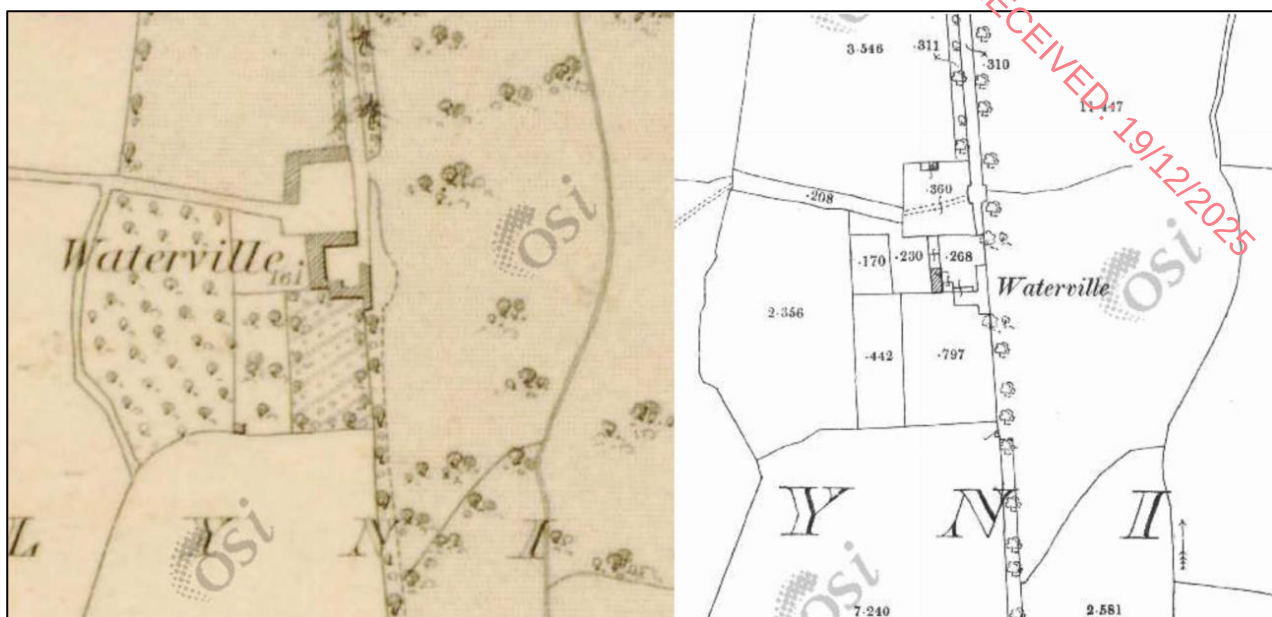


Figure 13-7: Waterville House on 1st and 2nd Edition OS Maps



Plate 13-7: Oblique View of Waterville House from NE (UAV Image by LDA)

Vernacular Structure 5 (VS5) is depicted on 1st Ed. OS map as a lime kiln located c.90m to the NE of Waterville House and proposed turbine T1. On the 2nd Ed 1893 25" OS map it is depicted as the remnants of a rectangular wall. There is

no coherent overground trace of the lime kiln today and only a small depression at the spot possibly reflects its location (**Plate 13-9**).

Boundaries: Further examination of the historic maps noted that the proposed Ballynisky WF will be constructed within two parishes viz: the Parish of Kilbradran in the ancient Barony of Shanid and the Parish of Clonagh in the ancient Barony of Connello Lower. This parish and barony boundary is denoted in green / yellow on the 1st Ed OS map extending in a general NE-SW in the north-west limits of BWF. Furthermore, somewhat in the middle of the proposed BWF there is also the townland boundary between Ballyegny More and Ballynisky, depicted on the 1st Ed OS 6" map in red. Graigoor, the third townland within BWF adjoins both Ballyegny More and Ballynisky where it comprises of the barony boundary between Shanid and Connello Lower as well as parish and townland boundaries (**Figure 13-6**).

Placenames

Townlands comprise the smallest unit of land division in the Irish landscape, and many may preserve early Gaelic territorial boundaries that pre-date the Anglo-Norman conquest. The layout and nomenclature of the Irish townlands were recorded and standardised by the work of the Ordnance Survey in the 19th century. The Irish roots of townland names often refer to natural topographical features, but some name elements may also give an indication of the presence of past human activity within the townland. For instance, placename elements such as *lis*, *dun* and *rath* indicate the presence of a ringfort; while *kill* and *temple* suggest an association with a church site.

Table 13-5: Townlands within EIAR Study Area

Townland	Irish Name	Translation
Ballynisky	<i>Baile an Uisce</i>	baile (town, townland), uisce (water): the townland of the water
Ballyegny More	<i>Baile Éignigh Mór</i>	baile (town, townland), mór (big, great), Éigneach – personal name: the big town of Éigneach
Graigoor	<i>Gráig Iúir</i>	gráig (hamlet), iúr (yew-tree): hamlet of (the) yew tree

13.3.3 Site Location and Description

Field Inspection

General

Field inspection of the locations of the proposed turbines, substation, temporary compound, meteorological mast and internal grid connection was undertaken in December 2021 in good weather conditions. Due to internal design changes to the substation and compound locations, an additional site inspection was undertaken in November 2022. The field walking was supported by UAV (drone) survey. A possible new enclosure site was recorded during the field inspection (see below).

Turbine 1 (T1)

Proposed T1 will be situated at Ballynisky townland at the intersection of three fields divided by an earthen stone boundary, overgrown with small bushes. The site comprises of well-maintained pasture with open views of the surrounding landscape. There are two cultural heritage sites situated in proximity to T1 viz: (1) the recorded monument, enclosure LI019-270, located c.120m to the NE (**Section 13.3.1.2.1**) and (2) the lime kiln site (VS5) denoted on 1st Ed. OS map c. 90m to the NE (see **Section 13.3.2.2**). No trace of the enclosure can be noted at ground level; however, the circular shaped remains of the recorded monument are clearly visible on UAV imagery (**Plate 13-8**). The possible site of the limekiln (VS5) is represented by a sub-oval depression, but no overground remains of the kiln structure survive. Nothing of archaeological interest was found on the footprint of proposed turbine T1.



Plate 13-8: Location of T1 and Enclosure LI019-270 Located c.120m to the NE (View from NE) (UAV Image by LDA)



Plate 13-9: Possible Location of Lime Kiln (Vernacular Structure 5) Depicted on 1st Ed. OS Map (from E)

Turbine 2 (T2)

The proposed turbine T2 will be situated in the Ballyegny More townland within a wet grassland, sub-rectangular field (**Plate 13-10**). The field is very uneven and rough, overgrown with high grass and furze. Nothing of archaeological interest was noted at the location.



Plate 13-10: Location of T2 from N (UAV Image by LDA)

Turbine 3 (T3)

The proposed turbine T3 will be situated in the Ballyegny More townland on improved, generally flat pasture with some uneven sections (**Plate 13-11**). There is a small cluster of vernacular buildings (VS2) denoted on 1st Ed OS map (**Figure 13-6**) and including one building possible located on the footprint of proposed turbine T3. Field inspection revealed no overground remains of these features; however, a shallow depression on the ground and change in the vegetation at this location was noted (**Plate 13-12**). The nearest recorded monument is ringfort LI028-043 situated c.150m to the SE of proposed turbine (**Section 13.3.1.2.2**).



Plate 13-11: Location of T3 from E (UAV Image by LDA)



Plate 13-12: Location of Vernacular Structure 2 from SE

Turbine 4 (T4)

The proposed turbine T4 will be situated at the SE limits of a large flat, improved pasture field in Ballyegny More. The site abuts the townland boundary with Ballynisky from the E (**Plate 13-13**). T4 will be constructed more or less equidistant between the two recorded ringforts: LI028-043 – located c.150m to the W and LI028-182 – c.150m to the E. Ringfort LI028-043 is clearly visible as a ring of mature trees and ringfort LI028-182 is easily noticeable on UAV images and are also noticeable at the ground level. Comprehensive field walking revealed no new archaeological features at proposed turbine T4.



Plate 13-13: Location of T4 from NE. Note the Townland Boundary

Turbine 5 (T5)

The proposed turbine T5 will be constructed SW of T6 on flat improved pasture and will abut a small field boundary overgrown with scrub vegetation / small bushes (**Plate 13-14**). The pasture was well maintained but wet during field walking. The closest recorded monument is ringfort LI028-182 located c.180m to the S. No archaeology or cultural heritage features were found during field inspection.



Plate 13-14: Location of T5 from NE

Turbine 6 (T6)

The proposed turbine T6 will be situated in the Ballynisky townland on flat wet marshy pasture and occasional small trees. Field walking at the site was constrained due to very wet ground conditions, however, a comprehensive drone survey was completed at this location and furthermore the proposed turbine is situated outside the wettest area (**Plate 13-15**). Nothing of archaeological interest was recorded.



Plate 13-15: Turbine 6 Location from NW (UAV Image by LDA)

Substation and Temporary Compound

The proposed substation and temporary compound will be located in the Graigoor townland on a large flat field bisected by a farm track (**Plate 13-16**). The field comprises of good quality pasture, in use for cattle grazing during field inspection. Nothing of archaeological interest was found at this location.



Plate 13-16: Temporary Compound and Substation Location from W

Meteorological Mast

The proposed Meteorological Mast will be situated in the same field as the substation and temporary compound, c.100 to the NE of them. No archaeology or cultural heritage features were found at this location.



Plate 13-17: Location of Met Mast from SW

Internal Access Track/Grid Connection

The proposed access track will be 5.0m wide and will extend roughly SE from the 3rd class road (L1219) to the substation site and then to T1 where it will continue to the S connecting T2, T3, and T4. From T4 the track will turn NE to connect T5 and T6. The vast majority of the proposed track route will extend along several boundaries, traversing them a number of times. Field inspection revealed no previously unknown archaeological sites, or cultural heritage features along / or in proximity to the proposed route, however desk-based research prior to the site visit revealed that the internal access track will cut through townland boundaries as well as the barony / parish boundary at three locations, all of which were inspected.

The proposed access track will cut the barony boundary between Shanid and Connello Lower and parish boundary between Kilbradran and Clonagh Parish between the substation and T1 (c.160m to the NW of T1). The parish boundary at the point of crossing is formed by a stream with dense vegetation on its southern bank (**Plate 13-18**). The second crossing point will be located between T1 and T2 where the proposed route will traverse the Ballyegny More and Ballynisky townland boundary. The townland boundary there comprises of a deep ditch and a high, overgrown bank to the S. The third crossing point of the townland boundary between Ballyegny More and Ballynisky is situated by T4 and comprises of a small, highly overgrown bank (**Plate 13-19**).



Plate 13-18: View of Kilbradran/Clonagh Parish Boundary from SW (LDA)



Plate 13-19: Two Crossing Points within Ballyegny More/Ballynisky Townland Boundary from SE (UAV Image by LDA)

Newly Discovered Enclosure

A possible small enclosure was discovered during field inspection. The enclosure site is situated on flat, well-maintained grassy pasture with panoramic views of all surroundings. The central point ITM coordinate of the enclosure is E530184 / N642951 and c.200m NW of proposed turbine T4. The enclosure bank is truncated by a field boundary to the N and NW before disappearing beyond the boundary, where it was completely levelled. Half of the enclosure however can be clearly identified on the ground (**Plate 13-21**) as well as on UAV images (**Plate 13-20**). The average height of the bank is c.0.5m (from interior). There is no trace of a fosse. Maximum recorded diameter from the outer most limits of the bank measured c. 35m. No evidence of internal features was noticed.



Plate 13-20: Possible Enclosure Found During Field Inspection from SW (UAV Image by LDA)



Plate 13-21: Location of Possible Enclosure from NE

13.4 Existing Receiving Environment of Proposed Grid Connection

The proposed grid connection route presented as Option A will commence from the substation at Carrons WF and extend for c.240m NNE along the existing internal trackway of Carrons WF and continue in the same direction along a field boundary of green pasture at Dunmoylan (for c.200m). After crossing Dunmoylan / Ballysteen townland boundary (demarcated by a stream) it will continue for a short stretch across a green field in a NE direction and connect with local road (L1219). The main section of the proposed grid connection comprising of c.1600m will traverse in a general NW-SE direction along the existing local road as far as Graigoor townland where it will turn S along an existing track (at the point where the proposed entrance and access track to the BWF are located) to eventually connect with the proposed Ballynisky substation (**Figure 13-8**). The cabling trench will cross six townlands: Carrons, Dunmoylan, Ballysteen, Lisbane, Kilbradran and Graigoor. A c.200m corridor encompassing the proposed grid connection was assessed.

The proposed grid connection route presented as Option B is located entirely within the BWF site and will facilitate a loop-in connection to an existing 38kV overhead line that traverses the site in the townland of Graigoor. To enable this connection to the proposed 38kV substation, the existing overhead line will be terminated at two poles situated to the south of the proposed Meteorological Mast (at the most eastern extent of the development presented in **Figure 13-8** below). From this point, the electricity line will be routed underground to the proposed substation and subsequently back out to reconnect with the overhead line. This underground cabling will follow the alignment of the proposed access track for the BWF and will remain within the townland of Graigoor, crossing a single field boundary. As previously outlined, the works associated with Option B are assessed as an integral component of the internal Wind Farm works.

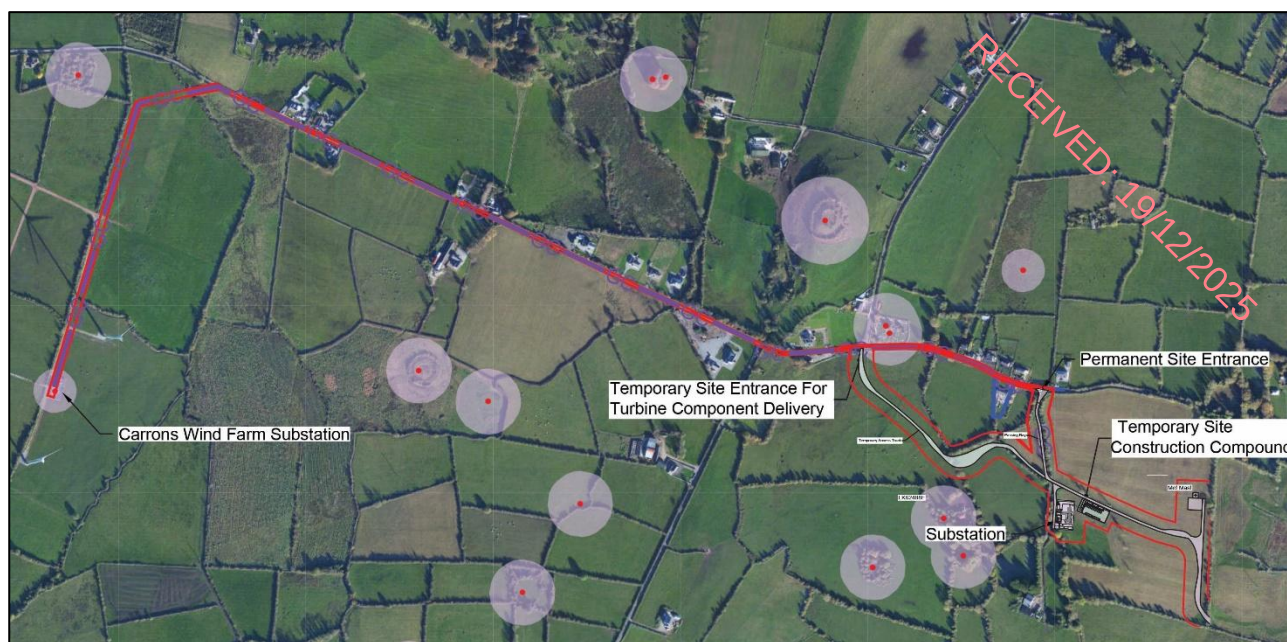


Figure 13-8: Proposed Grid Connection and Temporary Access Track with Recorded Monuments in Vicinity

13.4.4 Recorded Monuments along Proposed Grid Connection (Option A)

A c.200m corridor encompassing grid connection (Option A) was assessed. This established corridor was based on a 60m radius Zone of Notification of the monuments in the area as well as on a potentiality of discovery of unrecorded features associated with the monuments. There are four recorded archaeological monuments situated within the 200m wide study corridor from the proposed grid connection (**Figure 13-8**). At the start point at Carrons WF, a *fulacht fiadh*, LI019-276 is located. It was recorded as a spread of charcoal and heat-shattered stones (9.5m x 7.4m) during construction of the substation compound in the course of archaeological monitoring in 2010 and preserved *in situ* (www.archaeology.ie).

The second recorded monument – ringfort LI019-108, is located c.88m west of the proposed grid route at Dunmoylan townland close to the existing local road. The ringfort is clearly depicted on 1st Edition OS map as large single hachured circular feature and captioned as *Killeen Fort*. The name 'killeen' and Ordnance Survey Name Books (OSNB) suggests that the ringfort have been used as a children burial ground (CBG) although no evident burials can be noted at present within the heavily overgrown interior. The monument is described in the NMS database as: '*In pasture, on gentle N-facing slope. Site is contained within small field immediately S of public road. Oval area (34.5m N-S) defined by scarped edge, outer earthen bank and intervening fosse (Wth 2.6m). Scarped edge (H 0.5m; Wth 3.3m), best preserved along S arc, lowers at N (H 0.2m). Outer bank (int. H 0.9m; ext. 0.6m) is overlain by ruinous stone wall NNW->NE; otherwise bank is masked by dense overgrowth. Break in bank (Wth 2.5m), matched by dip in scarp, at E.*' (www.archaeology.ie).

The two remaining monuments in proximity to the proposed grid route presented as Option A, Kilbradran medieval church LI019-131001 and graveyard LI019-131002 abut the north side of the local road along which the cable will traverse (**Plate 13-22**). Both monuments are denoted on the 1st Edition OS map. The church is located in northern quadrant of the rectangular graveyard which is enclosed by a stone wall with entrance gate at the S (www.archaeology.ie).



Plate 13-22: Graveyard LI019-131002 View from NE. Note Overgrown Remains of Rectangular Church (UAV Image by LDARCH)

13.4.5 Excavations Ireland Database

Examination of the Excavations Bulletin (1970 – 2023) revealed two entries for licensed archaeological works associated within two of the six townlands of the proposed grid connection (Option A).

Archaeological pre-development testing had been undertaken at the proposed Carrons WF development site in 2004 (Licence 04E1718) when eight trenches were excavated with negative results (www.excavations.ie). However, as was mentioned above during unlicensed monitoring of the construction of the compound and substation a *fulacht fiadh* LI019-276 was found and preserved *in situ*.

In 2008 archaeological testing (08E0214) was undertaken as part of a pre planning assessment for a house located within the zone of notification (ZON) of the graveyard and church at Kilbradran with negative results (www.excavations.ie).

13.4.6 Topographical Files

A review of the National Museum database has revealed that there are no archaeological artefacts found in close proximity to either of the proposed grid connections (www.heritagemaps.ie).

13.4.7 Recorded Protected Structures & National Inventory of Architectural Heritage (NIAH)

There are no Recorded Protected Structures (RPS), or NIAH structures recorded within the 200m wide study area of the proposed grid connection route (Option A). The nearest Protected Structure, (RPS 448), comprises of a thatched house (Reg. No. 21901914) built c.1800, situated c.400m E of the proposed grid connection (Option A).

13.4.8 Cultural Heritage Sites

Examination of the pre-famine 1st Edition OS 6" map revealed no structures in close proximity to the proposed grid connection. The proposed grid connection route presented as Option A will cross townland boundaries at two points: Carrons / Dunmoylan (and parish) and Dunmoylan / Ballysteen (parish boundary as well). The rest of the boundaries are already cut by the existing local road.

13.4.9 Placename

The proposed grid connection route (Option A) will traverse six townlands: Carrons, Dunmoylan, Lisbane, Ballysteen, Kilbradran and Graigoor. Carrons is located in the parish of Kilcolman and Barony of Shanid; Dunmoylan and Lisbane in same barony and parish of Dunmoylan; Ballysteen and Graigoor in the same barony and parish of Kibradran. A description and placename explanation of each townland within this grid connection route is provided in the table below (Table 13-6).

Table 13-6: Townlands of Proposed Grid Connection (Option A)

Townland	Irish Name	Translation
Carrons	<i>Na Cairne</i>	'the heaps'
Dunmoylan	<i>Dún Maoilín</i>	Dún – fort Maoilín – personal name the fort of Maoilín
Ballysteen	<i>Baile Uistín</i>	Baile – townland, town, homestead Uistín – personal name homestead of Uí Chanáin
Kilbradran	<i>Cill Bhradaráin</i>	Cill – church the church of Bradarán
Graigoor	<i>Gráig Iúir</i>	gráig (hamlet), iúr (yew-tree) hamlet of (the) yew tree
Lisbane	<i>An Lios Bán</i>	Bán - white, lea-ground, grassy Lios - ring-fort, enclosure

13.4.10 Field Inspection

The proposed grid route (Option A) was inspected by an experienced supervisory level field archaeologist in June 2022. Nothing new of archaeological or cultural heritage interest was recorded.



Plate 13-23: Local Road with Proposed Grid Connection Option A (in red). Note the Two Turbines of Carrons WF at the Background (LDA)



Plate 13-24: Stream – Townland/Parish Boundary Between Dunmoylan and Ballysteen (LDA)

13.5 Temporary Access Track

A c.500m long temporary access track will commence from the local road at Kilbradran cross and will traverse roughly SE through a greenfield, crossing the townland boundary with Graigoor and eventually connecting with the proposed permanent trackway extending from the entrance to the BWF substation. No recorded monuments are directly situated on the footprint of the proposed trackway, although the zone of notification (ZON) of the recorded graveyard LI019-131002 and church LI019-131001 slightly extends (c.5m) over the starting point of the proposed trackway to the NE. A cluster of three recorded monuments, two ringforts (LI019-132 and LI019-132) and enclosure (LI019-130) are situated south of the temporary access track with the ZON of the nearest one, LI019-132, situated c.60m from it. Nothing of archaeological interest was noted during field inspection for the temporary access track.

13.6 Geophysical Survey Summary Results

A geophysical survey was conducted under license 24R0517 issued by the National Monuments Service (NMS). The survey was carried out on behalf of Laurence Dunne Archaeology Ltd (Greiner & Shanahan 2024) (**Appendix 13B**). Nine targeted areas (A – I) were selected that encompassed the vast majority of the proposed BWF. In advance of undertaking the geophysics, discussions and agreement with regard to the nine areas were held with the LC&CC archaeologist (**Figure 13-9**). The magnetometer survey identified a substantial number of geophysical anomalies across the nine targeted areas. The vast majority of which reflect networks of linear features that represent historical field systems (Grenier & Shanahan 2024). The geophysical results also recorded definitive and potential archaeological features including enclosures and / or ringforts, some of which, but not all relate to known recorded SMR/RMP sites (ibid 28). Additionally, a moderate number of anomalies were interpreted as potential archaeology in the form of possible pit features and a smaller number of anomalies possibly reflecting additional enclosures (**Table 13-7**). The precise nature and significance of these anomalies can only be established by licensed test excavations. The anomalies were recorded in all of the nine areas surveyed (**Figure 13-10**) (**Appendix 13B**).

Four definite archaeological features were recorded, two of which relate to the previously recorded enclosure LI019-027 in Area D and the recorded ringfort LI028-038 in Area F. The additional definite previously unrecorded archaeological features comprise of a circular and rectangular enclosure in the northern limits of Area F. Of interest is that the geophysical survey did not identify data of the recorded ringfort LI028-039 (ibid 31). In that context only farther archaeological assessment comprising archaeological testing (if required) can determine the veracity of its classification.

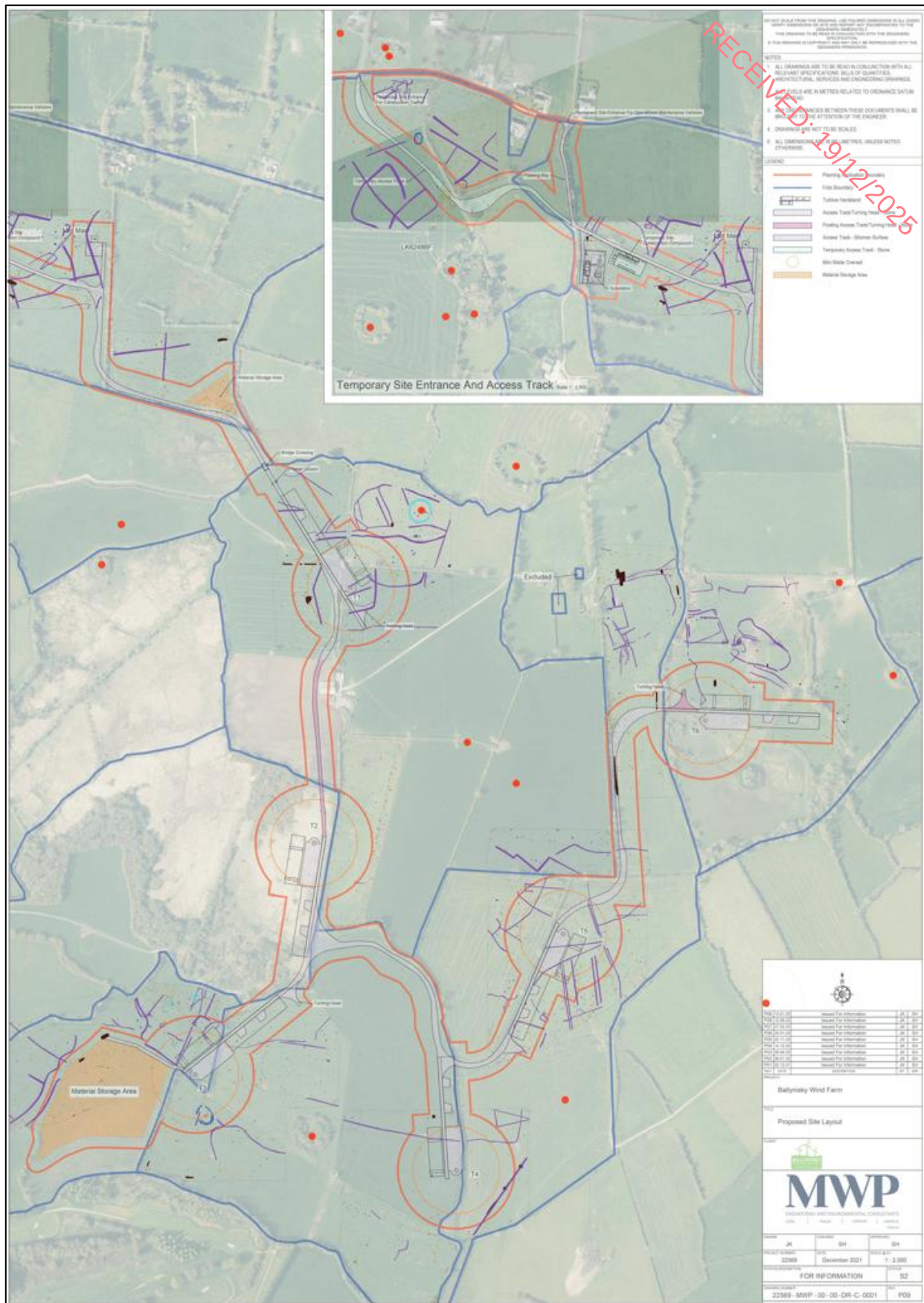
Table 13-7: Archaeological Features and Notable Potential Features Recorded in the Geophysical Survey (Grenier & Shanahan 2024)

Feature No.	Interpretation	Site	Field	Dimensions	ITM (E/N)	Figures in Report
1	Possible Enclosure	A	1	c. 19m x c. 14m	E 528983, N 643726	16-18
2	Possible Enclosure	A	2	c. 14m diameter	E 529055, N 643726	16-18
3	House	B	5	c. 12m x c. 6m	E 529341, N 643658	19-21
4	Enclosure (L1019-270--)	D	9	c. 37m x c. 39m	E 530104, N 643195	22-24
5	Structure / Lime Kiln	D	9	c. 7m x c. 5m	E 529999, N 643164	22-24
6	Ringfort (L1028-038--)	F	13	c. 39m x c. 40m	E 529309, N 642285	28-30
7	Enclosure/ House	F	13	c. 13m x c. 11m	E 529651, N 642443	28-30
8	Enclosure	F	13	c. 17m x c. 16m	E 529617, N 642433	28-30

Feature No.	Interpretation	Site	Field	Dimensions	ITM (E/N)	Figures in Report
9	Possible ring-ditch	F	13	c. 6m diameter	E 529599, N 642399	28-30
10	Possible Ringfort/ Enclosure	F	15	c. 32m x c. 26m	E 529666, N 642259	28-30
11	Possible Large Enclosure	I	24	c. 97m x c. 55m	E 530540 N 642989	34-36



Figure 13-9: Location Map of Nine Geophysical Areas Encompassing the BWF



13.7 Likely Significant Impacts

13.7.1 Do Nothing Scenario

If the Proposed Development does not proceed no potential impact to archaeology or cultural heritage would occur with no requirement for mitigation measures.

13.7.2 Assessment of Impact During Construction (Indirect effect)

Indirect effects, in terms of archaeology, architectural and cultural heritage includes impacts on the visual setting of any cultural heritage asset in the wider landscape. Since these visual effects are only possible once turbines are constructed, they are considered operational effects and are therefore discussed in **Section 13.7.4** below. No indirect effects were identified which would occur at the construction stage.

13.7.3 Assessment of Impact During Construction (Direct effect)

Direct effect refers to a physical impact on monuments, features or sites during the construction phase. The construction phase of the proposed Ballynisky WF will consist of ground disturbance including topsoil removal and excavation of cable trenches. In that context potential physical impact to known and unknown potential archaeological features are outlined below.

National Monuments in State Care

Proposed Wind Farm – Turbines, Hardstands, Substation, Temporary Compound, Temporary Access Track and Internal Grid Connection/Access Tracks

No National Monuments in State Ownership/Guardianship are located within or adjacent to the EIAR study area and therefore there will be no direct impacts on any by construction of the BWF. The nearest National Monument - ringfort (NMN: 459) is located c.4.4km to the SW from the proposed development. Indirect Operational effects are addressed in **Section 13.7.5.1.1** below.

Proposed Grid Connection (Option A)

No National Monuments in State Ownership/Guardianship are located on or adjacent to the proposed grid connection (Option A), therefore there will be no direct impacts to these aspects of the archaeological resource.

Recorded monuments

Proposed Wind Farm – Turbines, Hardstands, Substation, Temporary Compound, Temporary Access Track and Internal Grid Connection/Access Tracks

There are fifteen recorded monuments within the EIAR study area of the BWF. The monuments are situated between 120m-300m from the proposed turbines and outside of the footprint of the development. Consequently, there will be no direct physical impact to any of the monuments during the construction works.

Proposed Grid Connection (Option A)

Four recorded monuments are located within the 200m wide corridor of the grid connection route. None of these are located immediately on the cable route. However, the ZON of recorded graveyard LI019-131002 extends over the proposed cable route at this point. This section of the grid connection cable trench should be archaeologically monitored under license from the NMS during the construction phase. The impact by the proposed grid connection near the recorded graveyard is classified as '*slight*' and is based on the fact that the ground there was already disturbed by the existing road L1219.

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Recently Recorded Site in Vicinity of the BWF

There will be no direct physical impact to the possible enclosure or ringfort discovered during field inspection, as the closest turbine (T4) will be located c.200m to the NW.

Potential Unknown Unrecorded Sub-Surface Archaeological Features

Proposed Wind Farm – Turbines, Hardstands, Substation, Temporary Compound, Temporary Access Track and Internal Grid Connection/Access Tracks

There may be a direct physical impact on potential unknown, sub-surface archaeological features during the construction phase of the BWF. This unknown potential is based on: - (1) the 15 recorded monuments in vicinity of the BWF; (2) the large number, c.200, of recorded monuments within the 3km radius study area; (3) good quality land and close distance to fresh water (stream at Kilbradran/Clonagh Parish). Results of targeted geophysical survey revealed no record of any definite archaeological features located directly on the footprint of the proposed development. The majority of the geophysical survey data within the proposed planning boundary comprised extensive networks of linears, representing historical field systems or potential archaeological features only. Taking into consideration all above, the possible impact to previously unrecorded archaeological features is classified as **'moderate'**.

Proposed Grid Connection (Option A)

There may be a direct physical impact on previously unknown, sub-surface archaeological features during construction of the proposed grid connection at the greenfield sections of the grid connection in the Dunmoylan, Ballysteen and Graigoor townlands. The impact is classified as **'moderate'**. It is recommended that these sections of the grid connection should be archaeologically monitored or tested in advance under licence from the NMS.

There may be direct physical impact on previously unknown, sub-surface archaeological features in proximity of recorded graveyard LI019-131002. The impact is classified as **'slight'**.

Protected Structures and National Inventory of Architectural Heritage (NIAH)

Proposed Ballynisky Wind Farm – Turbines, Hardstands, Substation, Temporary Compound, Temporary Access Track and Internal Grid Connection/Access Tracks

There are no Protected Structures or structures/items listed in the NIAH located within the proposed BWF. The nearest Protected Structures to BWF include: (1) a thatched house (RPS. Reg. No. 448) situated c.100m north of the proposed Met Mast and (2) Ballyegny House (RPS. Reg. No. 87) situated c.0.6km to the west of the nearest turbine, T3. There will be no direct impact to these two protected structures.

Proposed Grid Connection (Option A)

There are no Protected Structures or structures/items listed in the NIAH situated within 200m of the grid connection cable route, thus there be no direct physical impact to any.

Cultural Heritage Sites

Proposed Ballynisky Wind Farm – Turbines, Hardstands, Substation, Temporary Compound, Temporary Access Track and Internal Grid Connection/Access Tracks

Five sites / features of cultural heritage, designated VS1-VS5, were noted within the boundary of the BWF and its vicinity on the 1st Edition OS 6" map.

- There may be direct physical impact during construction of turbine T3 to potential sub-surface remains of VS2 (Settlement 1, **Figure 13-9**). Possible remains of the settlement may still be found below the ground level during the construction phase, however there are no clear traces of any building visible at the present day and in that

context the impact is classified as **'slight'**. Archaeological monitoring under the license from NMS will be required during the construction phase.

- There will be no direct physical impact on VS1 situated c.100m south of proposed turbine T1 and c.50m east of the proposed internal accessway.
- There will be no direct physical impact on VS3 situated c.70m SE from proposed turbine T5.
- There will be no direct physical impact on VS4 (Waterville House) situated c.180m NW from proposed turbine T6.
- There will be no direct physical impact on VS5 (a lime kiln) situated c.90m NE from proposed turbine T1.
- There will be direct physical impacts to the townland (Graigoor-Ballynisky)/Parish (Kilbradran-Clonagh)/Barony (Shanid-Connello Lower) boundary during the construction of an access track/internal grid connection between the proposed substation and turbine T1 (**Figure 13-9**). The boundary comprises of a stream and earthen bank. As the townland, Parish and Barony boundaries are considered to be important heritage features, then in that context the impact is classified as **'moderate'**. These boundary impacts should be mitigated by: (1) archaeological record prior to construction and (2) subsequent archaeological monitoring of the groundworks during construction. Reverting the boundaries to their pre-construction phase in the decommissioning stage will reduce the impact to **'slight'**.
- Ballyegny More-Ballynisky townland boundary will be directly impacted in two sections between turbines T1 and T2 and between T4 and T6 by the construction of the proposed access track / internal grid connection (**Figure 13-9**). As the section of the boundary will be physically disturbed/levelled to accommodate the internal track, the impact is classified as **'moderate'**. These boundary impacts should be mitigated by: (1) archaeological record prior to construction and (2) subsequent archaeological monitoring of the groundworks during construction. Reverting the boundary to its pre-construction phase in the decommissioning stage will reduce the impact to **'slight'**.
- There will be a direct impact to Kilbradran - Graigoor townland boundary during construction of the temporary access track. The impact is classified as **'moderate'** as the boundary will be physically removed/levelled to accommodate the track. The boundary impact should be mitigated by: (1) archaeological record prior to construction and (2) subsequent archaeological monitoring of the groundworks during construction. Reverting the boundary to its pre-construction phase in the decommissioning stage will reduce the impact to **'slight'**.

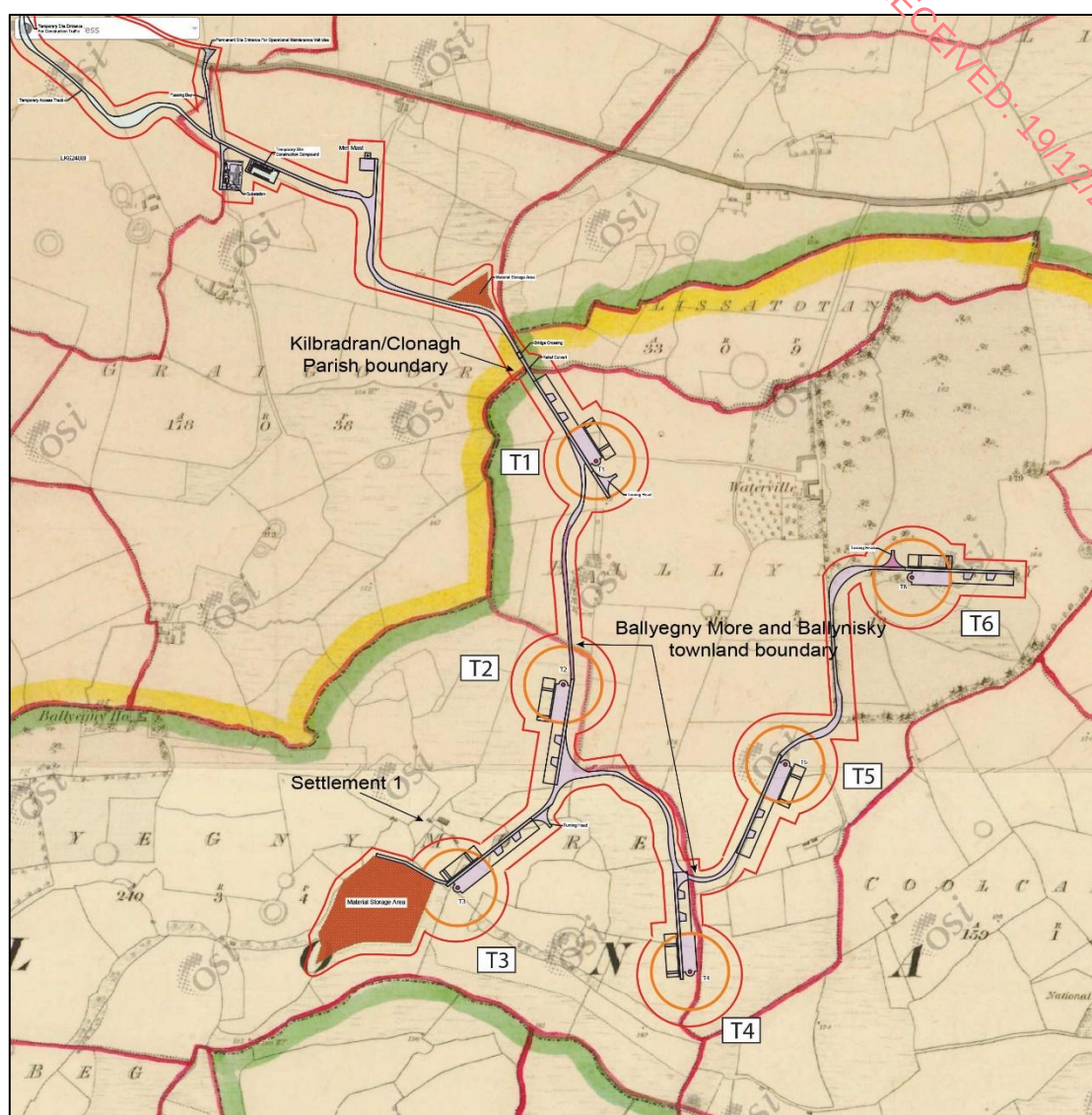


Figure 13-11: Cultural Heritage Features Located within Red Line Boundary of the BWF

Proposed Grid Connection (Option A)

No features of cultural heritage merit were noted along the proposed grid connection route as a result of cartographic research. The proposed grid connection will cross townland / parish boundaries in two sections:

- There will be a physical impact on the Carrons-Dunmoylan townland boundary. The impact is classified as **'insignificant'** as there is an existing access track crossing the boundary at the location.
- There will be a physical impact on the Dunmoylan-Ballysteen townland boundary. The boundary consists of a stream and expands onto a green field to the W where no upstanding remains can be noted. As the proposed grid connection at the stream section will be constructed beneath the water surface (see **Chapter 3** of this **EIAR**) and no trace of the boundary is visible on the green field, then there will be **'slight'** physical impact to the boundary during the construction phase.
- There will be no physical direct impact on other townland boundaries on the route of the proposed grid connection as it will traverse along the existing local road.

13.7.4 Assessment of Impact During Operation (Indirect Effect)

Indirect impact describes the presence of the development during the operation phase when they may cause change to the surroundings of the archaeological or architectural heritage resource. Cultural visual impacts are most commonly encountered but other environmental factors such as noise, light can be relevant in some cases. Operational impacts are discussed below only for the proposed turbines. Access tracks, underground cables, substation etc. are excluded from this section of the assessment as they are not capable of impacting on the visual setting of the monuments.

National Monuments in State Care

Visual impacts on National Monuments in State Ownership/Guardianship were assessed in a 10km radius area from the BWF.

Askeaton Abbey (NMN: 185) and Askeaton Castle (NMN: 201) are both situated in the heart of Askeaton town, c.8.5km to the NE of the proposed turbines. Both monuments are well hidden within mature trees and are surrounded by the buildings of the town. Consequently, the turbines will not be visible from the ground level at both monuments. Given the distance and settings of the monuments, potential visual impact is classified as '**not significant**'.

Desmond Hall and Great Hall (NMN: 636 & 582) is situated in the heart of Newcastlewest town, c.8.7km to the SSW of the proposed turbines. The monuments are situated in the centre of the town and are surrounded by several factors such as other buildings or trees. In that context proposed turbines will not be visible from the ground level of the monuments. Given the distance and settings of the monuments, potential visual impact is classified as '**not significant**'.

Ardagh Ringfort (NMN: 459): The ringfort is situated c.4.4km from the nearest proposed turbine. This is the location where the Ardagh Hoard that included the 8th century Ardagh Chalice was found. Given the fact that the ringfort is located on private land with no public access, partially leveled and well hidden by mature trees, the cultural visual impact is classified as '**not significant**'.

Recorded Monuments within the EIAR Study Area

Indirect impact to the recorded monuments in the vicinity of the proposed BWF was assessed on the sites within the EIAR study which is not greater than c.300m from the proposed turbines and substation locations (**Figure 13-10**). Potential visual impact was established by combination of field inspection, drone survey and desk-based research consisting of information from the National Monuments Service database (www.archaeology.ie), heritage OS historic maps (www.heritagemaps.ie) and available online aerial imagery (www.earth.google.com).

The proposed turbines will be visible from each of the monument's locations. In this regard the main factor in determining possible impacts was to evaluate the present state / condition of the monuments. Ultimately, visual impacts to leveled, partially leveled or low-visibility monuments was classified as '**not significant**'. These include: ringfort LI028-039, ringfort LI028-038, ringfort LI019-132, ringfort LI019-133, ringfort LI019-202, enclosure LI019-270, ringfort LI019-206, ringfort LI019-207, ringfort LI028-182 and enclosure LI019-208. Visual impact to ringfort LI019-209 and ringfort LI019-201 is classified as '**slight**' and is based on the fact that the monuments are highly overgrown by vegetation with limited access to them. The visual impacts to enclosure LI019-205, ringfort-cashel LI028-052 and ringfort LI028-043 is classified as '**moderate**' due to the extant upstanding remains and easy access to the interiors and surroundings. However, it should also be noted that these monuments are on private property and therefore, public access is not available to them.



Figure 13-12: Indirect Visual Impact on the Recorded Monuments within the EIAR Study Area

Recorded Monuments within the 3km Study Area

It is not possible to precisely establish potential cultural visual impacts to each of the recorded monuments within the 3km radius study zone. Analysis of online topographic maps (ie.topographic.map.com) combined with drone imagery undertaken during field inspection revealed that the proposed Ballynisky WF will be visible in its surrounding environs. In that context this visual assessment was undertaken in the general understanding that the proposed turbines will be

theoretically visible from each of the monuments. This visibility may not be the present due to vegetation, buildings etc. in the vicinity of the monuments which may reduce visibility. Several available online platforms (National Monuments Database, Google Street maps, Google Earth) as well as field inspections of some of the monuments were used to establish the possible level of visual impacts. Assessment elements include:

- Class and type of the monuments: upstanding churches or castles will be more visually impacted than low level monuments or monuments with no over-surface remains.
- Location: monuments within 1km of the proposed turbines will be more visually impacted than monuments located 3km from the proposed turbines.
- Setting of the monument: monuments in private property; surrounded by dense vegetation or modern houses will be less impacted than monuments in open exposed areas of the surrounding landscape.
- In some cases, public access to the monuments was also considered in the assessment.

The locations of the potentially impacted monuments are displayed and tabulated below (**Figure 13-13, Table 13-7**).

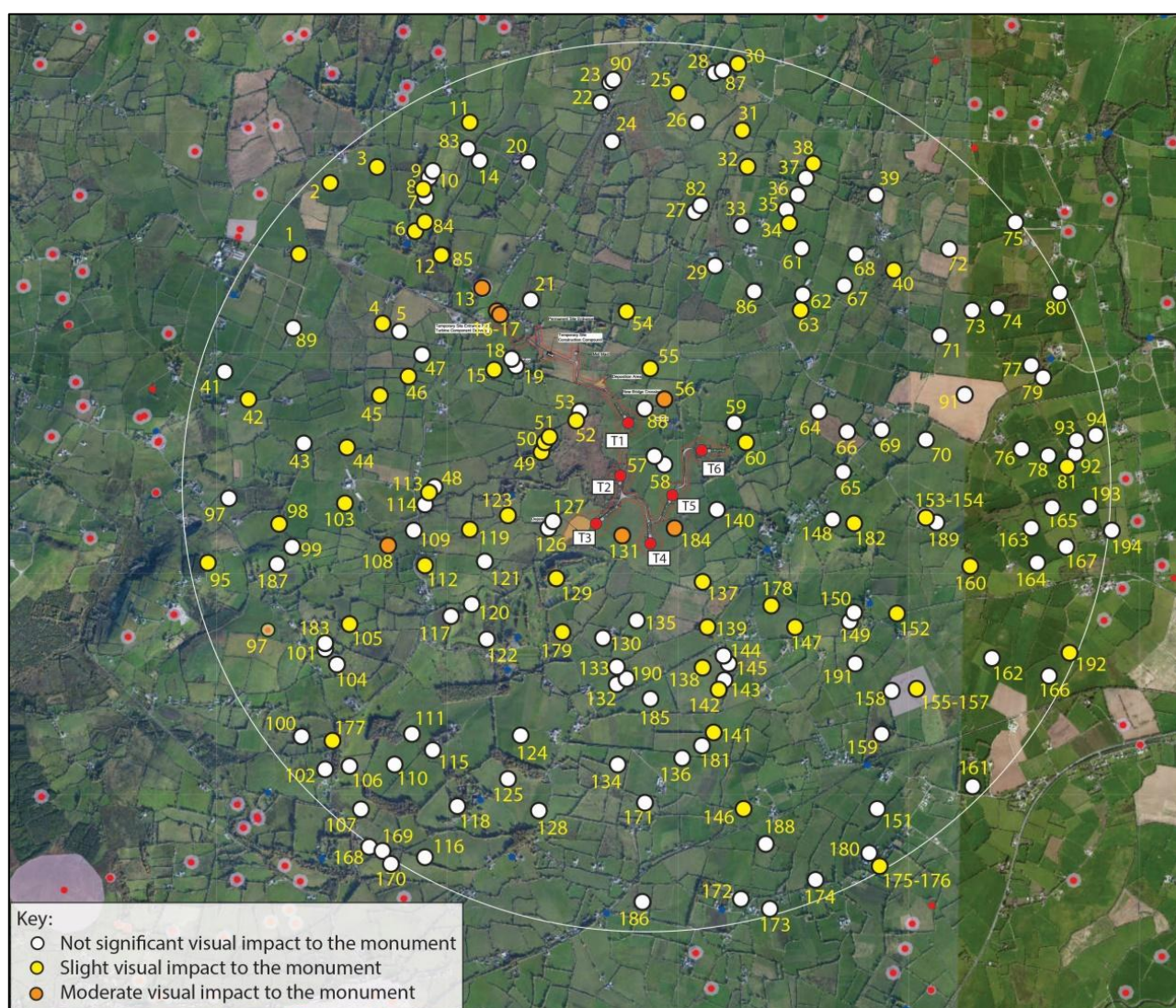


Figure 13-13: Indirect Visual Impact on the Recorded Monuments within 3km Study Area

Table 13-7: Assessment of Indirect Slight to Moderate Visual Impact on the Recorded Monuments within 3km Study Area

No.	SMR No.	Class	Distance (<i>circa</i>)	Potential Visual Impact Based on Assessment Elements
1	LI019-108----	Ringfort - rath	c. 2.7km to the NW of nearest T1	'slight effect'
2	LI019-110----	Ringfort - rath	c. 2.8km to the NW of nearest T1	'slight effect'
3	LI019-111----	Ringfort - rath	c. 2.8km to the NW of nearest T1	'slight effect'
4	LI019-112----	Ringfort - rath	c. 1.9km to the NW of nearest T1	'slight effect'
5	LI019-113----	Ringfort - rath	c. 1.8km to the NW of nearest T1	'not significant'
6	LI019-114----	Ringfort - rath	c. 2km to the NW of nearest T1	'slight effect'
7	LI019-115----	Ringfort - rath	c. 2.2km to the NW of nearest T1	'not significant'
8	LI019-116----	Ringfort - rath	c. 2.3km to the NW of nearest T1	'slight effect'
9	LI019-117----	Ringfort - rath	c. 2.3km to the NW of nearest T1	'not significant'
10	LI019-118----	Ringfort - rath	c. 2.3km to the NW of nearest T1	'not significant'
11	LI019-125----	Ringfort - rath	c. 2.5km to the NW of nearest T1	'slight effect'
12	LI019-126----	Ringfort - rath	c. 1.8km to the NW of nearest T1	'slight effect'
13	LI019-127----	Hilltop enclosure	c. 1.4km to the NW of nearest T1	'moderate effect'
14	LI019-129----	Enclosure	c. 2.2km to the NW of nearest T1	'not significant'
15	LI019-130----	Enclosure	c. 1km to the NW of nearest T1	'slight effect'
16	LI019-131001-	Church	c. 1.2km to the NW of nearest T1	'moderate effect'
17	LI019-131002-	Graveyard	c. 1.2km to the NW of nearest T1	'moderate effect'
18	LI019-132----	Ringfort - rath	c. 1km to the NW of nearest T1	'not significant'
19	LI019-133----	Ringfort - rath	c. 0.9km to the NW of nearest T1	'not significant'
20	LI019-134----	Ringfort - rath	c. 2km to the N of nearest T1	'not significant'
21	LI019-135----	Fulacht fia	c. 1.1km to the NW of nearest T1	'not significant'
22	LI019-136----	Ringfort - rath	c. 2.4km to the N of nearest T1	'not significant'
23	LI019-137----	Ritual site - holy well	c. 2.5km to the N of nearest T1	'not significant'
24	LI019-138----	Ringfort - rath	c. 2km to the N of nearest T1	'not significant'
25	LI019-139----	Ringfort - rath	c. 2.5km to the N of nearest T1	'slight effect'

No.	SMR No.	Class	Distance (<i>circa</i>)	Potential Visual Impact Based on Assessment Elements
26	LI019-141----	Ringfort - cashel	c. 2.3km to the N of nearest T1	'not significant'
27	LI019-142----	Ringfort - rath	c. 1.6km to the NE of nearest T1	'not significant'
28	LI019-143----	Ringfort - rath	c. 2.7km to the NE of nearest T1	'not significant'
29	LI019-144----	Ringfort - rath	c. 1.3km to the NE of nearest T1	'not significant'
30	LI019-145----	Ringfort - rath	c. 2.8km to the NE of nearest T1	'slight effect'
31	LI019-146----	Ringfort - rath	c. 2.3km to the NE of nearest T1	'slight effect'
32	LI019-147----	Ringfort - rath	c. 2km to the NE of nearest T1	'slight effect'
33	LI019-148----	Ringfort - rath	c. 1.6km to the NE of nearest T1	'not significant'
34	LI019-151----	Ringfort - rath	c. 1.8km to the NE of nearest T2	'slight effect'
35	LI019-152----	Ringfort - rath	c. 1.9km to the NE of nearest T2	'not significant'
36	LI019-153----	Ringfort - rath	c. 2km to the NE of nearest T2	'not significant'
37	LI019-154----	Enclosure	c. 2.1km to the NE of nearest T2	'not significant'
38	LI019-155----	Ringfort - rath	c. 2.3km to the NE of nearest T2	'slight effect'
39	LI019-160----	Ringfort - rath	c. 2.3km to the NE of nearest T2	'not significant'
40	LI019-162----	Ringfort - rath	c. 2km to the NE of nearest T2	'slight effect'
41	LI019-190----	Ringfort - rath	c. 2.9km to the W of nearest T1	'not significant'
42	LI019-191----	Ringfort - rath	c. 2.7 km to the W of nearest T1	'slight effect'
43	LI019-192----	Ringfort - rath	c. 2.2km to the W of nearest T6	'not significant'
44	LI019-193----	Ringfort - rath	c. 1.9km to the W of nearest T6	'slight effect'
45	LI019-194----	Ringfort - rath	c. 1.7km to the W of nearest T1	'slight effect'
46	LI019-195----	Ringfort - rath	c. 1.6km to the W of nearest T1	'slight effect'
47	LI019-196----	Ringfort - rath	c. 1.5km to the W of nearest T1	'not significant'
48	LI019-198----	Ringfort - rath	c. 1.2km to the W of nearest T6	'not significant'
49	LI019-199----	Ringfort - rath	c. 0.6km to the W of nearest T4	'slight effect'
50	LI019-200001-	Ringfort - rath	c. 0.6km to the W of nearest T4	'slight effect'
51	LI019-200002-	Ringfort - rath	c. 0.6km to the W of nearest T4	'slight effect'

No.	SMR No.	Class	Distance (<i>circa</i>)	Potential Visual Impact Based on Assessment Elements
52	LI019-201----	Ringfort - rath	c. 0.3km to the W of nearest T1	'slight effect'
53	LI019-202----	Ringfort - rath	c. 0.3km to the W of nearest T1	'not significant'
54	LI019-203----	Ringfort - rath	c. 0.8km to the N of nearest T1	'slight effect'
55	LI019-204----	Ringfort - rath	c. 0.4km to the NE of nearest T1	'slight effect'
56	LI019-205----	Enclosure	c. 0.2km to the NE of nearest T4	'moderate effect'
57	LI019-206----	Ringfort - rath	c.0.2km to the SW of nearest T4	'not significant'
58	LI019-207----	Ringfort - rath	c.0.2km to the S of nearest T3	'not significant'
59	LI019-208----	Enclosure	c. 0.3km to the NE of nearest T2	'not significant'
60	LI019-209----	Ringfort - rath	c. 0.3km to the E of nearest T2	'slight effect'
61	LI019-210----	Ringfort - rath	c. 1.7km to the NE of nearest T2	'not significant'
62	LI019-211----	Ringfort - rath	c. 1.4km to the NE of nearest T2	'not significant'
63	LI019-212----	Ringfort - rath	c. 1.3km to the NE of nearest T2	'slight effect'
64	LI019-213----	Ringfort - rath	c. 0.9km to the E of nearest T2	'not significant'
65	LI019-214----	Ringfort - rath	c. 1km to the E of nearest T2	'not significant'
66	LI019-215----	Ringfort - rath	c. 1km to the E of nearest T2	'not significant'
67	LI019-216----	Ringfort - rath	c. 1.6km to the NE of nearest T2	'not significant'
68	LI019-217----	Ringfort - rath	c. 1.8km to the NE of nearest T2	'not significant'
69	LI019-218----	Ringfort - rath	c. 1.3km to the E of nearest T2	'not significant'
70	LI019-219----	Ringfort - rath	c. 1.6km to the E of nearest T2	'not significant'
71	LI019-220----	Mound	c. 1.9km to the NE of nearest T2	'not significant'
72	LI019-221----	Ringfort - rath	c. 2.3km to the NE of nearest T2	'not significant'
73	LI019-222----	Ringfort - rath	c. 2.2km to the NE of nearest T2	'not significant'
74	LI019-223----	Ringfort - rath	c. 2.4km to the NE of nearest T2	'not significant'
75	LI019-224----	Ringfort - rath	c. 2.9km to the NE of nearest T2	'not significant'
76	LI019-225----	Ringfort - rath	c. 2.3km to the E of nearest T2	'not significant'
77	LI019-226----	Ringfort - rath	c. 2.4km to the E of nearest T2	'not significant'

No.	SMR No.	Class	Distance (<i>circa</i>)	Potential Visual Impact Based on Assessment Elements
78	LI019-227----	Ringfort - rath	c. 2.5km to the E of nearest T2	'not significant'
79	LI019-228----	Ringfort - rath	c. 2.5km to the E of nearest T2	'not significant'
80	LI019-229----	Ringfort - rath	c. 2.8km to the NE of nearest T2	'not significant'
81	LI019-232----	Ringfort - rath	c. 2.6km to the E of nearest T2	'slight effect'
82	LI019-235----	Enclosure	c. 1.6km to the N of nearest T1	'not significant'
83	LI019-254----	Fulacht fia	c. 2.3km to the NW of nearest T1	'not significant'
84	LI019-258----	Standing stone	c. 2km to the NW of nearest T1	'slight effect'
85	LI019-259----	Fulacht fia	c. 1.8km to the NW of nearest T1	'not significant'
86	LI019-261----	Fulacht fia	c. 1.3km to the NE of nearest T1	'not significant'
87	LI019-264----	Enclosure	c. 2.7km to the NE of nearest T1	'not significant'
88	LI019-270----	Enclosure	c. 0.1km to the NE of nearest T1	'not significant'
89	LI019-276----	Fulacht fia	c. 2.5km to the W of nearest T1	'not significant'
90	LI019-279----	Children's burial ground	c. 2.5km to the N of nearest T1	'not significant'
91	LI019-280----	Earthwork	c. 2km to the E of nearest T2	'not significant'
92	LI020-096----	Enclosure	c. 2.7km to the E of nearest T2	'not significant'
93	LI020-097----	Enclosure	c. 2.7km to the E of nearest T2	'not significant'
94	LI020-098----	Ringfort - rath	c. 2.8km to the E of nearest T2	'not significant'
95	LI028-006----	Ringfort - rath	c. 2.8km to the W of nearest T6	'slight effect'
96	LI028-007----	Ringfort - rath	c. 2.6km to the W of nearest T6	'not significant'
97	LI028-009----	Mound	c. 2.5km to the W of nearest T6	'not significant'
98	LI028-010----	Ringfort - rath	c. 2.2km to the W of nearest T6	'slight effect'
99	LI028-011----	Ringfort - rath	c. 2.2km to the W of nearest T6	'not significant'
100	LI028-012----	Castle - tower house	c. 2.6km to the SW of nearest T6	'not significant'
101	LI028-013----	Moated site	c. 2.2km to the SW of nearest T6	'not significant'
102	LI028-014----	Ringfort - rath	c. 2.7km to the SW of nearest T6	'not significant'
103	LI028-015----	Ringfort - rath	c. 1.8km to the W of nearest T6	'slight effect'

No.	SMR No.	Class	Distance (<i>circa</i>)	Potential Visual Impact Based on Assessment Elements
104	LI028-016----	Ringfort - rath	c. 2.2km to the SW of nearest T6	'not significant'
105	LI028-017----	Ringfort - rath	c. 1.9km to the SW of nearest T6	'slight effect'
106	LI028-018----	Enclosure	c. 2.5km to the SW of nearest T6	'not significant'
107	LI028-019----	Ringfort - rath	c. 2.7km to the SW of nearest T6	'not significant'
108	LI028-020----	Castle - tower house	c. 1.5km to the W of nearest T6	'moderate'
109	LI028-021----	Ringfort - rath	c. 1.2km to the W of nearest T6	'not significant'
110	LI028-022----	Ringfort - rath	c. 2.3km to the SW of nearest T6	'not significant'
111	LI028-023----	Enclosure	c. 2km to the SW of nearest T6	'not significant'
112	LI028-024----	Ringfort - rath	c. 1.2km to the W of nearest T6	'slight effect'
113	LI028-025----	Ringfort - rath	c. 1.2km to the W of nearest T6	'slight effect'
114	LI028-026----	Ringfort - rath	c. 1.2km to the W of nearest T6	'not significant'
115	LI028-027----	Burial ground	c. 2.1km to the SW of nearest T6	'not significant'
116	LI028-028----	Ringfort - rath	c. 2.8km to the SW of nearest T6	'not significant'
117	LI028-029----	Ringfort - rath	c. 1.2km to the SW of nearest T6	'not significant'
118	LI028-030----	Castle - unclassified	c. 2.4km to the SW of nearest T6	'not significant'
119	LI028-031----	Ringfort - rath	c. 0.9km to the W of nearest T6	'slight effect'
120	LI028-032----	Mound	c. 1.1km to the SW of nearest T6	'not significant'
121	LI028-033----	Ringfort - rath	c. 0.8km to the SW of nearest T6	'not significant'
122	LI028-034----	Ringfort - rath	c. 1.2km to the SW of nearest T6	'not significant'
123	LI028-035----	Ringfort - rath	c. 0.6km to the W of nearest T6	'slight effect'
124	LI028-036----	Ringfort - rath	c. 1.7km to the S of nearest T6	'not significant'
125	LI028-037----	Ritual site - holy well	c. 2km to the S of nearest T6	'not significant'
126	LI028-038----	Ringfort - rath	c. 0.3km to the W of nearest T6	'not significant'
127	LI028-039----	Ringfort - rath	c. 0.3km to the W of nearest T6	'not significant'
128	LI028-040----	Designed landscape - tree-ring	c. 2.1km to the S of nearest T5	'not significant'
129	LI028-041----	Ringfort - rath	c. 0.5km to the SW of nearest T6	'slight effect'

No.	SMR No.	Class	Distance (<i>circa</i>)	Potential Visual Impact Based on Assessment Elements
130	LI028-042----	Ringfort - rath	c. 0.8km to the S of nearest T5	'not significant'
131	LI028-043----	Ringfort - rath	c. 0.2km to the E of T6 and c.0.2km to the W of T5	'moderate effect'
132	LI028-044----	Ringfort - rath	c. 1km to the S of nearest T5	'not significant'
133	LI028-045----	Ringfort - rath	c. 0.9km to the S of nearest T5	'not significant'
134	LI028-046----	Ringfort - rath	c. 1.7km to the S of nearest T5	'not significant'
135	LI028-047----	Ringfort - rath	c. 0.6km to the S of nearest T5	'not significant'
136	LI028-048----	Ringfort - rath	c. 1.6km to the S of nearest T5	'not significant'
137	LI028-049----	Ringfort - rath	c. 0.4km to the SE of nearest T5	'slight effect'
138	LI028-050----	Ringfort - rath	c. 1km to the S of nearest T5	'slight effect'
139	LI028-051----	Ringfort - rath	c. 0.7km to the SE of nearest T5	'slight effect'
140	LI028-052----	Ringfort - cashel	c. 0.3km to the E of nearest T3	'moderate effect'
141	LI028-053----	Ringfort - rath	c. 1.5km to the SE of nearest T5	'slight effect'
142	LI028-054----	Ringfort - rath	c. 1.2km to the SE of nearest T5	'slight effect'
143	LI028-055----	Ringfort - rath	c. 1.2km to the SE of nearest T5	'not significant'
144	LI028-056----	Ringfort - rath	c. 1km to the SE of nearest T5	'not significant'
145	LI028-057----	Ringfort - rath	c. 1.1km to the SE of nearest T5	'not significant'
146	LI028-058----	Ringfort - rath	c. 2.1km to the SE of nearest T5	'slight effect'
147	LI028-059----	Ringfort - rath	c. 1.2km to the SE of nearest T5	'slight effect'
148	LI028-060----	Ringfort - rath	c. 1.1km to the SE of nearest T2	'not significant'
149	LI028-061----	Ringfort - rath	c. 1.5km to the SE of nearest T5	'not significant'
150	LI028-062----	Ringfort - rath	c. 1.5km to the SE of nearest T5	'not significant'
151	LI028-063----	Ringfort - rath	c. 2.5km to the SE of nearest T5	'not significant'
152	LI028-064----	Ringfort - rath	c. 1.8km to the SE of nearest T3	'slight effect'
153	LI028-065----	Castle - tower house	c. 1.7km to the SE of nearest T2	'slight effect'
154	LI028-065001-	Bawn	c. 1.7km to the SE of nearest T2	'slight effect'
155	LI028-066001-	Ecclesiastical enclosure	c. 2.2km to the SE of nearest T5	'slight effect'

No.	SMR No.	Class	Distance (<i>circa</i>)	Potential Visual Impact Based on Assessment Elements
156	LI028-066002-	Church	c. 2.2km to the SE of nearest T5	'slight effect'
157	LI028-066003-	Graveyard	c. 2.2km to the SE of nearest T5	'slight effect'
158	LI028-066004-	Road - hollow-way	c. 2km to the SE of nearest T5	'not significant'
159	LI028-067----	Ritual site - holy well	c. 2.1km to the SE of nearest T5	'not significant'
160	LI028-068----	Ringfort - rath	c. 2.1km to the E of nearest T3	'slight effect'
161	LI028-069----	Ringfort - rath	c. 2.9km to the SE of nearest T5	'not significant'
162	LI028-070----	Ringfort - rath	c. 2.6km to the SE of nearest T5	'not significant'
163	LI028-071----	Ringfort - rath	c. 2.4km to the SE of nearest T2	'not significant'
164	LI028-072----	Ringfort - rath	c. 2.5km to the SE of nearest T2	'not significant'
165	LI028-073----	Enclosure	c. 2.5km to the E of nearest T2	'not significant'
166	LI028-074----	Ringfort - rath	c. 2.9km to the SE of nearest T5	'not significant'
167	LI028-075----	Ringfort - rath	c. 2.7km to the SE of nearest T2	'not significant'
168	LI028-104----	Ringfort - rath	c. 3km to the SW of nearest T6	'not significant'
169	LI028-105----	Redundant record	N/A	N/A
170	LI028-106----	Designed landscape - tree-ring	c. 3km to the SW of nearest T6	'not significant'
171	LI028-108----	Ringfort - rath	c. 1.9km to the S of nearest T5	'not significant'
172	LI028-111----	Ringfort - rath	c. 2.7km to the S of nearest T5	'not significant'
173	LI028-112----	Ringfort - rath	c. 2.9km to the S of nearest T5	'not significant'
174	LI028-113----	Ringfort - rath	c. 2.8km to the SE of nearest T5	'not significant'
175	LI028-114001-	Church	c. 2.9km to the SE of nearest T5	'slight effect'
176	LI028-114002-	Graveyard	c. 2.9km to the SE of nearest T5	'slight effect'
177	LI028-154----	Ringfort - rath	c. 2.5km to the SW of nearest T6	'slight effect'
178	LI028-159----	Ringfort - rath	c. 1km to the SE of nearest T5	'slight effect'
179	LI028-160----	Ringfort - rath	c. 0.8km to the S of nearest T6	'slight effect'
180	LI028-163----	Redundant record	N/A	N/A
181	LI028-176----	Church	c. 1.5km to the S of nearest T5	'not significant'
182	LI028-179----	Standing stone	c. 1.2km to the SE of nearest T2	'slight effect'

No.	SMR No.	Class	Distance (<i>circa</i>)	Potential Visual Impact Based on Assessment Elements
183	LI028-181----	Standing stone	c. 2.1km to the SW of nearest T6	'not significant'
184	LI028-182----	Ringfort - rath	c. 0.2km to the NE of T5 and c. 0.2km to the S of T3	'not significant'
185	LI028-183----	Ringfort - rath	c. 1.1km to the S of nearest T5	'not significant'
186	LI028-184----	Enclosure	c. 2.7km to the S of nearest T5	'not significant'
187	LI028-185----	Enclosure	c. 2.3km to the W of nearest T6	'not significant'
188	LI028-186----	Ringfort - rath	c. 2.4km to the SE of nearest T5	'not significant'
189	LI028-192----	Enclosure	c. 2.8km to the SE of nearest T2	'not significant'
190	LI028-193----	Enclosure	c. 1km to the S of nearest T5	'not significant'
191	LI028-195----	Earthwork	c. 1.7km to the SE of nearest T5	'not significant'
192	LI029-001----	Ringfort - rath	c. 3km to the E of nearest T5	'slight effect'
193	LI029-002----	Ringfort - rath	c. 2.8km to the E of nearest T2	'not significant'
194	LI029-004----	Ringfort - rath	c. 3km to the E of nearest T2	'not significant'

Recently Recorded Enclosure Site in Vicinity of the BWF

There will be a visual impact to the recently discovered possible enclosure located c.200m from turbine T4. The discovered feature consists of a low above ground level bank and platform and is partially leveled on the northern part. Considering that and the fact that the possible enclosure is located on private land, the impact is classified as '**not significant**'.

Built Heritage including RPS / NIAH 3km of the Proposed Turbines

Eight RPS structures (87, 204, 205 313, 448, 510, 654 and 655) are located within the 3km radius from the proposed BWF turbines and range in distance from 0.6km to 3km. The two nearest RPS are Mangan's House (448) c.0.7m NW of turbine T1 and Ballyegny House c.0.6km W of turbine T3. The visual impact on the two RPS's is classified as '**slight**' due to the condition, location and access to the structures. The same criteria were used to assess the other RPS's which range in distance from 1km to 3km and based on those elements, the visual impact is classified as '**not significant**'.

Seven other structures listed in the NIAH but not recorded as RPS's, are situated within the 3km study area. The majority of these are located 2km or more from the proposed turbines. Based on the analysis of the condition, access and settings of the structures, the visual impact is classified as '**not significant**'.

Cultural Heritage Sites

- There will be a '**slight**' visual impact to Waterville House situated c.180m NW from proposed turbine T6.
- Visual impacts to the other cultural heritage sites within the BWF and its vicinity is classified as '**not significant**' as no trace of the sites survive overground.

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13.7.5 Construction Phase

Summary of Impacts

Indirect

No indirect effects were identified which would occur at the construction stage.

Direct

- No direct impact will occur at the construction phase of the BWF on any known archaeological monuments or sites.
- No direct impacts will occur at the construction phase to any National Monuments in State Care, or RPS's or NIAH structures.
- Given the scale of the proposed construction works there is a possibility that construction of the BWF will impact on potential unknown subsurface archaeological features, deposits or artefacts. This impact is assessed as **'moderate'** based on (1) the 15 recorded monuments within the limits of the BWF and its vicinity, (2) the large number of recorded sites within the wider study area, (3) the results of geophysical survey.
- In the wider cultural heritage context, there is a possibility that construction works could accidentally impact unknown sub-surface remains of pre-famine structures. This impact is classified as **'slight to moderate'**.
- In a wider cultural heritage context, the internal grid connection / access route, temporary access and external grid connection (Option A) will cross townlands/parishes/barony boundaries several times. The impacts here were assessed as varying from **'not significant'** to **'moderate'**.

13.7.6 Operational Phase

Summary of Impacts

Indirect

- Visual impacts of the proposed turbines on National Monuments in State Care in the 10km radius is classified from **'not significant'** to **'slight'**.
- Visual impacts of the proposed turbines on all recorded monuments situated within the 3km radius from BWF is classified from **'not significant'** to **'moderate'**.
- Visual impacts on the 15 recorded monuments located within the proposed BWF EIAR study area vary from **'not significant'** to **'moderate'**.

Direct

- No direct effects will occur during the operational phase of the proposed BWF.

13.7.7 Demolition or Decommissioning Phase (If Relevant)

There will be no significant potential impacts on the archaeological, architectural and cultural heritage environment during the decommissioning of the proposed Ballynisky Wind Farm development. Potential subsurface archaeological issues will have been adequately resolved by mitigation measures in advance of the construction phase of the project i.e., archaeological testing and monitoring of ground works associated with the construction phase of the wind farm development and associated grid connection. Similarly, no potential impacts to build heritage such as NIAH or RPS structures as a result of the decommissioning phase of the development are anticipated.

13.7.8 Cumulative Impacts

There are fifteen existing or permitted WF within a 20km radius zone of the proposed Ballynisky WF (see **Chapter 2**). Cumulative impact is defined as “*The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects.*” (Environmental Protection Agency 2022, 52). Cumulative impacts encompass the combined effects of multiple developments or activities on a range of receptors. In this case, the receptors are the archaeological monuments and architectural/cultural heritage sites in the immediate vicinity of the proposed development.

Cumulative effects at the Construction and Operational Stages of the Proposed Project were considered in the context of other existing and permitted Wind Farms within 20km radius zone of proposed Ballynisky WF.

Cumulative Effects (Construction Phase)

Cumulative effects during the construction phase refers only to the direct effects which consist of ground disturbance. Mitigation will consist of pre-development archaeological testing and archaeological monitoring of ground works associated with the proposed Ballynisky WF during the construction phase was carried out. No effects to recorded monuments, protected structures or NIAH structures are anticipated to occur during the construction stage of the proposed Ballynisky WF. With this considered, cumulative direct effects to the archaeological and cultural heritage sites as a result of the development are not identified.

Cumulative Effects (Operational Phase)

The addition of other projects to the proposed Ballynisky Wind Farm development was considered in order to assess Cumulative Effects. This included all other wind farms within 20km of the development. Indirect impacts on setting occur at the operational stage of the development (when turbines are operational). In this regard in order to assess overall cumulative effects on archaeology and cultural heritage, the existing turbines are considered.

In all cases, however, impacts to the immediate setting of these monuments are not identified given the distance of the turbines from same. In this regard impacts to the wider setting of the National Monuments, Recorded Monuments, NIAH structures and RPS are acknowledged. Taking into consideration the number and location of existing and permitted wind farms within the 20km zone and the distance of the majority from the proposed Ballynisky WF, these cumulative effects are assessed as ‘*Slight*’ to ‘*Not Significant*’.

13.7.9 Interaction with other Environmental Topics

Not relevant.

13.8 Mitigation

13.8.1 Construction Phase

- Exclusion zones (reflecting RMP zone combined with ZON) will be established on the ground around recorded monuments: ringfort LI019-132, enclosure LI019-270, ringfort LI028-182, ringfort LI028-043, ringfort LI028-039 and ringfort LI028-038 to avoid accidental damages to the monuments. No heavy machinery, tree felling, or any groundworks can be undertaken within the exclusion zones.
- Following the results of the geophysical survey, a program of archaeological test excavation trenching, under licence from NMS, will be undertaken (if conditioned as part of a grant of planning permission) to establish the veracity of anomalies recorded in the geophysical survey. Furthermore, archaeological test excavations will also be undertaken (if conditioned as part of a grant of planning permission) across the limits of the proposed core wind farm components. It is proposed to excavate a series of 157 test trenches (T1-T157) on the footprint

of wind farm components and locations of positive geophysical anomalies (**Figure 13-14**). The scope of the test excavations will be agreed following consultation / liaison with the Limerick City & County Council Archaeologist.

- Following the results of the targeted geophysical survey and follow-on licensed testing, archaeological monitoring of archaeological sensitive areas will be undertaken of elements of the proposed core wind farm components under the license from NMS.
- Groundworks associated with the external grid connection (Option A) with Carrons Substation within the greenfield sections will be archaeologically tested in advance under licence from the NMS. It is proposed to excavate a series of 7 test trenches (T1-T7) within the greenfield section of proposed grid connection (Option A) (**Figure 13-15**). The scope of the test excavations will be agreed following consultation / liaison with the Limerick City & County Council Archaeologist.
- A targeted section of the grid connection (Option A) along the existing road within the ZON of the recorded graveyard LI019-131002 will be archaeologically monitored under the licence from the NMS. This section will extend within the ZON of the graveyard (LI019-131002) and be physically established prior the construction stage.
- Groundworks associated with cuttings through the townland / parish/ barony boundaries will be kept to a minimum. The cutting locations of these boundaries will be archaeologically recorded and all boundary cuttings shall be archaeologically monitored with photographs and written descriptions.



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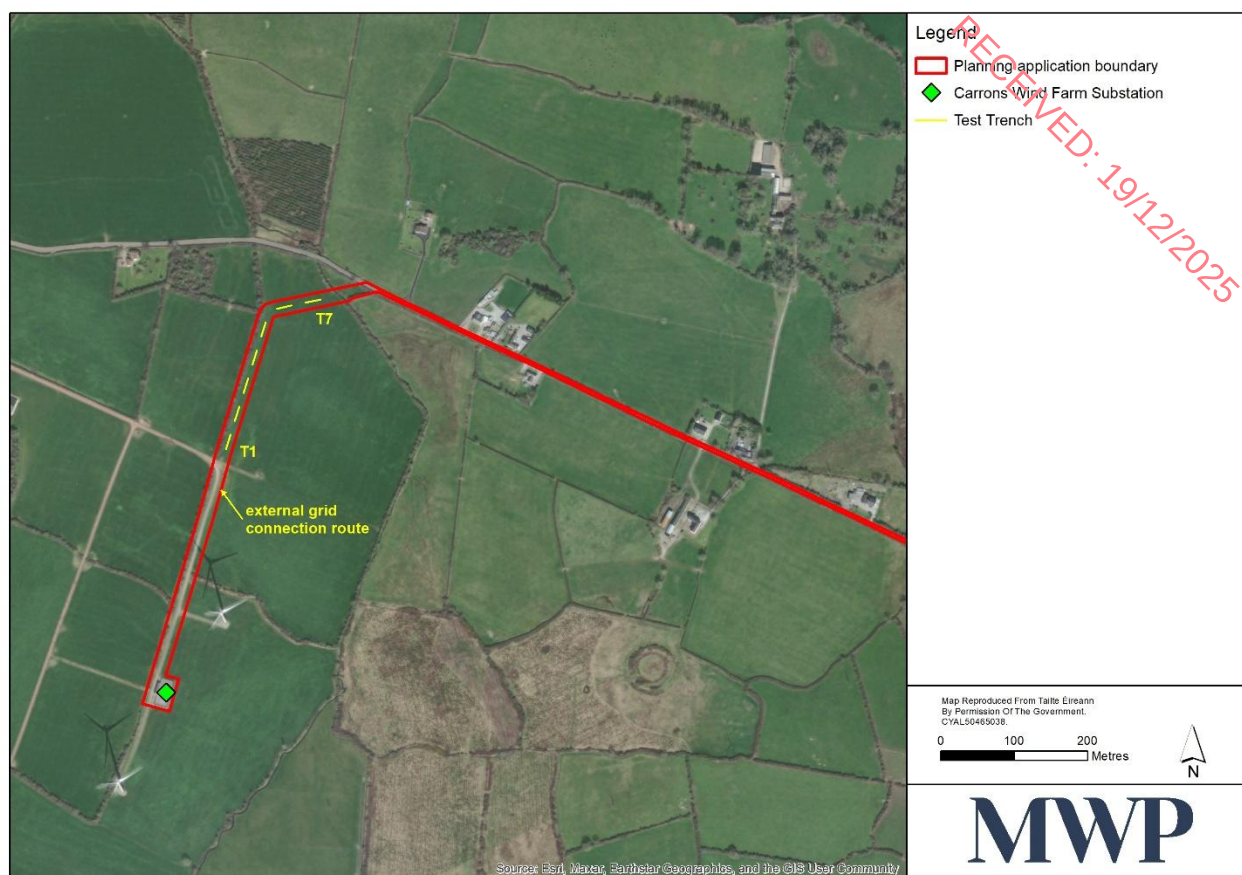


Figure 13-15: Proposed Trenching Layout within Greenfield of External Grid Connection Route (Option A)

13.8.2 Operational Phase

There are no archaeological effects anticipated during the operational phase of the proposed turbines. Potential subsurface archaeological issues will have been adequately resolved by mitigation measures in advance of the construction phase of the project, i.e., pre-development testing and archaeological monitoring of ground works associated with the construction phase of the wind farm development.

13.8.3 Decommissioning Phase

There are no archaeological impacts anticipated in the course of the de-commissioning of the proposed turbines. Potential subsurface archaeological issues will have been adequately resolved by mitigation measures in advance of the construction phase of the project, i.e., pre-development testing and archaeological monitoring of ground works associated with the construction phase of the wind farm development. The decommissioning process will utilize all existing internal site tracks and public roads and will not involve any further ground disturbance. The turbines removal will erase visual impact on recorded monuments.

All townland / parish / barony boundaries impacted by the construction of the proposed BWF development will revert to their pre-construction phase.

13.8.4 Cumulative

Not relevant.

13.9 Residual Impacts

Residual effects are the final or intended effects which occur after the proposed mitigation measures have been implemented. They refer to the degree of change that will occur after the proposed mitigation measures have taken effect.

If during the proposed archaeological monitoring and testing, previously unrecorded sites/features are discovered, then preservation '*in situ*' or preservation by record will be proposed. In that context preservation '*in situ*' reduces the effect to '**not significant**'. When preservation '*in situ*' is not an option, then preservation by archaeological excavation and record will reduce the effect on unrecorded sites to '**slight**'.

Proposed archaeological monitoring and the full record of potential remains of vernacular structures, will reduce the effect to '**not significant**'.

Proposed mitigations to the townland boundaries consisting of archaeological monitoring and reverting the boundaries to pre-construction phase status will reduce the effect to '**slight**'.

Indirect effect during the operation phase which may cause change to the surroundings of the archaeological or architectural heritage resource will be reversed following the decommissioning phase.

13.10 References

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Down Survey Map c. 1655 (www.downsurvey.tcd.ie)

1st Edition 6" OS 1840-42 map

2nd Edition 25" OS 1893 map

Electronic sources

www.archaeology.ie – National Monuments Service online sites and monuments records database

www.downsurvey.tcd.ie - Down Survey Map c.1655

www.excavations.ie – Summary of archaeological excavation from 1970–2023

www.googleearth.com – Satellite imagery of the proposed development area

www.heritagemaps.ie – The Heritage Council web-based spatial data viewer which focuses on the built, cultural and natural heritage

www.logainm.ie –Placenames Database of Ireland launched by *Fiontar agus Scoil na Gaeilge* and the DoCHG.

www.osiemaps.ie – Ordnance Survey of Ireland Ortho-imagery from 2005, 2000 & 1995