



CHAPTER 11 CULTURAL HERITAGE

Brittas Wind Farm Project

Brittas Wind Farm Ltd

November 2024

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MWP, Engineering and Environmental Consultants

Address: Park House, Bessboro Road, Blackrock, Cork, T12 X251, Ireland

www.mwp.ie



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11 . Cultural Heritage

11.1 Introduction

This chapter considers the potential effects on relevant cultural heritage assets arising from the Proposed Development. A full description of the Proposed Development, development lands and all associated project elements is provided in **Chapter 2 Description of the Proposed Development** of this **EIAR**. The nature and probability of effects on cultural heritage assets arising from the overall project has been assessed. The assessment comprises:

- A review of the existing receiving environment;
- Prediction and characterisation of likely effects;
- Evaluation of effects significance; and
- Consideration of mitigation measures, where appropriate.

11.1.1 Competency of Assessor

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 28 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 infrastructural projects, wind and solar farms, roadways, water and sewerage schemes, pipelines, inter-connector telecom and electrical cabling both terrestrial and undersea, coastal defence 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 financed by National Geographic. Laurence has completed over forty archaeological / cultural sections for Environmental Impact Assessment Reports (EIAR) and Archaeological Impact Assessments (AIA), along with licensed excavations and monitoring in Ireland relating to renewable energy developments. Since 1999, Laurence Dunne has completed over thirty wind farm projects. In that context, the various wind farm projects involved all facets of the planning process: EIAR, 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.

11.2 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 Wind Farm site in March 2023 and May 2024; (3) inspection of the Turbine Delivery Route (TDR) in March 2023; (4) inspection of the Grid Connection Route (GCR) in May 2024.

11.2.1 Desktop Study

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:

- Primary study area extends within the Red Line Boundary and the assessment consists of: (1) assessment of potential physical direct effect to the recorded monuments in vicinity; (2) assessment of potential physical direct effects to the cultural heritage structures depicted on historic mapping but not listed in National Inventory of Architectural Heritage (NIAH) or as Recorded Protected Structures (RPS); (3) assessment of potential direct physical effects to the unknown sub-surface archaeological and cultural heritage assets;
- Possible direct physical effect assessment for the Grid Connection Route (GCR) and Turbine Delivery Route (TDR) was established within c.120m wide corridor based on typically 60m Zone of Notification of the recorded monuments in the area;
- Possible direct physical effect assessment for internal grid connection/access track to undesignated cultural heritage sites was undertaken within c.100m wide corridor. This assessment corridor was established on possibility that not all locations of heritage sites were mapped at exact location as in present day;
- The assessment of indirect effects can be subjective and as such is a matter of professional experience. The below study areas utilised to assess the indirect effects (considering sensitivity of cultural heritage assets) are based on professional judgment:
 - To assess potential indirect effects for UNESCO World Heritage Sites (including the Tentative List sites) c.20km distance from the proposed turbines was considered;
 - To assess potential indirect effects for National Monuments in State Care (Guardianship and Ownership) and Preservation Order Sites c.10km distance from proposed turbines was considered;
 - To assess potential indirect effects on Sites and Monuments Records (SMR) / Record of Monuments and Places (RMP) c.3km distance from proposed turbines was considered; and
 - To assess potential indirect effects for NIAH structures and Recorded Protected Structures (RPS) c.3km distance from the proposed turbines was considered.
- The assessment of potential visual setting on cultural heritage was undertaken using both the Zone of Theoretical Visibility (ZTV) map in the Landscape and Visual Impact Assessment (LVIA), as presented in **Chapter 15 – Landscape and Visuals** of this EIAR, and also photomontage / wireline technology from specific cultural heritage assets.

During the desktop assessment 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 and 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 - accessed in April 2024);

- **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 - assessed in June 2024);

- **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;

- The Development Plan

The Development Plan for County Tipperary (2022-2028) which contains a catalogue of all the Recorded Protected Structures (RPS) 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 May 2024 to establish if any archaeological investigations had been carried out within to the area of the Proposed Wind Farm (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 July 2023 (www.logainm.ie);

- Cartographic sources

Several historic maps were examined including Down Survey (c. 1655), 1st Edition Ordnance Survey 6" map (1840s) and 2nd Edition 25" (1900s) maps of Co. Tipperary;

- 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 (2004-2022), and Bing Maps websites.

Furthermore, targeted, low flown, unmanned aerial vehicle (UAV) survey imagery of the Proposed Project was undertaken during the field inspection in March 2023;

- 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 Proposed Wind Farm and the grid connection route (GCR) was carried out in March 2023 and May 2024. Inspection of the turbine delivery route (TDR) was completed in March 2023. 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.

11.2.2 Guidelines and Best Practice

- Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023 (Commencement) Order 2024, (SI No. 252 of 2024; as amended Heritage Act, 1995 and 2018, as amended;
- 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 County Tipperary 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;
- The Handbook of the National Inventory of Architectural Heritage (NIAH) of March 2021.

11.2.3 Scope of Assessment

Table 11-1 outlines the issues which the EPA guidance documents suggest may be examined as part of the material assets effect assessment.

Table 11-1: Issues relevant to Cultural Heritage

Topic Area	Potential Issues
Archaeology	Potential of physical effect to unknown sub-surface features Potential of visual effect to the recorded monuments Potential of visual effect to the National Monuments
Architectural heritage	Potential of physical effect to cultural heritage structures depicted on historic mapping but not listed as protected structures Potential of cultural visual effect to protected structures and structures listed in NIAH
Folklore and history	N/A

Accordingly, the scope of this assessment is made with respect to these topic areas and considers the effects of the construction, operation and decommissioning of the Proposed Development in terms of how the proposal could affect archaeology and architectural heritage.

11.2.3.1 Assessment Criteria

Determination of the significance of an effect will be made in accordance with the terminology outlined in the EPA Draft Guidelines on Information to be contained in Environmental Impact Assessment Reports (2022) as set out in Table 11-2 below.

Table 11-2: EPA (2022) Criteria for Assessing Effects of developments

Criteria	Term	Description
Quality of Effects	Positive	A change which improves the quality of the environment
	Neutral	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error
	Negative /adverse	A change which reduces the quality of the environment
Significance of Effects	Imperceptible	An effect capable of measurement but without significant consequence
	Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences
	Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
	Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends
	Significant	An effect which, by its character, magnitude duration or intensity alters a sensitive aspect of the environment
	Very Significant	An effect which, by its character, magnitude duration or intensity alters most of a sensitive aspect of the environment
	Profound	An effect which obliterates sensitive characteristics
Extent of Effects	Describe the size of the area, the number of sites and the proportion of a population affected by an effect.	
Context	Conform	Where the extent, duration or frequency conforms to established (baseline) conditions (is it the biggest, longest effect ever?)

Criteria	Term	Description
	Contrast	<i>Where the extent, duration or frequency contrasts to established (baseline) conditions (is it the biggest, longest effect ever?)</i>
Duration of Effect	Momentary	<i>Effects lasting from seconds to minutes</i>
	Brief	<i>Effects lasting less than a day</i>
	Temporary	<i>Effects lasting less than a year</i>
	Short-term	<i>Effects lasting one to seven years</i>
	Medium-term	<i>Effects lasting seven to fifteen years</i>
	Long-term	<i>Effects lasting fifteen to sixty years</i>
	Permanent	<i>Effects lasting over sixty years</i>
	Reversible	<i>Effects than can be undone e.g. through remediation or restoration</i>
	Frequency	<i>How often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)</i>
Likelihood of Effects	Likely	<i>Where the extent, duration or frequency conforms to established (baseline) conditions (is it the biggest, longest effect ever?)</i>
	Unlikely	<i>The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.</i>
Types of Effects	Indirect	<i>Effects on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.</i>
	Cumulative	<i>The addition of many minor or significant effects, including effects of other projects, to create a larger, more significant effect.</i>
	‘Do Nothing’	<i>The environment as it would be in the future should the subject project not be carried out.</i>
	‘Worst case’	<i>The effects arising from a project in the case where mitigation measures substantially fail.</i>
	Indeterminable	<i>When the full consequences of a change in the environment cannot be described.</i>
	Irreversible	<i>When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.</i>
	Residual	<i>The degree of environmental change that will occur after the proposed mitigation measures have taken effect.</i>
	Synergistic	<i>Where the resultant effect is of greater significance than the sum of its constituents, (e.g. Combination of SOx and NOx to produce smog).</i>

Source: EPA Draft Guidelines on Information to be contained in Environmental Impact Assessment Reports (2022)

11.2.4 Statement on Limitations and Difficulties Encountered

No significant limitations were encountered during field work. It is considered that the assessment contained in this chapter is representative of the proposed development.

11.3 Baseline Environment

11.3.1 UNESCO World Heritage Sites including the Tentative List

No UNESCO World Heritage Sites (WHS) or those on the Tentative List are located within 20km of the nearest proposed turbine. The closest site, Rock of Cashel, which as one of the Royal Sites of Ireland is on the Tentative List from 2010 is situated over 21km to the S from the nearest turbine T10. This impressive cluster of medieval buildings consists of over 60 recorded monuments including a round tower, a high cross, a Romanesque chapel, a Gothic cathedral, an abbey, the Hall of the Vicars Choral, a fifteenth-century Tower House and several graveslabs.

11.3.2 National Monuments

There are no National Monuments in State Care within the Proposed Project. Two National Monuments are located within c.10km radius from the Proposed Wind Farm. These are: two early medieval churches at Leigh townland (National Monument No. 266) and Holycross Abbey (National Monument No. 121) (**Figure 11-1**).

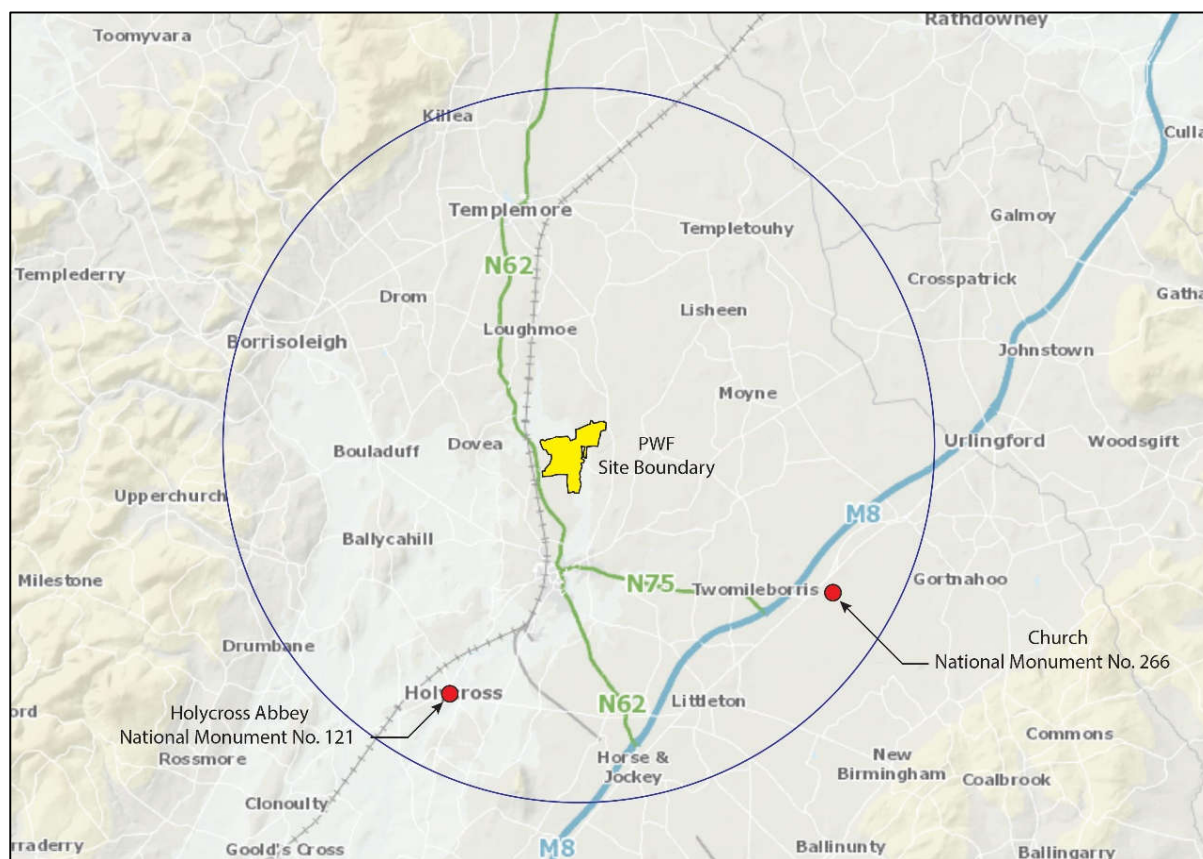


Figure 11-1: National Monuments in State Care identified within c.10km radius from the Proposed Wind Farm (www.archaeology.ie).

11.3.2.1 Two Churches (National Monument No. 266)

The two churches are situated within an early, probably 6th century ecclesiastical site (TN042-055) at Leigh. Description of first church (TN042-055003) in NMS database states that *'this early medieval church was built on a raised circular platform and is listed in the ecclesiastical taxation of the Diocese of Cashel in 1302 where it is*

referred to as 'Burgleth' (Cal. doc. Ire. vol. 5, 284). A doorway with some reused Romanesque stones occupies the W end of the N wall with a sheela-na-gig (TN042-055004-) carved on the E impost of the doorway' (www.archaeology.ie). The second small rectangular church (TN042-055001) built with coursed limestone rubble on a protruding basal plinth is located c.70m N from the first one. Between the two churches there is a round tower TN042-055002 and seventeenth-century dated settlement is recorded S of them.

This entire ecclesiastical complex is located c10km to the SE from the nearest turbine T10 and is accessible and open for the public.

11.3.2.2 Holycross Abbey (National Monument No. 121)

Following the description from NMS database, 'this Cistercian abbey was founded in 1180 possibly on the site of an earlier Benedictine abbey founded by Donal O'Brien, King of Limerick in 1169 (Gwynn and Hadcock 1970, 134). In 1563 the abbey was granted to Gerald Earl of Ormond (ibid., 134). In the early to mid-seventeenth century an attempt was made to revive the Cistercian community but this was eventually suppressed by the Cromwellians (Stalley 1987, 29). The last professed monk from Holycross died in 1752 (Gwynn and Hadcock 1970, 135). The importance of the abbey was based on its acquisition of a fragment of the true cross which it is said was given to Muirchertach O'Brien c. 1110 by Pope Paschal II (ibid.). Holycross was granted a charter in 1185-6 by its founder Domhnall Ua Briain, King of Limerick (Stalley 1987, 245). The present remains of this well-preserved multi-period abbey, with the abbey well to the E (TN047-030004-), consist of a nave and chancel church with two chapels in each transept, a low crossing-tower with a barrel-vaulted sacristy and a small chapterhouse in the E range of buildings. There is a well-preserved cloister walk with a partially rebuilt cloister arcade to the S of the abbey with the domestic buildings in the W range and other buildings in the E range commonly referred to as the infirmary, the abbot's lodgings or the guesthouse (ibid., 245-6)(...) Also within the church are a large number of sixteenth/seventeenth-century grave slabs, while others were moved during the renovation to the graveyard immediately N of the abbey. Additional fragments of grave slabs and architectural fragments are currently stored in the guesthouse, SE of the abbey church. Associated with the church are a number of domestic and residential buildings (...)' (Ibid).

The Holycross Abbey is located c.8km to the SW of from nearest proposed turbine and it's a large tourist's attraction at the present day.

11.3.3 Recorded monuments within the Proposed Project site.

Examination of the Sites and Monuments Records (SMR) / Record of Monuments and Places (RMP) listed four monuments within the primary study area (Red Line Boundary). These are: two ringforts: TN035-075, TN035-076; and two enclosures: TN041-008 and TN041-087 (**Figure 11-2**).

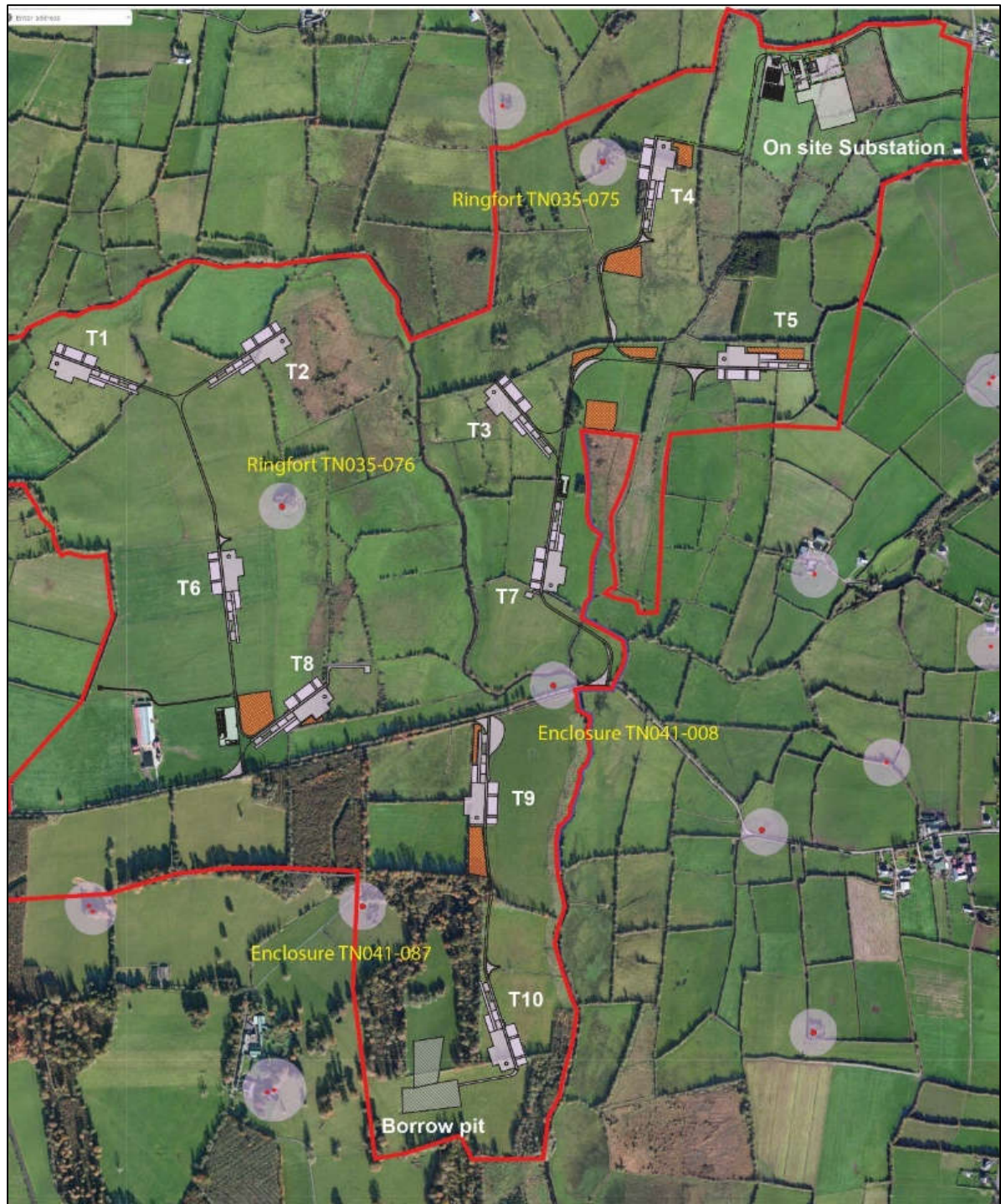


Figure 11-2: Recorded monuments within the Proposed Wind Farm (Red Line Boundary)
(www.archaeology.ie).

Ringfort TN035-075

The ringfort is situated at the northernmost limits of the Proposed Wind Farm c.140m WNW from the nearest turbine T4. Circular in plan, the fort is depicted on both (1st and 2nd) editions of historic OS maps. Following the description from NMS database the ringfort is '*situated on the gentle E-facing slope of a low rise of ground in undulating pasture. A raised circular area (diam. 34m E-W) defined by a scarp (H 0.8-1m) and outer fosse (Wth 1.7m; D 0.7m) with no entrance feature visible*' (www.archaeology.ie).

Inspection of the monument during field walkover revealed no changes to the description above. A bank of the ringfort as well as interior is highly overgrown with a mature trees and bushes and consequently there is a limited access to the fort. The outer fosse of is still visible and no obvious evidence of entrance was found (**Plate 11-1**).



Plate 11-1: Ringfort TN035-075. View from W (LDARCH 2023).

Ringfort TN035-076

The ringfort is located more or less in the centre of the Proposed Wind Farm c. 270m NE from the nearest turbine T6. It is clearly depicted as a circular enclosure on both historic (1st and 2nd Edition) OS maps. According to the description from NMS database, the ringfort '*is situated on flat poorly drained land with extensive views. A roughly circular area (diam. 42m E-W) enclosed by a poorly preserved earth and stone bank (Wth. 3m; int. H 0.2m; ext. H 1.45m) and a water-filled outer fosse (Wth 1.9m; D 0.75m) with no clear entrance feature visible. Field clearance debris is dumped around the perimeter of the site at S which obscures the enclosing bank*' (Ibid).

Inspection of the monument didn't show any changes to the description above. The monument is overgrown by the mature trees but there is easy access to the interior (**Plate 11-2**).



Plate 11-2: Ringfort TN035-076. View from SW (LDARCH 2023).

Enclosure TN041-008

The enclosure is situated c.250m S from the nearest turbine T7. Following the description from NMS, the enclosure is 'located on a gentle N-facing slope on a slight rise which slopes down to the River Suir, immediately N of the site. Marked as a small oval enclosure defined by trees on the 1st Edition (1843) OS 6-inch map and as a small hachured enclosure on 1952-3 revision. Clearly visible as an oval enclosure on an aerial photograph taken in 1973 (GSIAP, S 463/2). There are some undulations in the area but no definable pattern emerges'. (Ibid)

Site walk over combined with a drone survey revealed no clearly visible traces of the monument above the ground (**Plate 11-3**).



Plate 11-3: Location of enclosure TN041-008. View from SE (LDARCH 2023).

Enclosure TN041-087

The enclosure is located within the SW part of the Proposed Wind Farm c.340m SW from the nearest turbine T9. It is not depicted on any of the historical OS maps and was only identified on aerial photograph taken on 11/8/1996 by Michael Moore (ASIAP 43(25-27)) as 'barely visible remains of a circular enclosure (approx. diam. 25m N-S ; 20m E-W) defined by a dark vegetation cropmark (Wth 3m) enclosing a slightly raised hillock (H 0.2m) (www.archaeology.ie).

Inspection of the monument revealed no clear evidence of the enclosure at this location above the ground. Site of the monument is covered by small but mature trees with easy access to the interior. No bank or fosse was identified. Large depression in the centre with frequent bedrock exposed was noted, which may suggest that site was used for the local quarrying in the past (**Plate 11-4**).



Plate 11-4: Enclosure TN041-087. View from SW.

11.3.3.1 Recorded monuments within c.3km of the nearest proposed turbine.

Sites and Monuments Records (SMR) / Record of Monuments and Places (RMP) revealed 86 recorded monuments located within c.3km of the nearest proposed turbine (**Figure 11-3, Table 11-3**), including the four monuments within the Proposed Wind Farm discussed above in **Section 11.3.3**.

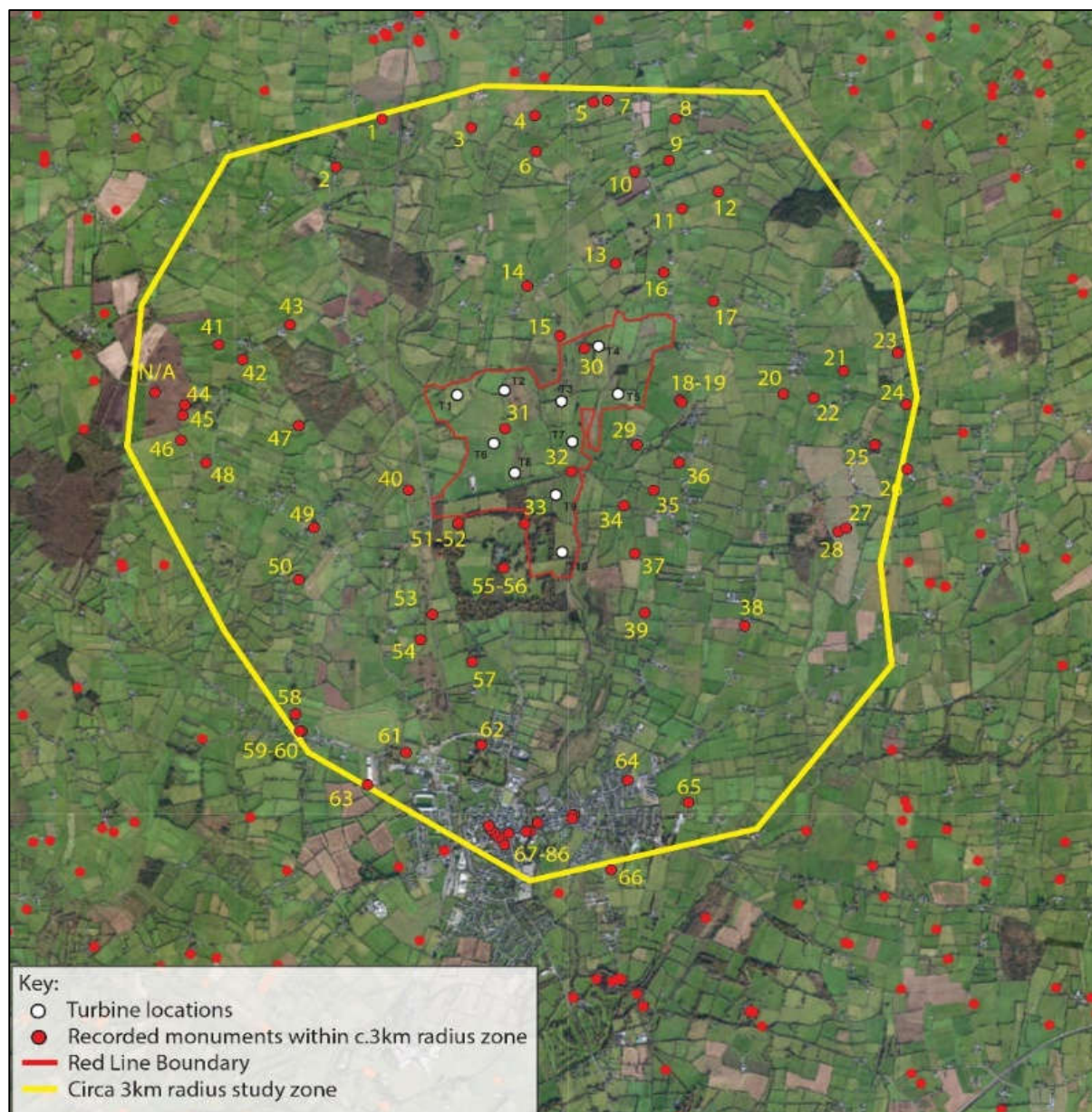


Figure 11-3: Recorded monuments (red dots) within c.3km of the nearest turbine (www.archaeology.ie).

Table 11-3: Recorded monuments within c.3km of the nearest turbine.

Map No.	SMR No.	Class	Townland	ITM (E)	ITM (N)	Distance to the Nearest Turbine
1	TN035-032----	Enclosure	TINVOHER	611341	666268	c. 3.0 km to the NW from T4 & T2
2	TN035-052----	Enclosure	CLONDOTY	610875	665768	c. 2.7 km to the NW from T1
3	TN035-036----	Ringfort - rath	GRAIGUEFRAHANE	612254	666176	c. 2.6 km to the NW from T4
4	TN035-039----	Enclosure	CURRAGHMORE (Loughmoe East Par.)	612898	666311	c. 2.5 km to the N from T4
5	TN035-040----	Enclosure	CLOGHARAILY BEG	613500	666457	c. 2.6 km to the N from T4
6	TN035-053----	Ringfort - rath	CURRAGHMORE (Loughmoe East Par.)	612907	665922	c. 2 km to the N from T4
7	TN035-041----	Moated site	CLOGHARAILY BEG	613641	666462	c. 2.6 km to the N from T4

Map No.	SMR No.	Class	Townland	ITM (E)	ITM (N)	Distance to the Nearest Turbine
8	TN035-046----	Enclosure	CLOGHARAILY MORE,DERRY (Loughmoe East Par.)	614335	666268	c. 2.5 km to the NE from T4
9	TN035-057----	Ringfort - rath	DERRY (Loughmoe East Par.)	614258	665827	c. 2 km to the NE from T4
10	TN035-054----	Enclosure	BARONSTOWN	613925	665715	c. 1.9 km to the N from T4
11	TN035-058----	Enclosure	BARONSTOWN	614401	665316	c. 1.6 km to the NE from T4
12	TN035-059----	Castle - unclassified	BARONSTOWN	614761	665497	c. 2 km to the NE from T4
13	TN035-056----	Castle - tower house	BROWNSTOWN	613715	664752	c. 0.9 km to the N from T4
14	TN035-055----	Enclosure	CLONAMUCKOGE MORE	612818	664502	c. 1 km to the NW from T4
15	TN035-074----	Enclosure	BROWNSTOWN	613148	663972	c. 0.4 km to the WNW form T4
16	TN035-060----	Ringfort - rath	KILLEENLEIGH	614207	664642	c. 1 km to the NE from T4
17	TN035-077----	Ringfort - rath	BALLYDUAG	614717	664332	c. 1.2 km to the NE from T4
18	TN035-078----	Church	CLOBANNA	614373	663294	c. 0.6 km to the E from T5
19	TN035-078001-	Graveyard	CLOBANNA	614364	663279	c. 0.6 km to the E from T5
20	TN035-079----	Church	ATHNID MORE	615427	663348	c. 1.7 km to the E from T5
21	TN035-081----	Enclosure	ATHNID BEG	616030	663591	c. 2.3 km to the E from T5
22	TN035-080----	Ringfort - rath	ATHNID BEG	615727	663312	c. 2 km to the E from T5
23	TN036-035----	Enclosure	COOLACULLA	616587	663782	c. 3 km to the E from T4
24	TN036-037----	Ringfort - rath	RAHELTY	616667	663242	c. 3 km to the E from T5
25	TN041-015----	Enclosure	RAHELTY	616357	662802	c. 2.7 km to the SE from T5
26	TN042-001----	Ringfort - rath	RAHELTY	616681	662559	c. 3.2 km to the E from T7
27	TN041-017----	Enclosure	RATHCRIDDOGE	616067	661922	c. 3 km to the E from T9
28	TN041-016----	Ringfort - rath	RATHCRIDDOGE	615983	661891	c. 2.8 km to the E from T10
29	TN041-009----	Ringfort - rath	CLOBANNA	613927	662802	c. 0.6 km to the E from T7
30	TN035-075----	Ringfort - rath	BROWNSTOWN	613398	663832	c. 200 m to the SW from T4
31	TN035-076----	Ringfort - rath	BRITTAS (Thurles Par.)	612598	662972	c. 250 m to the NE from T6
32	TN041-008----	Enclosure	BRITTAS (Thurles Par.)	613275	662524	c. 130 m to the S from T7
33	TN041-087----	Enclosure	BRITTAS (Thurles Par.)	612798	661972	c. 400 m to the SW from T9 & c. 500m NW from T10
34	TN041-010----	Castle - unclassified	ROSSESTOWN	613796	662163	c. 700 m to the E from T9
35	TN041-011----	Enclosure	ROSSESTOWN	614107	662332	c. 1 km to the E from T9 & c. 1km SE from T7
36	TN041-014----	Enclosure	ROSSESTOWN	614367	662622	c. 1.1 km to the E from T7
37	TN041-013----	Ringfort - rath	ROSSESTOWN	613924	661657	c. 0.7 km to the E from T10
38	TN041-026----	Ringfort - rath	CASSESTOWN	615026	660891	c. 2.0 km to the SE from T10
39	TN041-024----	Enclosure	TOOREEN (Thurles Par.)	614007	661023	c. 1.0 km to the SE from T10
40	TN041-004----	Earthwork	BRITTAS (Thurles Par.)	611622	662328	c. 1 km to the W from T8
41	TN035-067----	Earthwork	KILLAHARA	609688	663882	c. 2.5 km to the NW from T1
42	TN035-068----	Enclosure	KILLAHARA	609918	663722	c. 2.3 km to the NW from T1
43	TN035-069----	Ringfort - rath	KILKILLAHARA	610418	664082	c. 1.9 km to the NW from T1
44	TN035-070----	Earthwork	KILLAHARA	609337	663243	c. 2.8 km to the W from T1

Map No.	SMR No.	Class	Townland	ITM (E)	ITM (N)	Distance to the Nearest Turbine
45	TN035-071----	Castle - tower house	KILLAHARA	609318	663117	c. 2.9 km to the W from T1
46	TN035-072----	Ringfort - rath	KILLAHARA	609302	662853	c. 2.9 km to the W from T1
47	TN035-073----	Earthwork	KILLAHARA	610498	663022	c. 1.7 km to the W from T1
48	TN041-003----	Enclosure	KILLAHARA	609549	662613	c. 2.8 km to the W from T6
49	TN041-005----	Ringfort - rath	LEWAGH BEG, LEWAGH MORE	610656	661930	c. 2 km to the SW from T8
50	TN041-006----	Ringfort - rath	LEWAGH MORE	610492	661372	c. 2.7 km to the W from T10
51	TN041-007----	Church	BRITTAS (Thurles Par.)	612114	661973	c. 0.7 km to the W from T8
52	TN041-007001-	Graveyard	BRITTAS (Thurles Par.)	612124	661959	c. 0.7 km to the W from T8
53	TN041-076----	Earthwork	BRITTAS (Thurles Par.)	611858	661003	c. 1.5 km to the SW
54	TN041-022----	Ringfort - rath	ARDBAUN	611733	660743	c. 1.4 km to the SW from T10
55	TN041-012001-	Castle - unclassified	BRITTAS (Thurles Par.)	612560	661508	c. 0.6 km to the W from T10
56	TN041-012002-	Bawn	BRITTAS (Thurles Par.)	612578	661513	c. 0.6 km to the W from T10
57	TN041-023----	Enclosure	GRANGE (Thurles Par.)	612248	660503	c. 1.4 km to the SW from T10
58	TN041-020----	Ringfort - rath	KILLINANE	610467	659948	c. 3.2 km to the SW from T10
59	TN041-021001-	Castle - unclassified	KILLINANE	610505	659766	c. 3.2 km to the SW from T10
60	TN041-021002-	Burial ground	KILLINANE	610534	659755	c. 3.2 km to the SW from T10
61	TN041-035----	Earthwork	RACECOURSE (Thurles Par.)	611588	659533	c. 2.6 km to the SW from T10
62	TN041-040----	Ringfort - rath	BRITTASROAD, GORTATAGGAR T	612357	659621	c. 2.2 km to the S from T10
63	TN041-036----	Enclosure	BAWNTAMEENA	611188	659193	c. 3.1 km to the SW from T10
64	TN041-041----	Ringfort - rath	BOWLING GREEN	613840	659244	c. 2.5 km to the S from T10
65	TN041-045----	Ringfort - rath	RATHCOONEY	614457	659003	c. 2.9 km to the SE from T10
66	TN041-044----	Enclosure	GLEBE (Thurles Par.)	613668	658293	c. 3.4 km to the S from T10
67	TN041-042----	Historic town	GARRYVICLEHEEN, MONACOCKA, THURLES TOWNPARKS	612638	658672	c. 2.5 km to the S from T10
68	TN041-042001-	Castle - tower house	THURLES TOWNPARKS	612493	658667	c. 3.0 km to the S from T10
69	TN041-042002-	Castle - tower house	THURLES TOWNPARKS	612818	658694	c. 3.0 km to the S from T10
70	TN041-042003-	Church	GARRYVICLEHEEN	611969	658488	c. 3.0 km to the S from T10
71	TN041-042004-	Castle - motte	THURLES TOWNPARKS	612469	658703	c. 3.0 km to the S from T10
72	TN041-042005-	Sheela-na-gig	THURLES TOWNPARKS	612576	658566	c. 3.0 km to the S from T10
73	TN041-042006-	Bridge	THURLES TOWNPARKS	612850	658706	c. 3.0 km to the S from T10
74	TN041-042007-	Town defences	THURLES TOWNPARKS	612608	658669	c. 3.0 km to the S from T10
75	TN041-042008-	Religious house - Carmelite friars	THURLES TOWNPARKS	612928	658793	c. 3.0 km to the S from T10
76	TN041-042009-	Church	THURLES TOWNPARKS	613280	658867	c. 3.0 km to the S from T10
77	TN041-042010-	Tomb - effigial	THURLES TOWNPARKS	613301	658860	c. 3.0 km to the S from T10
78	TN041-042011-	Graveslab	THURLES TOWNPARKS	613277	658852	c. 3.0 km to the S from T10

Map No.	SMR No.	Class	Townland	ITM (E)	ITM (N)	Distance to the Nearest Turbine
79	TN041-042012-	Memorial stone	THURLES TOWNPARKS	613272	658876	c. 3.0 km to the S from T10
80	TN041-042015-	Gateway	THURLES TOWNPARKS	612528	658623	c. 3.0 km to the S from T10
81	TN041-042016-	Gateway	THURLES TOWNPARKS	612833	658699	c. 3.0 km to the S from T10
82	TN041-042017-	House - indeterminate date	THURLES TOWNPARKS	612500	658660	c. 3.0 km to the S from T10
83	TN041-042018-	Graveyard	GARRYVICLEHEEN	611975	658494	c. 3.0 km to the S from T10
84	TN041-042019-	Graveyard	THURLES TOWNPARKS	613262	658834	c. 3.0 km to the S from T10
85	TN041-042020-	Bawn	THURLES TOWNPARKS	612507	658666	c. 3.0 km to the S from T10
86	TN041-042021-	Stone sculpture (present location)	THURLES TOWNPARKS	612422	658772	c. 3.0 km to the S from T10

Mesolithic period (8000 – 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, 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 also found to date to the Mesolithic period.

There are no Mesolithic sites recorded within the 3km radius study area of the Proposed Wind Farm.

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 manifest by the construction of rectangular timber houses. The period is also associated with establishing the tradition of megalithic tomb construction. There are four general categories of megalithic tombs: court tombs, portal tombs, passage tombs and later wedge tombs. These monumental structures required a high level of cooperation and planning which suggests existing of complex Neolithic societies.

There are no Neolithic sites recorded within the 3km study area of the Proposed Wind farm.

Bronze Age (2500- 800 AD)

The Irish Bronze Age 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*.

There are no Bronze Age sites recorded within the 3km radius study area of the Proposed Wind Farm.

Iron Age (800 BC- AD 400)

The arrival of iron-working technology in Ireland saw the advent of the Iron Age and has been traditionally associated with a Celtic ‘invasion’. This view is no longer widely accepted as recent archaeological evidence points instead to a gradual acculturation of the Irish Bronze Age communities following centuries of contacts with Celtic-type cultures in Europe. As a caveat to that, the number of excavated archaeological sites with evidence of Iron Age settlement and ritual practices still remains small. Furthermore, in a monumental and artefactual context, there is a dearth of records, particularly in the southern half of Ireland. This situation is unlikely to improve as the indigenous population did not make or generally use pottery. There is an absence of other domestic artefacts as well. Interestingly, the population of Ireland continued to be largely aceramic throughout the subsequent Early Medieval Period as well. There are no recorded Iron Age sites within the 3km study area of the Proposed Wind Farm.

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, between c. 400–1169 AD. Settlement in this period (often referred to as the Early Christian or Early Historic periods) is best exemplified monumentally in a secular context by ringforts that are one of most numerous archaeological monuments found in Ireland.

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*, *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 interior 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, 24), 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 enclosing circular bank and ditch while other activity including corn drying kilns and iron working / smelting activity was often undertaken nearby outside for fire safety considerations. Farming included a mixed economy involving cereal growing and animal husbandry, in particular, dairying. 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.

There are twenty-three recorded ringforts situated within 3km study area of the Proposed Wind Farm (**Table 11-4**).

Table 11-4: Recorded ringforts within c.3km study area

Map No.	SMR No.	Class	Description
3	TN035-036----	Ringfort - rath	Situated on a low rise of natural rock outcrop in flat pasture. A raised circular area (diam. 32m E-W) enclosed by an earth and stone bank (Wth 1.6m; int. H 0.2-0.4m; ext. H 1.2m)
6	TN035-053----	Ringfort - rath	Situated on a low rise of ground in undulating countryside. A raised circular area (diam. c. 56m N-S) enclosed by an earth and stone bank (Wth 2m; int. H 1m; ext. H 1.5m at SW) incorporated into a modern field fence and an outer fosse best preserved at SW
9	TN035-057----	Ringfort - rath	Situated just below the summit of a low hill on a W-facing slope in undulating countryside. A slightly raised circular area (diam. 30m N-S) enclosed by an earth and stone bank (Wth 2.8m; int. H 0.25m; ext. H 1-1.5m) and outer fosse (Wth 2.5m; D 0.5m)

Map No.	SMR No.	Class	Description
16	TN035-060----	Ringfort - rath	Situated on a low gentle rise of ground in undulating pasture. A raised subrectangular area (dims. 58m N-S; 39m E-W) enclosed by a low earthen bank mainly reduced to a scarp (H 0.6-1m)
17	TN035-077----	Ringfort - rath	Situated on the gentle SW-facing slope of a low N-S ridge in undulating countryside. A raised oval-shaped area (diam. 63m NW-SE; 61m E-W) enclosed by a poorly preserved earth and stone bank mainly reduced to a scarp (H 1-2m), a wide, flat-bottomed fosse (Wth 4-6m; D 0.85m) and an external bank of earth and stone (Wth 3m; ext. H 0.5m).
22	TN035-080----	Ringfort - rath	Situated on a gentle ESE-facing slope just below the brow of a hillock in undulating pasture. A raised circular area (diam. 41m E-W) enclosed by a bank mainly reduced to a scarp (H 1-2m), a wide fosse (Wth 3-4m; ext. D 0.5-1m) and an outer bank (Wth 2.2m; ext. H 0.5m)
24	TN036-037----	Ringfort - rath	Situated on a low rise of ground in undulating countryside. A slightly raised circular area (diam. 20m E-W) enclosed by a poorly preserved earth and stone bank (Wth 2m; int. H 0.3m; ext. H 0.4-1.1m) which has been mainly reduced to a scarp with an external fosse (Wth 2.3m; D 0.4m)
26	TN042-001----	Ringfort - rath	Situated on a low rise of rock outcrop in slightly undulating pasture. A slightly raised circular area (diam. 22.5m E-W) enclosed by an earth and stone bank (Wth 1.9m; int. H 0.5m; ext. H 0.7-1m) and a shallow outer fosse (Wth 2m; D 0.2m)
28	TN041-016----	Ringfort - rath	Situated on a natural rise in undulating terrain. A field boundary E of the site has been removed. The site encompasses a natural rise giving a slightly raised circular interior (diam. 34m N-S; 35.5m E-W) enclosed by a quite denuded bank (Wth c. 2m; int. H 0.27m; ext. H 1.67m), a deep fosse in the NW quadrant (Wth 2.4m; D 0.87m) and a possible outer bank (Wth 2.2m; ext. H 0.9m).
29	TN041-009----	Ringfort - rath	Although the site has been levelled it is still clearly visible as a roughly circular enclosure (diam. 32m N-S; 32m E-W) defined by a scarp (H 0.88m).
30	TN035-075----	Ringfort - rath	Described in section above
31	TN035-076----	Ringfort - rath	Described in section above
37	TN041-013----	Ringfort - rath	Located partially on the crest of a N-S ridge and on the SE slope, in undulating pastureland. A roughly circular site (diam. 28m NE-SW) enclosed by an earth and stone bank (Wth 1.7m; int. H 0.36m; ext. H 1.06m)
38	TN041-026----	Ringfort - rath	Located on a gradual SE-facing slope in rough meadow. A field boundary to the NW has been removed and the area (immediately NW of the ringfort) is used as a yard for old machinery. A roughly circular area (diam. 32.8m N-S; 29m E-W) defined by a low bank (Wth c. 2.2m; int. H 0.4m; ext. H 1.53m) which has been truncated and flattened. There is no bank at SE which may be the site of original entrance on the downslope side of the site and there is no visible evidence of an outer fosse
43	TN035-069----	Ringfort - rath	Situated on a low rise of ground in undulating countryside. A raised circular area (diam. 32m N-S) enclosed by an earth and stone bank (Wth 4m; int. H 0.3-0.6m; ext. H 1-2m) and an outer fosse (Wth 3-5m; D 1m max.)
46	TN035-072----	Ringfort - rath	Situated on a low N-S ridge in undulating countryside with good views to the S. A circular area (diam. 32m E-W) enclosed by an earth and stone bank (Wth 2.5m; int. H 0.5m; ext. H 1-1.5m) and an outer fosse (Wth 2.3m; D 0.6m)
49	TN041-005----	Ringfort - rath	Located on a NW-facing slope in pasture. A circular area (diam. c. 33m N-S; 33m E-W) defined by an inner bank (Wth 2.5m; int. H 0.8m; ext. H 1.66m), a wide, flat-bottomed fosse (Wth 4.7m; D 1.18m) and an outer bank (Wth 1.9m; ext. H 0.56m). A roadway running close to the E and S sides truncates the defences of the E sector. The bank at this point has been almost completely levelled and the outer bank has been incorporated into or removed by the roadway boundary
50	TN041-006----	Ringfort - rath	Situated on the summit of a natural rise, sloping slightly to the SE; surrounded by pasture with a farmyard to the NE. A roughly circular area (diam. c. 30-35m) defined by an earthen bank (Wth 1.3m; int. H 0.28m; ext. H 1.15m). The site is densely overgrown with scrub
54	TN041-022----	Ringfort - rath	Situated on a NW-facing slope in gently undulating pasture. An oval area (diam. 36m N-S; 50m E-W) enclosed by an earth and gravel bank (Wth 2m; int. H 0.32m; ext. H 1.37m) and a shallow external fosse (Wth 2.7m; D 0.37m)
58	TN041-020----	Ringfort - rath	Situated on the summit of a natural rise with a road adjacent to the E portion. There is a house to the N and S of the site and pasture to the W. The site is very overgrown and the surface is uneven with spoil heaps and quarry-holes in the interior. The present remains consist of an irregular-shaped area (diam. 36.4m N-S) defined by a scarp with a modern gap in the bank at N.
62	TN041-040----	Ringfort - rath	Situated on ground sloping very gradually to the SE in pasture. A raised circular area (diam. 33m N-S and E-W) enclosed by a low, earth and stone bank (Wth 2.3m; int. H 0.35m; ext. H 0.73-1m) with no visible evidence of an external fosse
64	TN041-041----	Ringfort - rath	Situated on a gentle E-facing slope on the outskirts of Thurles Town. The site is in waste ground with the land to the E occupied by football pitches. A large town watertower sits immediately NE of the site. Originally the site consisted of a circular area (diam. 46m NW-SE) enclosed by a bank which is largely reduced to a scarp (H 2m)
65	TN041-045----	Ringfort - rath	Located on the summit of the S end of a N-S ridge in rolling pastureland. A roughly circular levelled enclosure (diam. 23m N-S; 25.4m E-W)

In addition, a total of 23 enclosures are recorded within 3.0km study zone. 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. Of the 23 recorded enclosures (**Table 11-5**) in the study area there are 2 situated within the Red Line Boundary of the Proposed Wind Farm.

Table 11-5: Recorded enclosures within c.3km radius zone

Map No.	SMR No.	Class	Description
1	TN035-032----	Enclosure	Not visible at ground level
2	TN035-052----	Enclosure	Not visible at ground level
4	TN035-039----	Enclosure	Not visible at ground level
5	TN035-040----	Enclosure	Situated just below the brow of a hill on an E-facing slope in undulating countryside with rectangular enclosure site/possible moated site (TN035-041) to the E. The barely discernible outline of a destroyed circular enclosure (diam. 40m N-S) defined by differential grass growth (Wth 2m)
8	TN035-046----	Enclosure	Not visible at ground level
10	TN035-054----	Enclosure	Not visible at ground level
11	TN035-058----	Enclosure	Situated on a low N-S ridge in undulating countryside. The barely discernible outline of a destroyed enclosure the interior of which appears to have been quarried out.
14	TN035-055----	Enclosure	Situated on a low rise of ground in undulating countryside. Described in the NMI file IA 53/54 as a low circular platform defined by a scarp (H 4ft. [1.2m])
15	TN035-074----	Enclosure	Situated on a low rise of ground in poorly drained undulating countryside. A raised circular area (diam. 16m E-W) defined by a scarp (H 1m) with a shallow external fosse (Wth 2.2m; D 0.15m)
21	TN035-081----	Enclosure	Situated on a low rise of ground in flat pasture. A slightly raised subrectangular area (dims. 30m N-S; 28.5m E-W) enclosed by a low earth and stone bank (Wth 2.5m; int. H 0.15m; ext. H 0.6-1m)
23	TN036-035----	Enclosure	Situated on a natural rise of ground in a nineteenth-century forest plantation in undulating countryside. A poorly preserved site consisting of a circular area (diam. 19.5m E-W) enclosed by an earth and stone bank (Wth 1m; ext. H 0.5m) which has been mainly reduced to a scarp
25	TN041-015----	Enclosure	Not visible at ground level
27	TN041-017----	Enclosure	Not visible at ground level
32	TN041-008----	Enclosure	Described in section above
33	TN041-087----	Enclosure	Described in section above
35	TN041-011----	Enclosure	Not visible at ground level
36	TN041-014----	Enclosure	Not visible at ground level
39	TN041-024----	Enclosure	Not visible at ground level
42	TN035-068----	Enclosure	Impossible to examine site due to dense cover of vegetation
48	TN041-003----	Enclosure	Not visible at ground level
57	TN041-023----	Enclosure	Situated on an E-facing slope in undulating pasture on a low natural rise of ground. The site consists of an irregular oval area (diam. 93m N-S; 75.3m E-W) defined by an earthen bank (Wth 2.2m; int. H 1.32m; ext. H 0.8m), with a smaller internal enclosure (diam. 31.5m N-S) on the summit of a rise defined by a stone bank/low wall (Wth 1.2m; int. H 0.3m; ext. H 0.42m). This may be an eighteenth/nineteenth-century landscape feature depicted on the 1st ed. (1843) OS 6-inch map as a roughly oval area defined by a ring of trees and field bank.
63	TN041-036----	Enclosure	No visible trace of site above ground

Map No.	SMR No.	Class	Description
66	TN041-044----	Enclosure	Situated on a gentle SE-facing slope in gently undulating terrain. A large D-shaped area (dims. 79m N-S; 72.5m E-W) enclosed by an earth and stone bank (Wth 2.8m; int. H 0.63m; ext. H 1.44m). Evidence of a wide shallow external fosse exists in the SE sector only (Wth 5.8m; D 0.2m)

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, 53).

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.

There are four tower houses located within 3km radius study zone.

Castle-tower house TN035-056 is located on townland of Brownstown, c. 0.9 km to the N from the nearest T4. The castle is situated on a low rise of natural rock outcrop in slightly undulating countryside. Described in the Civil Survey (1654-6) as a 'small castle out of repair' (Simington 1931, vol. 1, 70). Theobald Purcell is listed as proprietor in 1640 (ibid.). Only the S wall survives of a small rectangular castle (ext. dims. E-W 8.8m; wall T 2m) orientated on a N-S axis and constructed with roughly coursed limestone rubble. There is a ground-floor window (now destroyed) in the centre of the S wall with partial remains of spiral stairs in the SE angle (www.archaeology.ie)

The castle at the present day is in poor condition and heavily overgrown with ivy. Monument is visible and accessible from the main road however there is no open public access.

Castle-tower house TN035-071 is located on townland of Killahara, c. 2.9 km to the W from the nearest T1. It is a well-preserved four-storey tower house (ext. dims. 12.08m NW-SE; 9.66m NE-SW; wall T 2.4m) built with roughly coursed limestone rubble and alternating hammer dressed quoins with slight base-batter. The main entrance, consisting of a two-centred chamfered and rebated doorway in the NW wall, gives access to a lobby protected by an overhead murder-hole and a cross-loop in the SE wall. (...) The ground floor is lit by a single-light elliptical-headed window in the SE wall with twin-light elliptical windows set into segmental-arched embrasures with wicker centring in the SW and NE walls. (...) At first-floor level there is a flat-headed fireplace with joggled voussoirs on the SW wall and a garderobe in the E angle accessed off the E splay of a window embrasure in the NE wall. (...) The third floor has been greatly modified in the nineteenth century as evidenced by bricked-up opes and brick-arched windows. (...) A combination of stone dressing, consisting of fine pecking with drafted margins, together with architectural features suggest a late sixteenth/early seventeenth-century date for this tower house. (www.archaeology.ie).

At the present day the castle is accessible, although temporary closed for the public with no access to the interior of the monument.

Two other tower houses are located in the hearth of Thurles Town, c.3km to the S of Proposed WF.

Castle-tower house TN041-042001 is locally known as the 'Black Castle', this 15th century tower house was also known as 'Thurles Castle' and stood 35m S of the 12th century Anglo-Norman motte castle (TN041-042004-) as depicted on the 1838 ed. OS 6-inch map. The Mac Richard Butler family resided in the tower house which they

built around the year 1453 (O'Donovan 1856, 1170-1). (...) The castle stands today surrounded by buildings on the W side of Liberty Square in the medieval town of Thurles (TN041-042----). (...) The tower house stood inside a bawn (TN041-042020-) or courtyard defended by a stone wall with angle towers and accessed through a gateway. (...)

Present remains consist of a four-storey high lobby-entrance tower house built from coursed limestone rubble with a pronounced base-batter. (...) A seventeenth-century house (TN041-042017-) may have been constructed against the W face of the tower house where only the tie stones for such a structure survive. (www.archaeology.ie)

Castle-tower house TN041-042002 is known as the Bridge Castle and is located on the S side adjacent to Barry's Bridge (TN041-042006-). Local tradition suggests that this castle was built and occupied by the Knights Templars (O'Flanagan 1930, vol. 3, 4). A marginal entry in the Laud Misc. 610 states that, 'It will be a year tomorrow since the Earl of Ormond [James Butler, the 4th Earl] died, that is, St. Bartholomew's Day, and in that year [1452] he built the bawn of Dunmore and the two castles of Thurles' (Dillon 1963, 147). A date of 1453 has been suggested for its construction (Condon 1984, 2; Corbett 1993, 144). (...) Present remains consist of a three-storey high tower house with attic and parapet constructed with roughly coursed limestone rubble with base-batter (ibid).

In addition there are four unclassified castles within 3km study area. The term unclassified reflecting the castle that cannot be more precisely classified and can date from the late 12th to the 16th century AD. These monuments are often depicted on historic OSi maps but there is no obvious trace of the structures on the ground.

Located slightly outside of the 3km study zone but assessed in this report for potential visual cultural effect is another tower house TN035-030005 and a church TN035-030002 situated c.3.7km to the NW of proposed WF planning boundary. The castle is situated on flat pasture with the nearby River Suir to the E and a church (TN035-030002-) to the W. A four-storey tower house with attic, constructed of coursed rubble with rounded angles and slight base-batter. A seventeenth-century semi-fortified Z-plan house (TN035-030004-) is attached to the N façade of the tower house. The tower was accessed from a main doorway in the centre of the N wall which led to a lobby protected by an overhead murder-hole. The spiral stairs in the NE angle were accessed off the lobby and are now blocked up while the ground floor is reached through a doorway directly opposite the main entrance. The ground floor is barrel vaulted with a second vault over the second floor, the latter floor containing an armorial fireplace, now inaccessible. (www.archaeology.ie) At the present day the castle is accessible and clearly visible from the main road however, is not open to the public.

Located c.300m to the W of the castle there is a church TN035-030002. At the present day the ivy covered remains of a nave (ext. dims. 9m N-S; 19.2m E-W) and chancel (ext. dims. 8.4m N-S; 9.65m E-W; wall T 0.8m) church with a barrel-vaulted tower (int. dims. 5.7m N-S; 10.2m E-W; wall T 1.15m) built onto the E end of the chancel. The tower, which appears to be contemporary with the chancel, has been truncated and now stands only one storey high. It is lit by a twin-light flat-headed seventeenth-century window in the E gable and has destroyed windows at the E end of the N and S walls. (Ibid). The graveyard (TN035-030007) contains eighteenth and nineteenth-century headstones with a water spout, possibly from the tower, inserted into the surface of the graveyard in the W sector.

Four other churches are situated within 3km radius study area of the Proposed Wind Farm.

Church TN035-078 and graveyard TN035-078001 are situated on townland of Clobanna, c. 0.6 km to the E from the nearest T5. The site is listed in the ecclesiastical taxation of the Diocese of Cashel in 1302 where it is referred to as the 'Chapel of Sidan', (CDI, vol. 5, 283). The poorly preserved remains of a rectangular church (dims. 9.18m N-S; 16.7m E-W; wall T 1.1m) constructed with roughly coursed limestone rubble. Only the S wall and W gable of the church survive with a graveyard to the S of the church. (...) The jambstones of the destroyed doorway are reused as an entrance gateway to the graveyard (TN035-078001) which contains nineteenth and twentieth-century headstones. The OS Letters describe the church with only the N wall destroyed and a twin-light limestone

window in the now demolished E gable (O'Flanagan 1930, vol. 2, 186-7).(www.archaeology.ie). The monument was visited during field inspection as is accessible from the main road.

Church TN035-079 is situated on a low rise of natural rock outcrop c.1.7 km to the E from the nearest T5. Site is listed in the ecclesiastical taxation of the Diocese of Cashel in 1302 (CDI, vol. 5, 283). The poorly preserved remains of a rectangular church (dims. 8.3m N-S; 14.93m E-W; wall T. 0.85m) constructed with roughly coursed limestone rubble; the S wall and most of the W gable are destroyed.(Ibid).

Church TN041-007 and graveyard TN041-007001 are located on townland of Brittas, c.0.7 km to the W from the nearest T8 . The church is situated in the NW angle of a square-shaped graveyard and is constructed of roughly coursed limestone rubble. The W wall of the church also forms the W wall of the graveyard. (...) The earliest visible headstone in the graveyard dates to 1782 and commemorates James Sweeney, a worker on the estate. Other gravestones are predominantly Knoxs and Langleys of nineteenth-century date. A number of crude gravemarkers are also present. This appears to be an estate church with no visible evidence of medieval origin (www.archaeology.ie). The site was visited during field inspection, however there is no public access as the monument are located on private land.

The last church, TN041-042009, is located in Thurles Townparks in the hearth of Thurles. It is a modern church located in a graveyard (TN041-042019) which may have been associated with the medieval church. It is possible that this was not the site of the medieval church as it is located outside the medieval core of the town (Bradley 1985, 54).

There are several other medieval monuments within 3km radius zone and majority of which are located within Thurles Townparks and Historic Town of Thurles TN041-042.

11.3.4 Record of Protected Structures (RPS)

There are several recorded protected structures (RPS) within 3km study area. With the exception of Ballyduag Creamery (RPS: TRPS769) and a House, (RPS: TRPS834) there are three main clusters of recorded protected structures: Brittas Demesne, Dovea village and Thurles Townparks (**Figure 11-46, Table 11-6**).

11.3.4.1 Brittas Demesne

History of Brittas Demesne

In 1640 Brittas was owned by a Catholic, James Butler. Following the Catholic Confederation and Cromwellian Wars, Butler's property was confiscated and granted in 1666 to John Grace a Protestant of Kilkenny who received Brittas Castle and 920 acres of land (**Figure 11-4**). The Down Survey record that Brittas contained 548 profitable plantation acres and 36 unprofitable (www.downsurvey.tchpc.tcd.ie). A plantation acre is equivalent to approximately 1.62 statute acres. The 1659 census recorded that there were 61 English living at Brittas. John Grace died in 1683 and in his will, he left his furniture, pictures, book, money to his sons Nicholas, Richard and James and to his daughter Macdonnell. Apparently, the money was stored in chests in Brittas castle (www.irelandxo.com). As well as the castle, a bawn was also recorded in Brittas in the Civil Survey of 1654-56. The current 19th century dwelling house was built on the site (www.archaeology.ie).



BALLYTAS CASTLE. S.W. VIEW.
DES. BY HENRY GRACE LAMBEY ESQ.

Figure 11-5: Sketch of the original Brittas castle in the possession of the present landowner. The castle, complex shows two square and one round tower as well as a range of connecting buildings the largest of which is a 5-bay three storey building. Brittas castle was destroyed by fire c.1820.

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when Major Langley was killed after being struck by a falling stone following which the structure was abandoned (Bence-Jones 1978, 48).

In October 1851 Brittas estate was in the hands of the Court of Chancery. Griffiths Valuation record that Henry Langley Esquire occupied a little over 462 acres and included house, offices (sheds) and gate lodge valued for annual rates of £434 11s 0d. The lessor at the time was the Court of Chancery (www.askaboutireland.ie, accessed 23/05/2024). Langley also had leases on a vacant property and the graveyard in the estate which accrued annual rates of £0 2s 0d. He also leased a cottage, office and garden to James McGrath who paid rates of £2 16s 0d annually while Catherine Forsythe occupied a cottage with annual rates of £2 11s 0d (ibid).

Brittas was offered for sale in the Encumbered Estates Court which sold the Langley properties of Brittas and Pierstown in December 1853. The Brittas estate was bought by Colonel William Knox. John Hunter Knox of Brittas Castle was a Lieutenant Colonel of the 14th Hussars who died in India in October 1885. William Hunter Knox was a captain of the 13th Light Dragoons who died in Brittas Castle on the 9th August 1892.

The 1901 Census enumerates that Fitzroy Knox (third son of William Hunter Knox) and Maud Knox had two sons, John, a Lieutenant in the Royal Navy and Gerald whose profession is given as Gent both of whom were unmarried. Maud and her sons were born in England while Fitzroy, a JP, was born in Dublin. All the Knox's were Church of Ireland. They had six servants including a general servant, parlor maid, domestic cook, kitchen maid, groom and stable boy (www.census.nationalarchives.ie). The 1901 Census also records that the Brittas estate comprised of 40 out-offices and other farm steadings built of stone or brick and slated. The census return form for the 40 out-offices and farm steadings include 16 stables, 1 coach house, 1 harness room, 3 cow houses, 2 calf houses, 1 dairy, 2 piggeries 3 fowl houses, 1 boiling house, 1 barn, 1 turf house, 2 potato houses, 1 workshop, 3 sheds, 1 store and 1 laundry (ibid).

In 1906 Brittas was described as a mansion house valued at £25 and occupied by Fitzroy Knox who died in Glasnevin Dublin in April 1911. His son Lieutenant Colonel Hugh / Hubert Knox died at the Battle of the Somme on the 13th October 1916. In the subsequent 1911 Census there are no records of the Knox family at Brittas.

Brittas in NIAH

There are four NIAH entries for Brittas all of which are interrelated and all of which are assigned a regional rating (www.buildingsofireland.ie, accessed 23/05/2024):

- (1) Brittas Castle-country house (**Plates 11-5 & 11.6**), reg. no. 22404111. Built c.1860 and is still occupied. The NIAH have given it a regional rating and describe it as a '*Detached L-plan single-storey house, built c.1860, with six-bay front and three-bay south elevations and with lean-to addition to southwest and half-hipped outbuilding attached to northwest. Hipped slate main roof having rendered chimneystacks. Rendered walls with dressed limestone quoins. Square-headed openings with timber sliding sash windows, mainly two-over-two pane, having margined one-over-one pane to south elevation, with limestone sills. Ashlar limestone block-and-start surround to square-headed door opening having glazed timber panelled door. Yard of single storey outbuildings to north, having pitched slate and corrugated-iron roofs, and some with cut-stone walls, some having segmental-arch carriage openings. Multiple-bay two-storey outbuilding to northwest, with pitched slate roof, dressed limestone walls with cut limestone quoins and having bellcote to south (ibid). Furthermore, the NIAH Appraisal records 'Set close to the incomplete Brittas Castle, this modest country house retains many features and materials, such as the margined timber sash windows, ashlar limestone dressings and slate roof. The site of the house and castle is enhanced by the related outbuildings and fine gates which add context and interest' (ibid).*



Plate 11-5 View of Brittas Castle Country House from east. Note moat and wider associated farm buildings at rear (LDARCH 2023).



Plate 11-6: : Oblique UAV view of Brittas Country House and farm complex from south (LDARCH 2023).

- (2) Brittas Castle (**Plates 11-7 to 11-9**), reg. no. 22404101. The NIAH describe it as a ‘*Detached castle, built c.1830, and unfinished except for front elevation and lower parts of other walls. Polygonal battlemented towers to corners of front elevation. Ashlar limestone walls with battered base. Round-arch loop windows, with double-ogee light to west side of front part. Machicolations to towers and west wall. Four-centred-arch entranceway, with chamfered surrounds and with slots for portcullis. Castle surrounded by moat*’ (ibid). In appraising the structure, the NIAH record that the castle was ‘*Built by Major Henry Langley, this castle was intended to be the first nineteenth-century ‘archaeological’ castle in Ireland. Designed by William Vitruvius Morrison, work was abandoned in 1834 when Langley was struck by a falling stone on site and killed. The building retains many of its original interior and exterior features, including a dungeon and a working moat. The finely-cut limestone masonry used throughout the building attests to the skill of the nineteenth-century craftsmen and stone masons. Brittas Castle forms an imposing and striking silhouette on the surrounding countryside*’ (ibid).



Plate 11-7: Oblique UAV view from south, south-east of Brittas Castle gate tower, Brittas Country House and farm complex (LDARCH 2023).



Plate 11-8: View from north-east of Brittas Castle gate tower constructed c.1834 (LDARCH 2023).

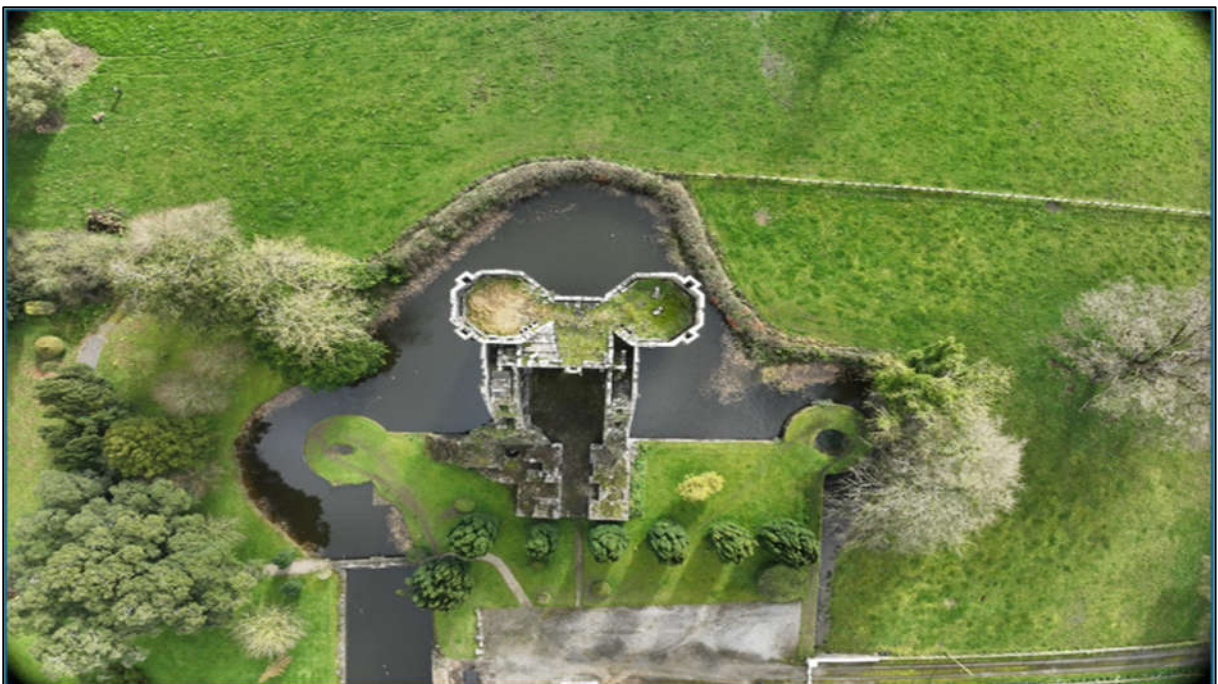


Plate 11-9: Vertical low-flown UAV image from west of Brittas Castle gate tower and moat (LDARCH 2023).

- (3) Entrance gates (**Plate 11-10**), reg. no. 22404113. The NIAH description records that the ‘*Entrance gates to country house, erected c.1850, comprising square-plan cut limestone piers with moulded cornice and flat caps. Ornate wrought-iron piers and vehicular and pedestrian gates. Detached two-bay single-storey with attic gate lodge to north-west, with gabled porch, and with lower single-bay addition to west. Pitched slate roof with rendered chimneystacks and carved timber bargeboards. Rendered walls with render quoins and square-headed replacement uPVC windows and timber door*’ (ibid). The NIAH appraisal notes that ‘*The fine limestone piers and wrought-iron gates, clearly executed by skilled masons and metalworkers, contribute to*

the setting of Brittas Castle and form part of an interesting group of related structures with the house, castle, gate lodge and outbuildings’.



Plate 11-10: Wrought iron gates at Brittas Castle, reg. no. 22404113.

- (4) Gate Lodge (**Plate 11-11**) NIAH Reg. no. 22404112, currently in use as a dwelling house. The NIAH describe it as a ‘Detached three-bay gate lodge, built c.1850, with single-storey front and formerly two-storey rear elevations, with gabled projecting central bay, having recent extension to rear. Pitched slate roof having cut limestone chimneystack with recent rendered top. Rendered walls with dressed limestone quoins, plaque, dressings to openings and label-mouldings. Square-headed openings to front, mullioned double segmental lights to lower gables and loops to upper gables, all with block-and-start surrounds, replacement windows and with label-mouldings to all ground floor openings except ogee-headed windows in sides of porch. Wide entrance door openings with label-moulding and recent brick infill to sides and having replacement timber door. Square-plan ashlar limestone piers and rendered walls with dressed limestone copings and having replacement cast-iron vehicular and flanking pedestrian gates to road’ (ibid). In appraising Brittas Gate Lodge the NIAH state ‘This house retains much of its original form and structure. Textural interest is achieved through the juxtaposition of smooth render and the cut limestone dressings. The house retains its limestone sills, limestone plaque and slate roof. It forms part of an interesting group of related structures with the house, castle, gate lodge and outbuildings (ibid).



Plate 11-11: View of Brittas Gate Lodge from W (LDARCH 2023).

Within the curtilage of Brittas Castle country house there are formal well maintained gardens including topiary disposed around and integrated with the gate tower and moat. A row of tall cypress trees (?) screens the somewhat austere rear limits of the unfinished castle from the residential country house (**Plate 11-12**).

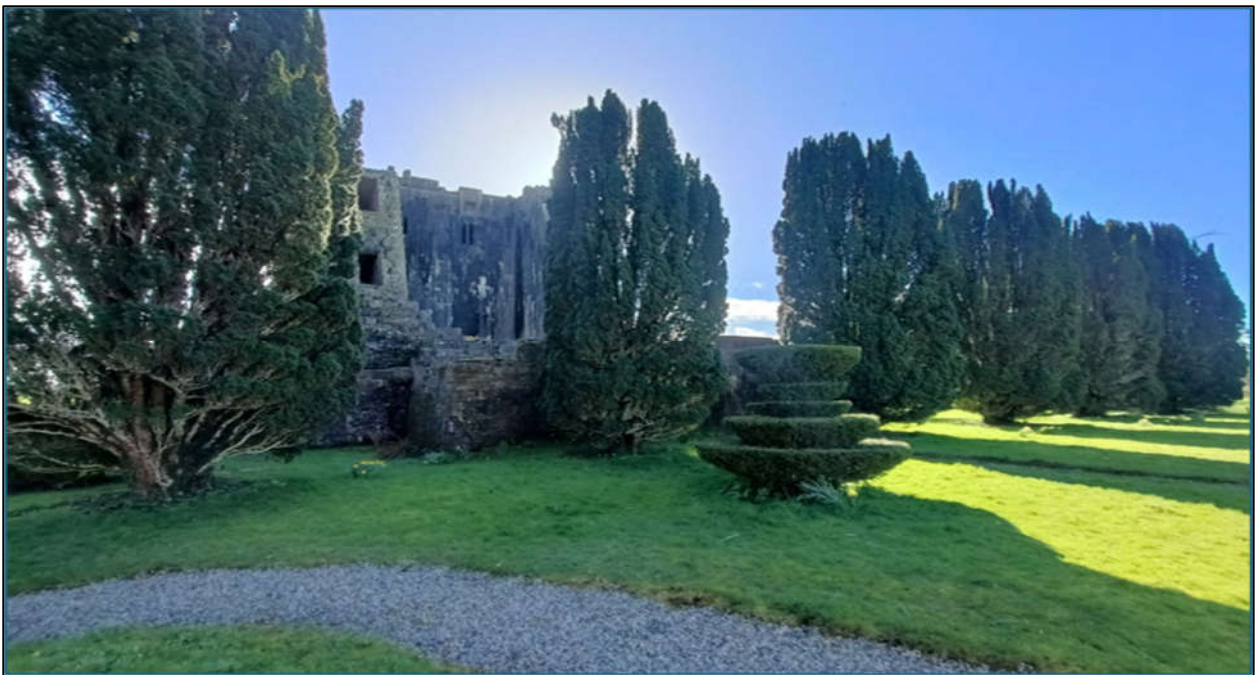


Plate 11-12: View from northeast of rear of gate tower. Note tall screen and topiary (LDARCH 2023).

In a working living context, Brittas continues to function as a connected farm complex that has been in continuous use for several centuries. The 1901 census gives a full description of the nature of the 40 or so buildings at Brittas at the start of the 20th century (see above & **Plates 11-5 & 11-6**). A bi-annual rent book and other farm account books, dating from the early 19th century for the estate are in the possession of the current incumbent.



Plate 11-13: View from east of range of two storey farm buildings and bellcote (LDARCH 2023).

Wider built heritage structures at Brittas Castle Estate

In the wider parkland of Brittas Demesne, there are a number of other built heritage features including a private estate church and graveyard and the relict remains of a lime kiln (**Plate 11-16**). The church and graveyard (**Plate 11-14** and **11-15**) are recorded monuments (TN041-007) situated c.570m to the north-west of Brittas country house. The graveyard is entered through a round-headed arch in the E wall with engaged pillars on either side. The earliest visible headstone in the graveyard dates to 1782 and commemorates James Sweeney, a worker on the estate. Other gravestones are predominantly Knoxs and Langleys of nineteenth-century date. A number of crude gravemarkers are also present. This appears to be an estate church with no visible evidence of medieval origin. Marked as '*church in ruins*' on the 1st Ed. (1843) OS 6-inch map, however, there is no entry in the OS Letters (www.archaeology.ie). The graveyard was not accessible during this survey.



Plate 11-14: View of graveyard on Brittas estate from north (LDARCH 2023).



Plate 11-15: View of interior of graveyard at Brittas from east (LDARCH 2023).

The partial remains of a limekiln, comprising of a hemisphere of the kiln bowl are located on the northern limits of a disused quarry that no doubt supplied the kiln. The old quarry and kiln are situated c.490m to the north-east of Brittas Country House in a secluded tree covered area.



Plate 11-16: Overview of relict remains of the bowl of the lime kiln in Brittas (LDARCH 2023).

11.3.4.2 Dovea village

Dovea village consisted of six structures of which the two are more distinctive. These are Saint Michael's Church (RPS: TRPS763) and Killahara House (RPS: TRPS766). The church was built c.1830, with three-bay nave, chancel to east, and having entrance porches, gabled to southwest and lean-to to northeast corners and is in use as a house in present day (www.buildingsofireland.ie). Killahara House is a detached three-bay two-storey house, built c.1890, with recent hipped extension to west and uPVC conservatory to front (Ibid).

11.3.4.3 Thurles Townparks

Thurles Townparks consists of large number of protected structures within the historic town limits as well as on the outskirts. Within the number of 18th-19th century houses there are several distinctive buildings such as Cathedral of the Assumption (RPS 54), Thurles Court House (RPS 12), Confraternity Hall (RPS 13) or Thurles Railway Station (RPS 68). In that context an assessment for potential cultural visual effect will be undertaken on entire Thurles Townparks and structures within.

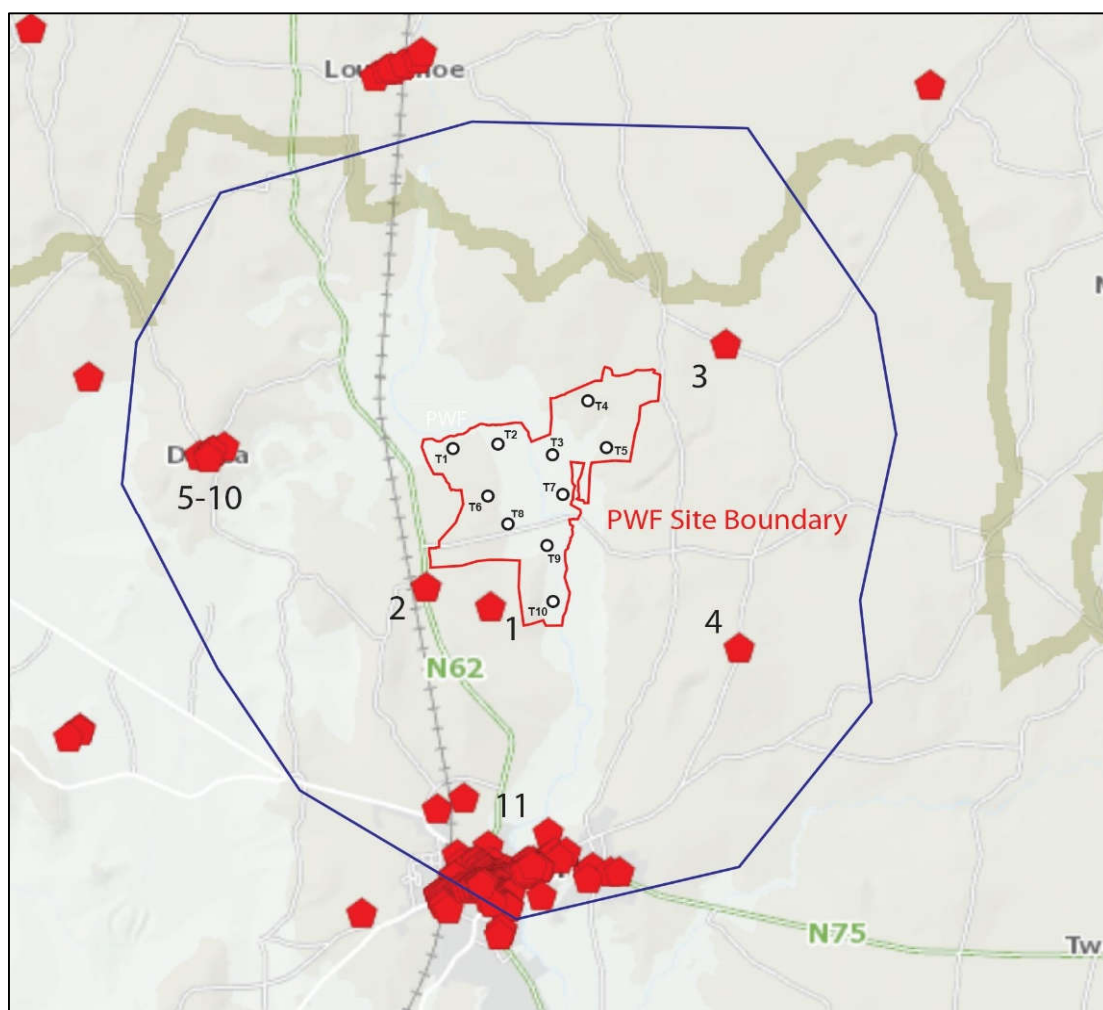


Figure 11-6: Location of recorded protected structures within c.3km study area

Table 11-6: Recorded Protected structures within 3km radius study area.

No	NIAH Reg. No.	Structure	Townland	Date	Rating	ITM (N)	ITM (E)	RPS	Distance (<i>circa</i>)
1	22404101	Brittas Castle	BRITTAS (THURLES PR)	1820 - 1840	Regional	612557	661507	TRPS99	0.6 km to the E of the nearest T10
2	22404112	Gate lodge	BRITTAS (THURLES PR)	1840 - 1860	Regional	611817	661759	TRPS830	1.3 km to the E of the nearest T10
3	-	Ballyduag Creamery	BALLYDAUG	1915	Regional	614678	664364	TRPS769	1.5 km to the NE of the nearest T4
4	22404102	House	CASSESTOWN	1780 - 1820	Regional	615122	661129	TRPS834	2km to the SE to the T10
5	22403504	Church/chapel	KILLAHARA	1820 - 1840	Regional	609492	663167	TRPS763	2.5 km to the W of the nearest T1
6	-	Former parsonage	KILLAHARA	1851	Regional	609575	663194	TRPS764	2.5 km to the W of the nearest T1
7	22403509	School/house	KILLAHARA	1860 - 1900	Regional	609585	663139	TRPS768	2.5 km to the W of the nearest T1
8	-	Terrace of houses	KILLAHARA	-	Regional	609622	663217	TRPS765	2.5 km to the W of the nearest T1
9	22403508	Water pump	KILLAHARA	1850 - 1890	Regional	609628	663200	TRPS767	2.5 km to the W of the nearest T1
10	22403507	Killahara House	KILLAHARA	1870 - 1910	Regional	609749	663267	TRPS766	2.5 km to the W of the nearest T1
11	-	Thurles town	(several protected structures in the town)						2.6km to the S

11.3.5 National Inventory of Architectural Heritage

Comparing the location of recorded protected structures to the location of the buildings listed in National Inventory of Architectural Heritage, there is no significant difference between their locations. There are still three main clusters as listed above and which are Brittas Demesne, Dovea village and Thurles Town **Figure 11-7**). From this context then, assessment will be undertaken using the same criteria as for recorded protected structures.

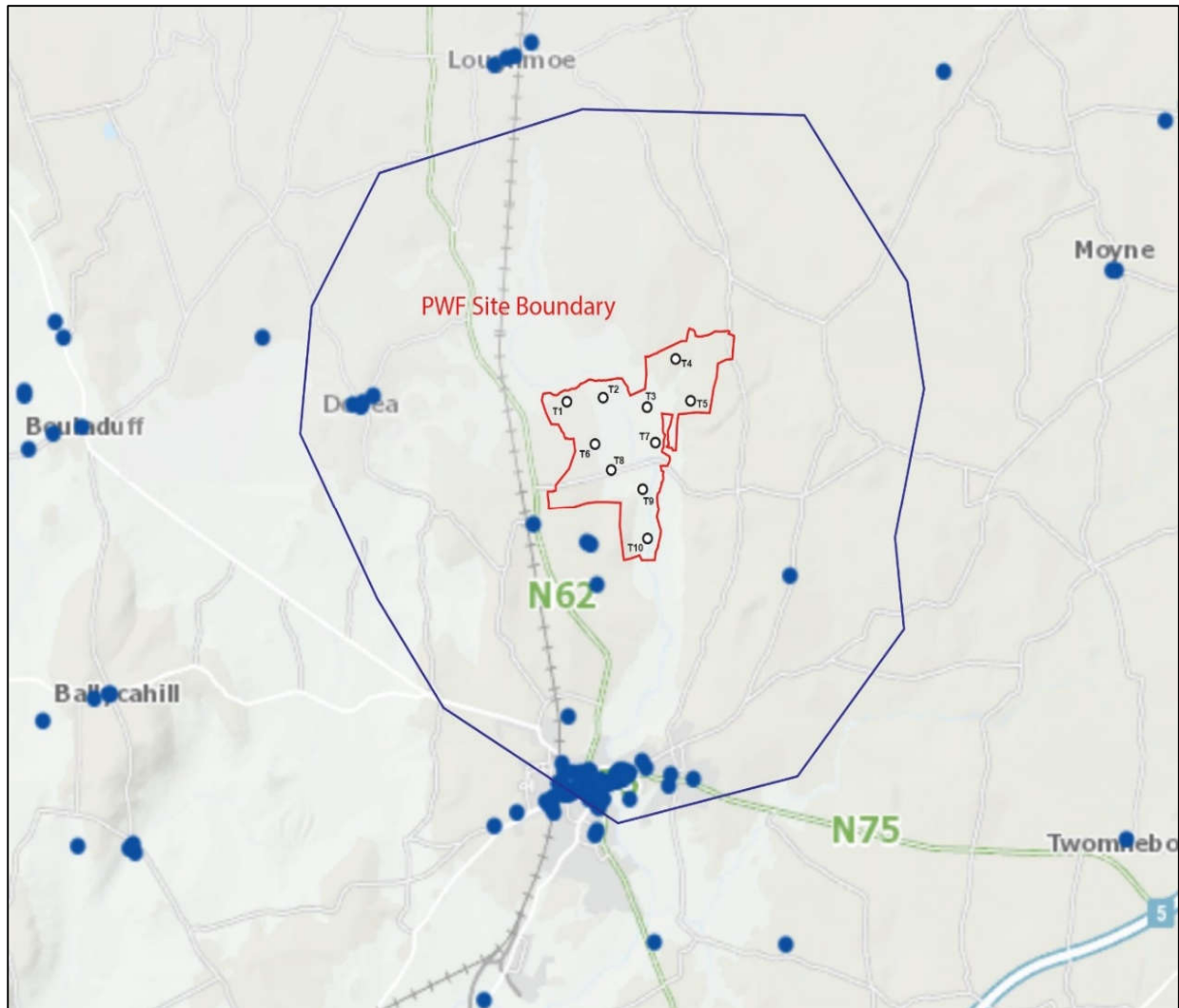


Figure 11-7: Location of heritage structures listed in NIAH (note similarity to location of protected structures).

11.3.6 Excavations

The Proposed Wind Farm will be situated within seven townlands: Brittas, Rossestown, Clobanna, Killeenleigh, Kilkillahara and Brownstown. Examination of the Excavations Bulletin (1970 – 2023) revealed that two archaeological investigation works took place within these townlands (www.excavations.ie).

Unlicensed monitoring took place in the townland of Brittas in 2017 in regards to drainage associated with upgrading works of the 19th century Brittas House. During monitoring a portion of the medieval to post-medieval cobbled surface of the bawn was exposed in the base of a pipe trench at the south side of Brittas House. The works did not intrude into the cobbled surface and it was therefore protected.

Archaeological testing (License 07E0623) was undertaken at Rossestown townland prior to a proposed residential development. Test-trenching was undertaken in 2007. Seven test trenches were investigated across the test area. Nothing of archaeological significance was discovered in any of the excavated trenches.

11.3.7 Topographical Files

Information on artefact finds from the receiving environment in County Tipperary 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 the townlands of Brittas, Rossestown, Clobanna, Killeenleigh, Kilkillahara or Brownstown (www.heritagemaps.ie).

11.3.8 Archaeological Landscapes

Examination of the Tipperary County Council Development Plan (2022-2028) revealed that the Proposed Development is not situated within a designated archaeological landscape.

11.3.9 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 2022) and Bing Maps (2018) was also examined.

Furthermore, targeted, low-flown UAV imagery of the Proposed Development was also undertaken in tandem with archaeological field inspections in March 2023. No previously unrecorded sites or monuments were found.

11.3.10 Historic Cartographic Evidence

11.3.10.1 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 townlands of the Proposed Wind Farm were examined (**Table 11-7**). Brittas Castle is clearly depicted (see above **Figure 11-4**).

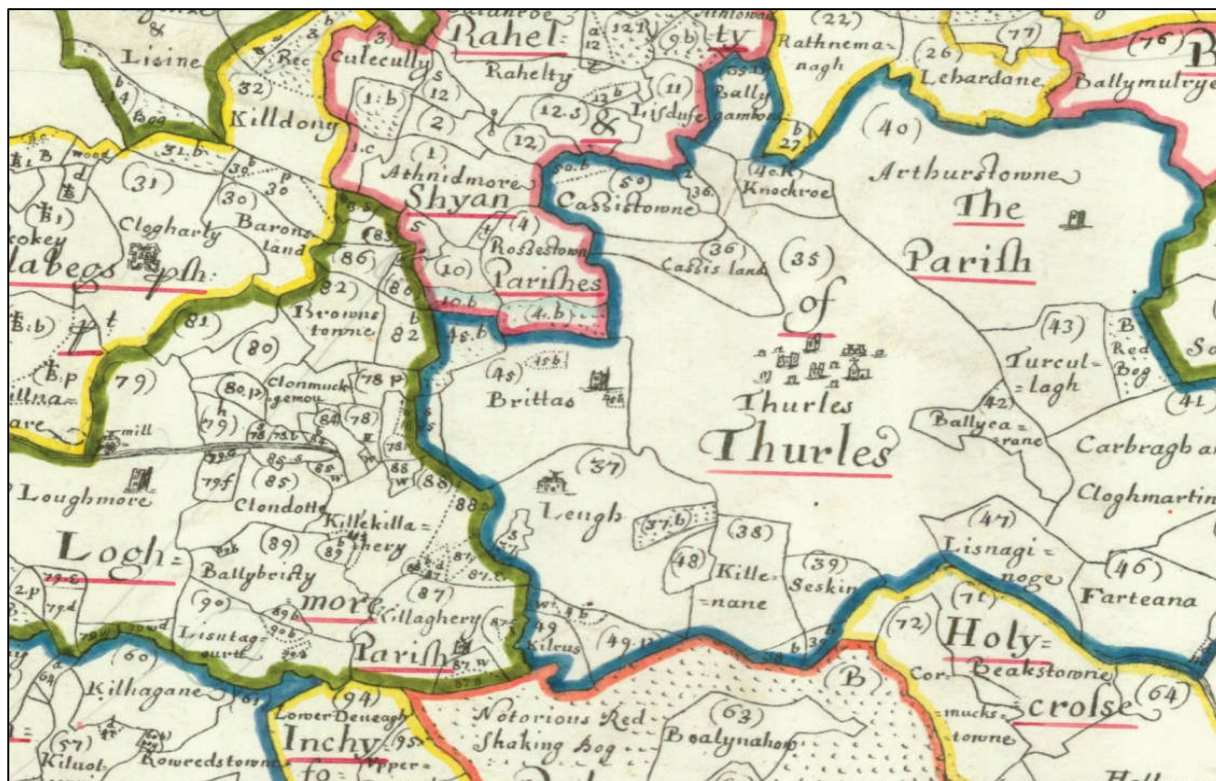


Figure 11-8: Townlands of Brittas, Rossestown and Brownstown depicted on Down Survey map.

Table 11-7: Townlands within the Proposed Wind Farm in Down Survey.

Townland	Down Survey Name	1641 Owner(s):	1670 Owner(s):	Parish	Profitable land	Unprofitable land	Forfeited
Brittas	Brittas	James Butler of Brittas (Catholic)	John Grace	Thurles	548 plantation acres	36 plantation acres	548 plantation acres
Rossestown	N/A	N/A	N/A	Thurles	N/A	Unprofitable bog	N/A
Clobanna	N/A	N/A	N/A	Thurles	N/A	Unprofitable bog	N/A
Brownstown	Mansellstowne	Gerald Cumerford (Protestant)	Earl of Ormond (Protestant)	Cullabegs	176 plantation acres	22 plantation acres	176 plantation acres
Killeenleagh	Kilkarkey	Bishop of Cashell (Protestant)	Bishop of Cashell (Protestant)	Cullabegs	81 plantation acres	35 plantation acres	81 plantation acres
Kilkillahara	Killekillagherey	Elizabeth Purcell alias Butler (Catholic)	Nicholas Purcell (Protestant)	Loughmore	44 plantation acres	311 plantation acres	311 plantation acres

11.3.10.2 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 development, 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 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 1840s revealed five pre-famine structures (Vernacular Structures 1-5) in close proximity to the proposed turbines and internal grid connection. In addition there are two more sites (Vernacular Structures 6-7) depicted on the 2nd Edition OS 25” map of 1900s only (**Figure 11-9 & Figure 11-10**).

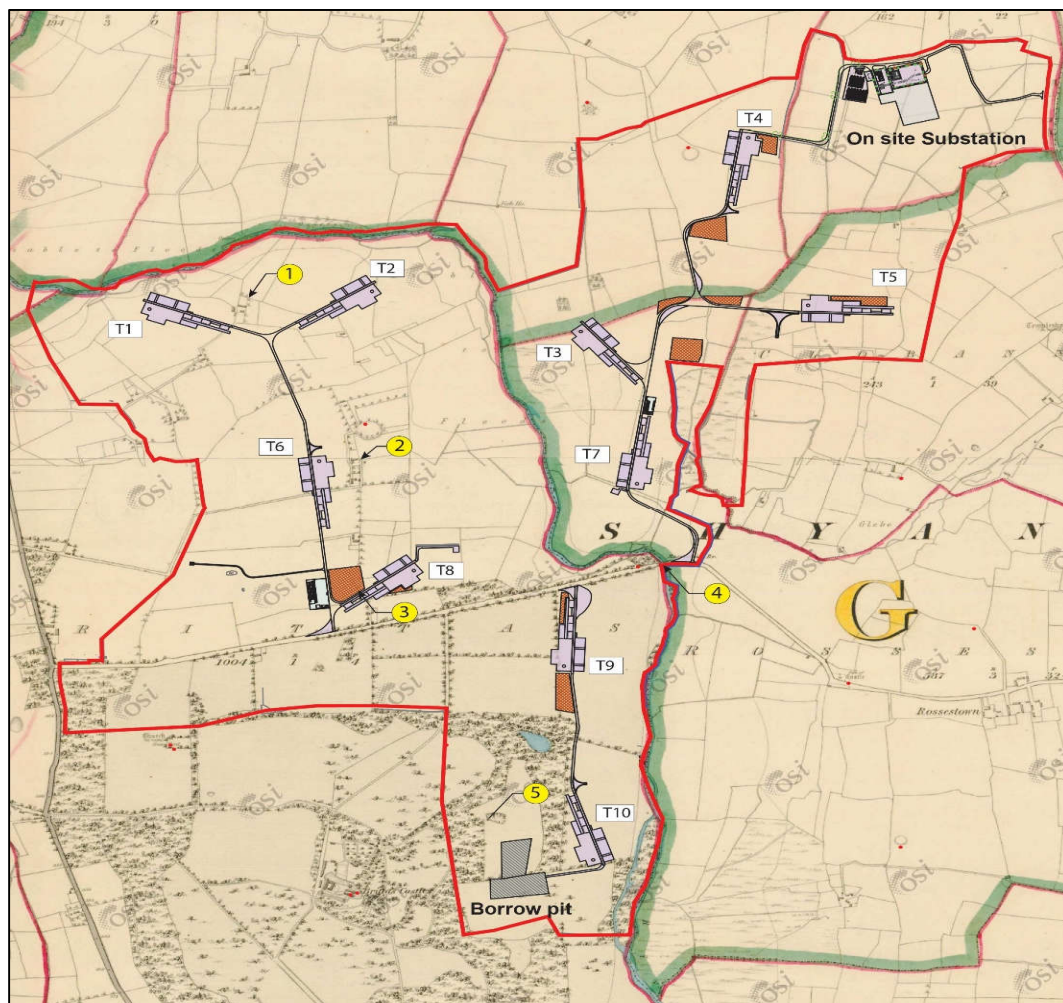


Figure 11-9: Vernacular structures (1-5) depicted on 1st Ed. map in proximity to the Proposed Wind Farm.

Vernacular Structure 1

Structure 1 is located between proposed T1 and T2 and c.20m to the N of the access track. The site consisted of possible single farm farmstead and is depicted on 1st Edition OS 6” map of 1843 as complex of four buildings. The farm is also marked on 2nd Edition OS 25” historic map. The location of the farm was visited during field walk and no above ground remnants of any of these structures was noted.

Vernacular structures 2

Structure 2 is located c.50m to the E of proposed T6. The site consisted of single farmstead with possible small gardens. It is depicted on the 1st Edition map as a complex of five buildings, possible garden and a road leading to the nearby located ringfort TN035-076. This farmstead is not denoted on the 2nd Ed. OS map and no trace can be found on the ground at present day.

Vernacular structure 3

Structure 3 is situated on the footprint of proposed T8 and associated spoil deposition area. It consisted of small farm depicted on 1st Ed. as two buildings and possible garden. The site is not marked on the 2nd Ed. historical map and there is no trace of the structure on the ground at present day.

Vernacular structure 4

Structure 4 still exists and is in use as Rossestown Bridge, located c.40m to the W of proposed site entrance to T7. It is three arch lime stone bridge with two cutwaters in the middle (**Plate 11-17**). Depicted on all historical mapping, although is not listed as a protected structure.



Plate 11-17: Rossestown Bridge (Structure 4). View from NW (LDARCH 2023)

Vernacular structure 5

Structure 5 is located c.130m to the W of proposed T10 and c.90m to the N of proposed borrow pit. It is the remains of the lime kiln situated within a local quarry (**Plate 11-18**). The kiln is depicted only on the 1st Ed map but quarry site is denoted on both maps. At the present day the quarry site is overgrown with mature trees and the stony chamber of the kiln only partially survived. Both together, quarry and remains of the kiln are interesting cultural addition to the whole Brittas Demesne site (See Section 11.3.4 and **Plate 11-16**).



Plate 11-18: Remains of lime kiln. View from SE (LDARCH 2023)

Examination of the 2nd Ed historic mapping revealed two more lime kilns (Vernacular Structure 6 & 7) located in proximity to the proposed T6 (see **Figure 11-10**). Both kilns almost abutting the proposed turbine, one to the E and second to the W of T6. Site visit during the field walk revealed no above ground remains of these features.

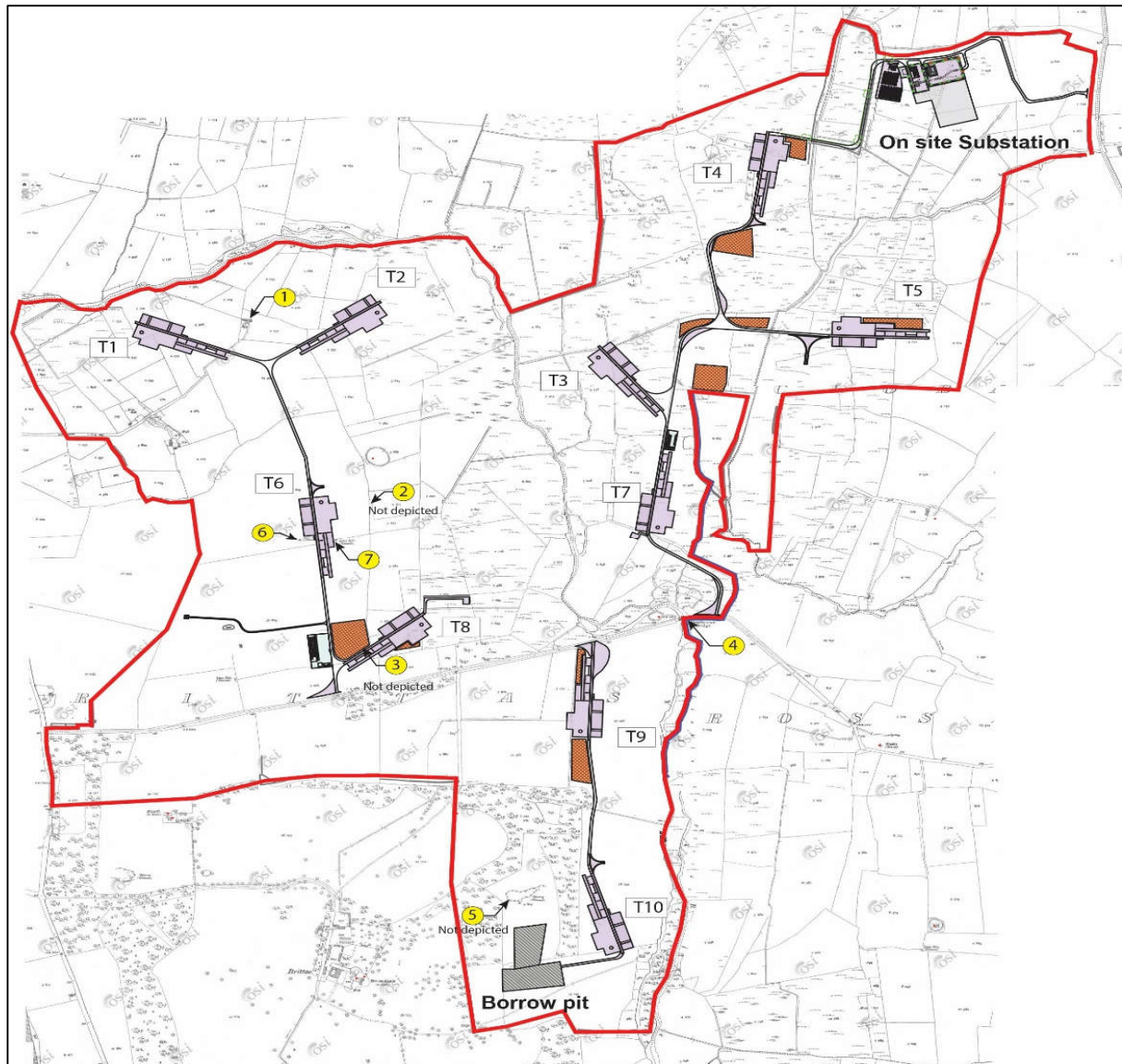


Figure 11-10: Vernacular structures (1,4,6 & 7) depicted on 2nd Ed.OS map within the Proposed Wind Farm

Boundaries

Further examination of the historic maps noted that the Proposed Wind Farm will be constructed within three parishes viz: the Parish of Thurles, Parish of Shyane and Parish of Loughmoe East, all in the ancient Barony of Eliogarty. These parishes boundaries are denoted in green on the 1st Ed OS map (**Figure 11-9**)

Furthermore, located at the NE part of the Proposed Wind Farm there is the Parish boundary of Laughmoe East and Shyane townlands which forms also a townland boundary of Clobanna and Rossestown townlands and townland boundary of Brownstown and Killeenleigh townlands (**Figure 11-9**).

11.3.10.3 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.

Examination of the placenames for all five townlands of the Proposed Wind farm was undertaken (**Table 11-8**)

Table 11-8: Townlands within study area

Townland	Irish Name	Translation
Brittas	<i>An Briotás</i>	N/A
Rossestown	<i>Baile an Róisigh</i>	baile: townland, town, homestead
Clobanna	<i>An Chloch Bheannach</i>	cloch, cloich: stone, stone building
Brownstown	<i>Baile an Bhrúnaigh</i>	baile: townland, town, homestead
Killeenleigh	<i>An Coillín Liath</i>	coillín: little wood; liath: grey, grey place, grey horse 'little grey wood'
Kilkillahara	<i>Cill Choill Eachra</i>	cill: church; coil: wood 'wooden church of Eachra'

11.3.11 Site Walkover

11.3.11.1 General

Field inspection of the proposed development was undertaken by two experienced archaeologists in March 2023 and May 2024. The turbines delivery route was driven along in March 2023 and proposed external grid connection was driven over in May 2024. Field walk consisted of walkover of all proposed turbines sites, proposed substation, temporary compound site, internal cabling and all other elements associated with the development. Field walkover was supported by drone survey undertaken in March 2023. No previously unrecorded features or sites were found during field inspection.

11.3.11.2 Turbine 1 (T1)

Proposed T1 will be located on irregular shaped grassy pasture on the townland of Brittas (**Plate 11-19**). The field is generally flat and surrounded by mature trees all around the boundary with the exception of the northern edge where the field is delimited by the River Suir, which also designates the Thurles and Loughmoe East Parish Boundary (**Plate 11-19**). Due to close distance to the River Suir there may be potential to discover previously unrecorded features, however no archaeology was found during field inspection.



Plate 11-19: Location of proposed T1. View from SE (LDARCH 2023).

11.3.11.3 Turbine 2 (T2)

Proposed T2 will be situated on irregular shaped unimproved field in townland of Brittas. The field is thickly covered with low grass and marsh in places (Plate 11-20). No obvious above ground level features were found at this location.



Plate 11-20: Location of T2. View from S (LDARCH 2023).

11.3.11.4 Turbine 3 (T3)

Proposed T3 will be situated on irregular shaped field covered with meadow and tall grass, in townland of Rossestown. Proposed turbine will abut and slightly overlay existing townland boundary between Brownstown and Rossestown (**Plate 11-21**). This boundary also forms the Parish boundary of Laughmore East and Shyane. No obvious or above ground level features were found at this location. Recorded townland/parish boundary consists of line of mature trees and a deep ditch.



Plate 11-21: View from SE of proposed location of T3. Note Laughmore East and Shyane Parish boundary formed by mature trees.

11.3.11.5 Turbine 4 (T4)

Proposed T4 will be situated on irregular shaped flat field in townland of Killeenleigh. Proposed location of the turbine was covered with a tall grass (**Plate 11-22**). Also, 'T' shaped line of trees was noted at the location. No previously unrecorded features were noted during the site visit. The nearest recorded monument (ringfort TN035-075) is located c.70m to the W of proposed T4.



Plate 11-22: Proposed location of T4. View from SE (LDARCH 2024).

11.3.11.6 Turbine 5 (T5)

Proposed T5 will be situated on sub-rectangular shaped flat pasture in townland of Clobanna (**Plate 11-23**). No obvious or above ground level features were found at this location.



Plate 11-23: Location of T5 from SE (LDARCH 2024)

11.3.11.7 Turbine 6 (T6)

Proposed T6 will be situated on large grassy pasture in townland of Brittas. The field is artificially divided into small plots by modern wire fence or trackways (**Plate 11-24**). Examination of historic mapping revealed several structures located in the vicinity of proposed T6. On the 1st ed. of OS map there is a small settlement c.50m which is not denoted on the 2nd Ed. There are however two lime kilns sites noted on the 2nd Ed and located almost on the footprints of T6. No trace of any of these structures was found during field inspection but possible remains may still be found below ground level. The closest recorded monument is a ringfort TN035-076 located c.150m to the NE. No previously unknown sites were found during field walk but close location to the fort and settlement denoted on historic maps may suggest attractiveness of these lands for the people in the past.



Plate 11-24: Location of T6. View from SW. Note ringfort TN035-076 on the second plan (LDARCH 2023)

11.3.11.8 Turbine 7 (T7)

Proposed T7 will be situated on amorphous shaped grassy pasture in townland of Rossestown. The pasture is generally flat, enclosed by the open drain/ditch all around and short section of the farming track to the south (**Plate 11-25**). Nothing of archaeological interest was noted during the field walk but close location to the fresh water (River Suir) may suggest potential for discovery of previously unrecorded sites.



Plate 11-25: View from S of proposed location of T7(LDARCH 2023).

11.3.11.9 Turbine 8 (T8)

Proposed T8 will be located on the flat pasture in townland of Brittas (**Plate 11-26**). A spoil deposition area and temporary site compound are also proposed to be located to the W of T8. Nothing of archaeological interest was noted during the field walkover. Examination of the pre-famine historic mapping revealed a small settlement located possibly on the footprints of spoil deposition area and hardstand of T8, however no trace of any structure was visible on the ground and precise location can't be established.



Plate 11-26: View from NE of proposed location of T8, temporary compound and spoil deposition area (LDARCH 2023)

11.3.11.10 Turbine 9

Proposed T9 will be situated on irregular shaped pasture in townland of Brittas. The pasture is flat, enclosed by the River Suir to the E, local road to the N and field boundary formed by mature trees on the west (**Plate 11-27**). Nothing of archaeological interest was noted during the field walk but the close proximity to the fresh water (River Suir) may suggest potential for the discovery of previously unrecorded sites.



Plate 11-27: View from SW of the proposed location of T9 (LDARCH 2023).

11.3.11.11 Turbine 10 (T10) and Borrow Pit

Proposed T10 will be located on two irregular shaped grassy fields within the townland of Brittas. The location is enclosed by River Suir to the E and line of trees to the W. The proposed borrow pit will be situated c.100m to the W of T10 within the same environmental (**Plate 11-28**). No previously unrecorded features were found during field inspection, however analyses of historic mapping combine with site visit revealed the remains of a lime kiln and quarry in the vicinity (c.130m to the W of proposed T10 and c.90m to the N of proposed borrow pit).



Plate 11-28: UAV image of proposed location of T10. View from SW. (LDARCH 2023)

11.3.11.12 Substation

The proposed substation site will be situated on three irregular shaped fields in townland of Killeenleigh. The fields are generally flat but uneven and were covered with high grass during the field inspection (**Plate 11-29**). Nothing of archaeological interest was noted.



Plate 11-29: View from NE of proposed substation site. (LDARCH 2024)

11.3.11.13 Internal Access Tracks

Proposed internal access tracks will have a standard running width of *circa* 5.5m with surface water collection drains on either side. These will be constructed using excavated and floating road techniques depending on the ground conditions. The entire track network was inspected by two experienced archaeologists in March 2023 and May 2024. Field inspection revealed no previously unknown archaeological or cultural heritage assets on the footprint of the proposed tracks, however desk-based research prior to the site visit revealed that the internal access track will cut through townland boundaries as well as the parish boundary at three locations, all of which were inspected.

The track section between T5 and T4 will traverse the Parish boundary of Laughmore East and Shyane townlands and also townland boundary of Clobanna and Rossestown townlands. The section between T4 and the on-site substation will traverse the townland boundary of Brownstown and Killeenleigh townlands.

11.3.12 Existing Receiving Environment of Grid Connection Route (GCR)

The Grid Connection Route will consist of a 110kV underground cable buried in the public road. Starting from the on-site substation entrance the proposed grid route will follow the L-4120 road south to the L-8017 Rossestown road and turn east. At the next junction it will turn south along the L-4119 road to Thurles town. At the T-junction with the L-8015 road the route will turn east until the fork in the road and will then follow the L-8014 (to the right) to Thurles substation (**Figure 11-11**).

The first section of the underground cable trenching in the road will traverse southward from the Wind Farm Site over the distance of *c.* 350 m between townlands of Killeenleigh and Coolgharrane. From there the next section will continue southward for a distance of *c.* 1.3km between townlands of Clobanna and Coolgharrane and Athnid More. The next section runs first southward and then in an easterly direction for a distance of *c.* 1km within the townland of Rossestown. From there a short section of cabling will continue to travel in a easterly direction between the townlands of Athnid More and Cassestown and then turn in a south southwesterly direction and travel for another 2.2km within the townland of Cassestown. From this point the proposed grid route will initially continue in a SSW direction before taking a sharp turn to the NE within and between the townlands of Farranreigh, Laghtagalla, Furze and Loughlahan. The last section of the grid route which connects to the existing Thurles Substation continues in a easterly direction and is located in the townland of Ballygammane.

11.3.12.1 Recorded Monuments along Proposed Grid Connection

A *circa* 120m buffer corridor along the grid route was assessed to establish potential physical effect to the recorded monuments located along the proposed grid connection route and was based on the typical 60m radius Zone of Notification (ZON) of the monuments in the area. There is only one monument (Ringfort TN041-026) situated within the 120m buffer corridor of the grid route (**Figure 11-11**). The ringfort TN041-026 is abutting the existing L-4119 road and consequently abutting the proposed grid connection on the west side of the road (see labelled site on **Figure 11-11**). The monument is depicted on both (1st and 2nd) historical OS maps as a roughly circular area. The site is described in the NMS database as follows: “the ringfort is *Located on a gradual SE-facing slope in rough meadow. A field boundary to the NW has been removed and the area (immediately NW of the ringfort) is used as a yard for old machinery. A roughly circular area (diam. 32.8m N-S; 29m E-W) defined by a low bank (Wth *c.* 2.2m; int. H 0.4m; ext. H 1.53m) which has been truncated and flattened. There is no bank at SE which may be the site of original entrance on the downslope side of the site and there is no visible evidence of an outer fosse. The interior, which slopes to the SE, is quite disturbed*” (www.archaeology.ie).

The site of the monument was visited in May 2024. Due to access constraints the monument was inspected only from the L-4119 road. The inspection revealed that its fully hidden by the line of hedges (**Plate 11-30**). No associated fosse/ditch was noted.



Plate 11-30: Site of the ringfort TN041-026. View from NE. (LDARCH 2024)

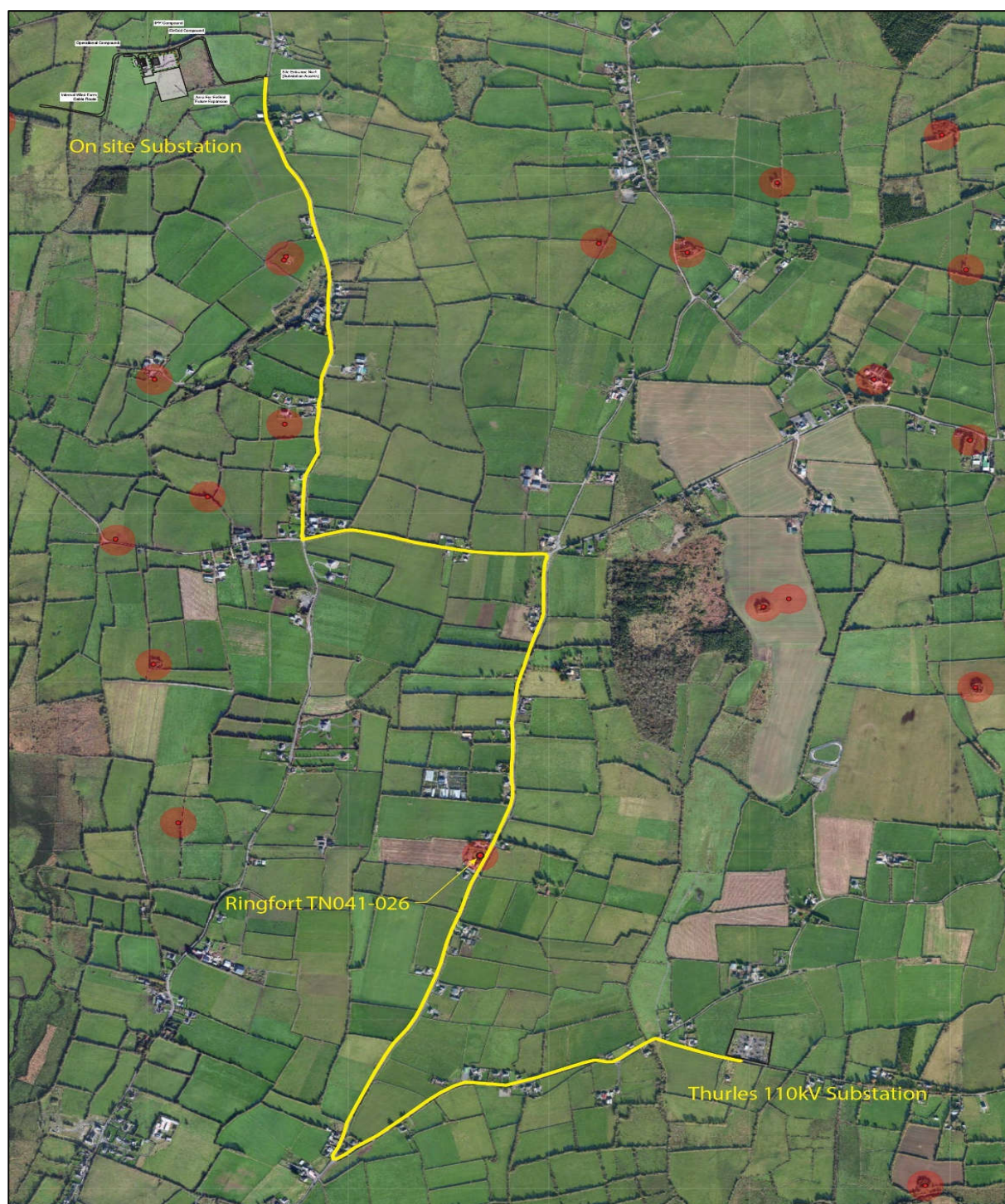


Figure 11-11: Location of the ringfort TN041-026 abutting proposed grid connection route

11.3.12.2 Excavations Ireland Database

Examination of the Excavations Bulletin (1970 – 2024) revealed a single entry for licensed archaeological works in the vicinity of the proposed grid connection. These works consisted of archaeological testing (License 07E0623) undertaken at Rossestown townland (c.80m to the W of proposed grid connection route), prior to a proposed residential development. Test-trenching commenced at the site on 13 July 2007 when seven trenches were investigated across the test area. Nothing of archaeological significance was discovered in any of the excavated trenches (www.excavations.ie).

11.3.12.3 Topographical files

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

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

There is a single protected structure situated in the vicinity of the proposed grid connection (see **Figure 11-12** and **Plate 11-31**). It is a detached three-bay single-storey vernacular house (RPS no: TRPS834), built c.1800, with recessed two-phase two-bay addition to west end and recessed two-bay addition to east end. The cottage is abutting the L-4119 road and consequently the proposed grid route.



Figure 11-12: Location of the protected structure abutting proposed grid connection to the W.



Plate 11-31: Protected structure (TRPS834) located in vicinity of proposed grid connection.

11.3.12.5 Field inspection

The entire grid connection route was inspected by an experienced archaeologist in May 2024. No previously unrecorded features or monuments were noted.

11.3.13 Existing Receiving Environment of Turbine Delivery Route (TDR)

The turbine components are expected to be delivered by sea to the Port of Foynes in County Limerick and transported to site along the national, regional and local road network. A total of 100 deliveries are expected, mostly at night.

It is proposed that the site will be accessed from Junction 25 on the M7 at Knockalton/Nenagh to the site entrance on Rossestown Road. This route will make use of the M7 motorway, the R498, the N62 and finally the Rossestown local road to the proposed project site.

A desktop survey of the TDR and associated pinch points (1-22) was carried out as part of this assessment (**Table 11-9**). The pinch points identified by Malachy Walsh and Partners represent areas where there is either oversail over walls *etc.* or where there will be temporary works put in place to facilitate delivery (i.e., the stoning out of a grassy surface, trees trimming, fence / walls /road signage temporary removal). The results of the TDR assessment were completely negative and revealed no effect to any of heritage sites where temporary works are proposed. Possible direct physical effect to unrecorded archaeological features was assessed at the locations where ground will be disturbed and revealed likely slight effect (see section **11.4.2.1**)

Table 11-9: Assessment of the pinch points of TDR

Ref #	Townland	Location	Recorded monuments in proximity	NIAH structures & RPS I proximity	Effect	Mitigation
1	Rossestown	Site Entrance to T7	Enclosure TN041-008 c.130m to the W	None	No effect	N/A
2	Brittas	Site entrance to T9	Enclosure TN041-0008 c.120m to the NE	None	No effect	N/A
3	Brittas	Site entrance to t8	None	None	No effect	N/A
4	Brittas	N62-Rossestown Road Junction	None	None	No effect	N/A
5	Brittas	N62-Brittas Road Junction	None	Adjacent to Brittas Castle: gate lodge, Reg. No. 22404112, TRPS830	No effect	N/A
6	Brittas	N62-Right Hand Bend	None	None	No effect	N/A
7	Brittasroad	N62-Cluain Glas	None	None	No effect	N/A
8	Racecourse	Tipperary Institute Roundabout	None	None	No effect	N/A
9	Bouladuff	R498/L4124 Junction	None	None	No effect	N/A
10	Castlequarter	R498 / Borrisoleigh Town	Within Zone of Notification of Borrisoleigh Historic town TN034-046	Adjacent to Castlequarter House Reg. No. 22309017, RPS: TRPS749	None	N/A
11	Ballyroan	R498	None	None	None	N/A
12	Glenkeen	R498	None	None	None	N/A
13	Rosnamulteeny	R498/L4141 Junction	None	Ross Cottage Reg. No. 22403405, RPS: TRPS345 c.120m to the W	None	N/A

Ref #	Townland	Location	Recorded monuments in proximity	NIAH structures & RPS I proximity	Effect	Mitigation
14	Bigpark / Glenmore Lower	R498	None	Orkney Lodge Reg. No. 22402805, RPS: TRPS179 c.100m to the E	None	N/A
15	Bigpark	R498	None	None	None	N/A
16	Bigpark	R498	None	None	None	N/A
17	Bigpark	R498	None	None	None	N/A
18	Bigpark	R498	Settlement deserted – medieval TN027-105 & Castle – motte TN027-105001 c. 200m to the NW	None	None	N/A
19	Sallypark	R498	None	None	None	N/A
20	Sallypark	R498	None	None	None	N/A
21	Curragh	R498	None	None (above 300m)	None	N/A
22	Knockalton Upper	M7/R498 Roundabout	Habitation site TN021-101 c.220m to the NW	None	None	N/A

11.4 Assessment of Impacts and Effects

11.4.1 Construction Phase (Indirect Effects)

Indirect effects, in terms of archaeology, architectural and cultural heritage are considered to be those effects which happen away from ‘the site’. This includes impacts on 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 11.4.3** below. No indirect effects were identified which would occur at the construction phase.

11.4.2 Construction Phase (Direct Effects)

Direct effect refers to a physical effect on archaeological and cultural heritage monuments, features or sites during the construction phase. Construction phase of the Proposed Development will consist of ground disturbance including topsoil removal and excavation of cable trenches. In that context potential physical effects to known and unknown potential archaeological features are outlined below. The assessment of effects

undertaken below differentiates between the potential effects of the following components of the proposed project;

1. The proposed wind farm site works that includes the turbines, hardstands, temporary compounds, temporary access track, internal underground cabling and access tracks, spoil deposition areas, borrow pit and meteorological lidar;
2. The proposed Grid Connection Route (GCR) works from the wind farm site to the Thurles 110kV substation; and
3. The proposed Turbine Delivery Route (TDR) works.

11.4.2.1 National Monuments in State Care

Proposed Wind Farm Works

No National Monuments in State Ownership/Guardianship are located within or adjacent proposed planning boundary and therefore there will be no direct effects on any by construction of the Proposed Wind Farm facilities. The nearest National Monument is The Holycross Abbey located c.8km to the SW from the proposed development. Indirect operational effects are addressed in section 11.4.2 below.

Proposed Grid Connection Route (GCR) Works

No National Monuments in State Ownership/Guardianship are located along the grid connection route and therefore there will be no direct effects on any by construction the proposed GCR.

Proposed Turbine Delivery Route (TDR) Works

No National Monuments in State Ownership/Guardianship are located in proximity of any of 22 pinch points of TDR. Therefore there will be no direct effects on National Monuments in State Ownership/Guardianship as a result of the proposed TDR works.

11.4.2.2 Recorded monuments

Proposed Wind Farm Works

There are four recorded monuments within the proposed planning boundary. None of these monuments are directly situated on the footprints of the proposed development and consequently there will be no direct physical effect to any of recorded monuments during the construction phase.

Proposed GCR Works

There is one recorded monument (ringfort TN041-026) abutting the proposed grid connection to the W. There is the possibility that the most outer limits of the ringfort or external fosse was already truncated by the public road to the E. There is some potential that features associated with the fort still remains beneath the ground level. In that context there will be likely slight direct physical effect on the ringfort TN041-026.

Proposed TDR Works

There are no recorded monuments within the c.120m wide corridor of the pinch points of the TDR. There is one Zone of Notification of Borrisoleigh Historic town (TN034-046) but no recorded structures nearby. Consequently, there will be no direct physical effect to any recorded monument structures.

11.4.2.2 Unrecorded sub-surface archaeological features

Proposed Wind Farm Works

There is potential for moderate physical effects to previously unrecorded sub-surface archaeological features during the construction phase. This unknown potential is based on: - (1) the 4 recorded monuments within the boundary of the proposed Wind Farm; (2) the large number of c.86, of recorded monuments, only within the 3km radius study area; (3) good quality land and close distance to fresh water (River Suir).

Proposed GCR Works

The proposed underground grid connection cables will be laid under the local roads. The ground under these roads was already disturbed during the road construction. In that context there will be likely slight or not significant physical effects to previously unrecorded sub-surface archaeological features during the excavation of the grid connection.

Proposed TDR Works

There will be some level of the ground disturbance for the TDR accommodation works immediately prior to the delivery of the turbine components. Analysis of all proposed pinch points along the route revealed that the ground disturbance will be minimized and concentrated mainly near existing roads. In that context there will likely be slight physical effects to previously unrecorded sub-surface featured during the accommodation works

11.4.2.3 Protected Structures and National Inventory of Architectural Heritage (NIAH)

Proposed Wind Farm Works

There are no Protected Structures or structures/items listed in the NIAH located within the boundary of proposed Brittas WF. The nearest Protected Structure to the development site is Brittas Castle (RPS99) located c.0.4km to the W of the proposed borrow pit. Consequently, there will be no direct physical effect to any of the structures during the construction phase.

Proposed GCR Works

There is one protected structure (vernacular house - TRPS834) abutting proposed grid connection to the W. Since existing public road is located to the E, there will be no direct effect to any of possible underground features associated with the structure.

Proposed TDR Works

Analysis of all proposed pinch points along the route revealed that there will be no direct physical effect to any of protected structures or structures listed in NIAH.

11.4.2.4 Cultural Heritage Sites

Proposed Wind Farm Works

Possible direct physical effects were assessed within c.100m corridor along proposed internal grid connection and within c.50m radius of the outer limits of the hardstands, compounds, substation, BESS, spoils deposition areas, borrow pit and met lidar. This assessment corridor was identified to take into consideration the possibility that not all heritage sites locations are mapped at their actual physical location on the ground.

There are a total of seven vernacular structures depicted on the 1st and 2nd Editions of OS historic maps and located within the limits of this assessment area (**Figure 11-79 & Figure 11-810**).

Vernacular structure 1: Examination of the historic mapping revealed that this farm complex is situated c.20m to the N of the access road between T1 and T2. There is no trace of this structure on the ground and consequently exact location can't be confirmed. Consequently, there is a possibility that sub-surface remains of the building still exist and in that context, there is likely to be a slight physical effect on vernacular structure 1.

Vernacular structure 2: Examination of the historic mapping revealed that this farm complex is located c.50m to the E of proposed T6. As there is no trace of these structures on the ground, exact location can't be confirmed. However more likely this settlement was abutting existing boundary to the W and consequently a safe distance to the proposed structures. Given this context there will likely be no significant physical effect on vernacular structure 2.

Vernacular structure 3: Examination of the historic mapping revealed that this farm complex is situated on the footprints of proposed spoil deposition area adjacent to T8. There is no visible trace of the buildings above the ground level. However possible remains may still exist under the ground. In that context there will likely be a moderate physical effect on vernacular structure 3.

Vernacular structure 4: Rossestown Bridge is located c.40m to the W of proposed site entrance to T7. There will be no direct physical effect to the bridge during the construction phase. There is however unlikely possibility that the bridge may be damaged during the machinery movement and in that context, there will be likely slight physical effect on the vernacular structure 4.

Vernacular structure 5: The quarry site and remains of the kiln are still visible and located c.60m to the NW of proposed T10. The existing remains of the kiln are situated outside of the 50m assessment zone, however including the quarry site these features create interesting cultural addition to the Brittas Demesne and were pointed in the assessment. Due to the distance from the proposed facilities, there will likely be a not significant physical effect on vernacular structure 5.

Vernacular structure 6: Examination of the 2nd Ed historic map revealed the site of the kiln almost abutting proposed T6 to the W. There is no trace of this feature on the ground, but possible sub-surface remains of the kiln may still exist. In this context there will likely be a moderate physical effect on vernacular structure 6.

Vernacular structure 7: The 2nd Ed map depicts a second lime kiln c.20m to the E of T6. As above, there is no trace of this feature on the ground but a possibility that sub-surface remains of the kiln may still exist below ground. Due to the distance to the proposed facility (T6), a likely physical effect on structure 7 will be classified as slight.

Boundaries: There are four locations where the proposed wind farm facilities will physically effect historic parish or townland boundaries. Construction of proposed T3 will have negative physical effect on Loughmoe East/Shyane Parish boundary. The same boundary will be affected again by the proposed internal underground cables/access track connecting T3, T5 and T4. Underground cables/access tracks to T5 will also have negative physical effect on the Rossestown and Clobanna townland boundary. The cables/tracks between T4 and the substation will have

negative effects on the Brownstown and Killeenleigh townland boundaries. Physical effect on the boundaries during the construction phase will be classified as likely moderate physical effects.

Proposed GCR Works

The proposed grid connection will be entirely excavated along existing roads. In that context there will be no direct physical effect to any of the heritage sites depicted on historical OSi maps.

Proposed TDR Works

Analysis of all proposed pinch points along the route showed that there will be no direct physical effect to any of heritage sites depicted on historical maps.

11.4.3 Operational Phase

The presence of the wind farm facilities during the operation phase may cause indirect changes or effects to the character of the archaeological or architectural heritage resource and landscape. Cultural visual effects can also combine with other environmental factors such as noise or light in some cases. Operational effects are discussed below only for the proposed turbines. The access roads, underground cables, substations etc. are excluded from this section of the assessment as they are not likely to effect the visual setting (landscape) of the monuments.

11.4.3.1 National Monuments in State Care

Cultural visual effects on National Monuments in State Ownership/Guardianship were assessed in a 10km radius area from the boundary limits of the Proposed Development. An exception to the 10km study area is the Rock of Cashel, located c.20km to the S of proposed Brittas WF and was included in the assessment due to the high importance of this ecclesiastical site. The 10km radius study zone is based on professional experience and several site walkovers associated with similar projects.

Analysis of Zone of Theoretical Visibility (ZTV) shows that theoretically all of the ten turbines will be visible on some level from the location of the two monuments within the study zone (**Figure -11-13**). On the ground, there may be several factors such as boundaries, trees or buildings which may reduce potential visual effects and in that context the assessment was supported by photomontages undertaken from the location of the effected monuments.

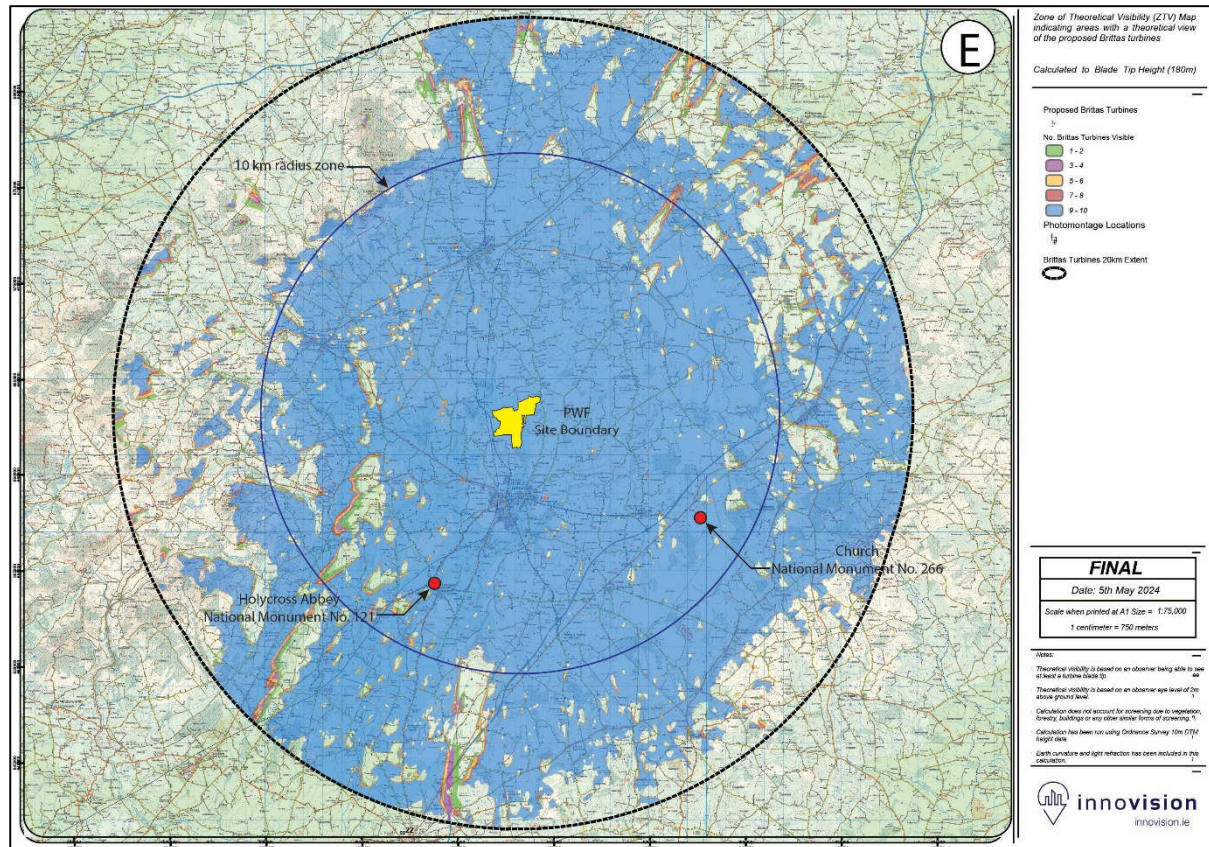


Figure -11-13: Location of National monuments overlaid ZTV's results

Church (National Monument No. 266): This ecclesiastical site is located c.9.4km to the SE of Proposed Development planning boundary. The entire complex consists of two churches, a round tower and sheela-na-gig that are accessible and open for the public. Analysis of ZTV shows that all no 10 turbines will be theoretically visible from the location of the monuments. However, results of the photomontage revealed that this ecclesiastical site is surrounded by the overgrown boundary and the proposed turbines will not be visible from the central point of the monument site. Considering this and a distance to the development, the likely cultural visual effect on the monument during operation phase will be classified as not significant.

Holycross Abbey (National Monument No. 121): The Holycross Abbey is located c.8km to the SW of proposed planning boundary and it is currently a significant tourist's attraction. Analysis of ZTV shows that all no 10 turbines will be theoretically visible from the location of the monuments. However, results of the photomontage revealed that this ecclesiastical site is surrounded by mature trees and houses. Consequently, the proposed turbines will not be visible from the monument site. Considering this and the distance to the development, the likely cultural visual effect on the monument during operation phase will be classified as not significant.

Rock of Cashel (National Monument No. 128): The Rock of Cashel is located c.21km to the S of proposed Brittas WF. Analysis of the results of photomontage undertaken from the location of the site revealed that all turbines will be visible from the elevated monument site (Figure 11-14). Considering that and a distance (over c.20km) to the proposed development, the likely cultural visual effect on the monument during operation phase will be classified as slight.

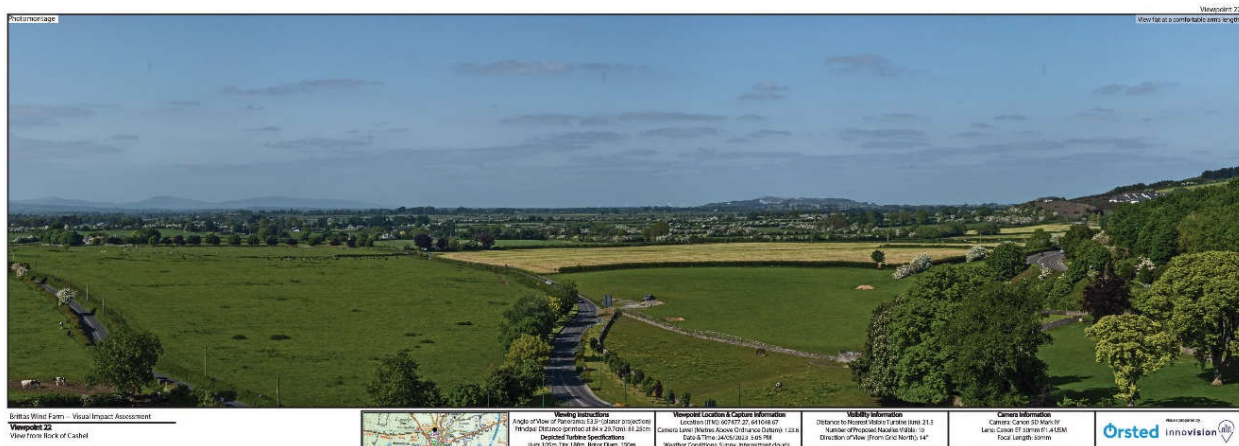


Figure 11-14: Results of photomontage prepared from location of Rock of Cashel site.

11.4.3.2 Recorded monuments within the proposed planning boundary of the development.

The indirect operational visual effect on the recorded monuments within the planning boundary was assessed (**Figure 11-15**). The potential visual effect was **established** by a 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).

Due to proximity of the development, the monuments were assessed on the visual factor, but potential noise and light/shadow were also considered. In this regard the main factor to take into consideration in determining the possible effects was the present state / **condition** of the monuments.

Ringfort TN035-075: The likely cultural visual effect on the monument during operation phase will be classified as slight. This rating of the effect is based on: (1) – ringfort is located c.70m W of the nearest proposed T4; (2) – monuments is visible above ground level but is located in dense overgrown vegetation; (3) – there is no public access to the site.

Ringfort TN035-076: The likely cultural visual effect on the monument during operation phase is classified as slight. This assessment was based on: (1) – ringfort is located c.150m NE of the nearest proposed T6; (2) – monuments is visible above ground level with easy access to the interior; (3) – there is no public access to the site.

Enclosure TN041-008: The likely cultural visual effect on the monument during operation phase is classified as not significant. This assessment was based on: (1) – enclosure is located c.130m to the S from the nearest T7; (2) – there is no visible trace of the enclosure on the ground.

Enclosure TN041-087: The likely cultural visual effect on the monument during operation phase is classified as not significant. This assessment was based on: (1) – enclosure is located c. 400 m to the SW from T9 & c. 500m NW from T10; (2) – field inspection revealed no visible evidence of the enclosure above ground.



Figure 11-15: Recorded monuments within planning boundary and vicinity to the development

11.4.3.3 Recorded monuments within the 3km study area

The likely cultural visual effects on recorded monuments were assessed within 3km radius area of the proposed turbine locations. The defined 3km radius study zone is based on professional experience and several site walkovers associate with similar projects.

This assessment was supported with the results of the ZTV analysis and photomontage undertaken from selected locations of the most visible monuments or monuments open to the public. Analysis of ZTV shows that theoretically all of the ten turbines will be visible on some level from the location of the monuments (**Figure 11-16**). On the ground, there may be several factors such as boundaries, trees or buildings which may reduce the

potential visual effect and in this context it is not possible to establish precisely the potential cultural visual effect on each of the recorded monuments within the 3km radius study zone.

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 estimate the potential level of the visual effects. These assessment elements include;

- Class and type of the monuments: e.g. highly visible churches or castles will be more visually effected than low level monuments or monuments with no above ground remains;
- Location: e.g. monuments within 1km of the proposed turbines will be more visually effected 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 effected than monuments in open exposed areas of the surrounding landscape; and
- Public access to the monuments was also considered in the assessment.

In totality there are two recorded monuments where the likely cultural visual effect was classified as *significant* (**Figure 11-18**), nineteen classified as *slight* and sixty monuments as *not significant*. All assessed monuments are located within 3km radius zone (excluding the four monuments within the boundary that are assessed in the section above (11.4.2.2)). In addition, there are two monuments assessed outside the 3km study zone (c.3.7km to the NW of proposed WF planning boundary (**Figure 11-17**)). These are a tower house TN035-030005 and a church TN035-030002. This location was visited during the field walk and combined with results from photomontage, the likely visual effect to the church TN035-030002 was classified as *moderate*.

The locations and likely cultural visual effect to the monuments is mapped and tabulated below (**Figure 11-17; Table 11-10**).

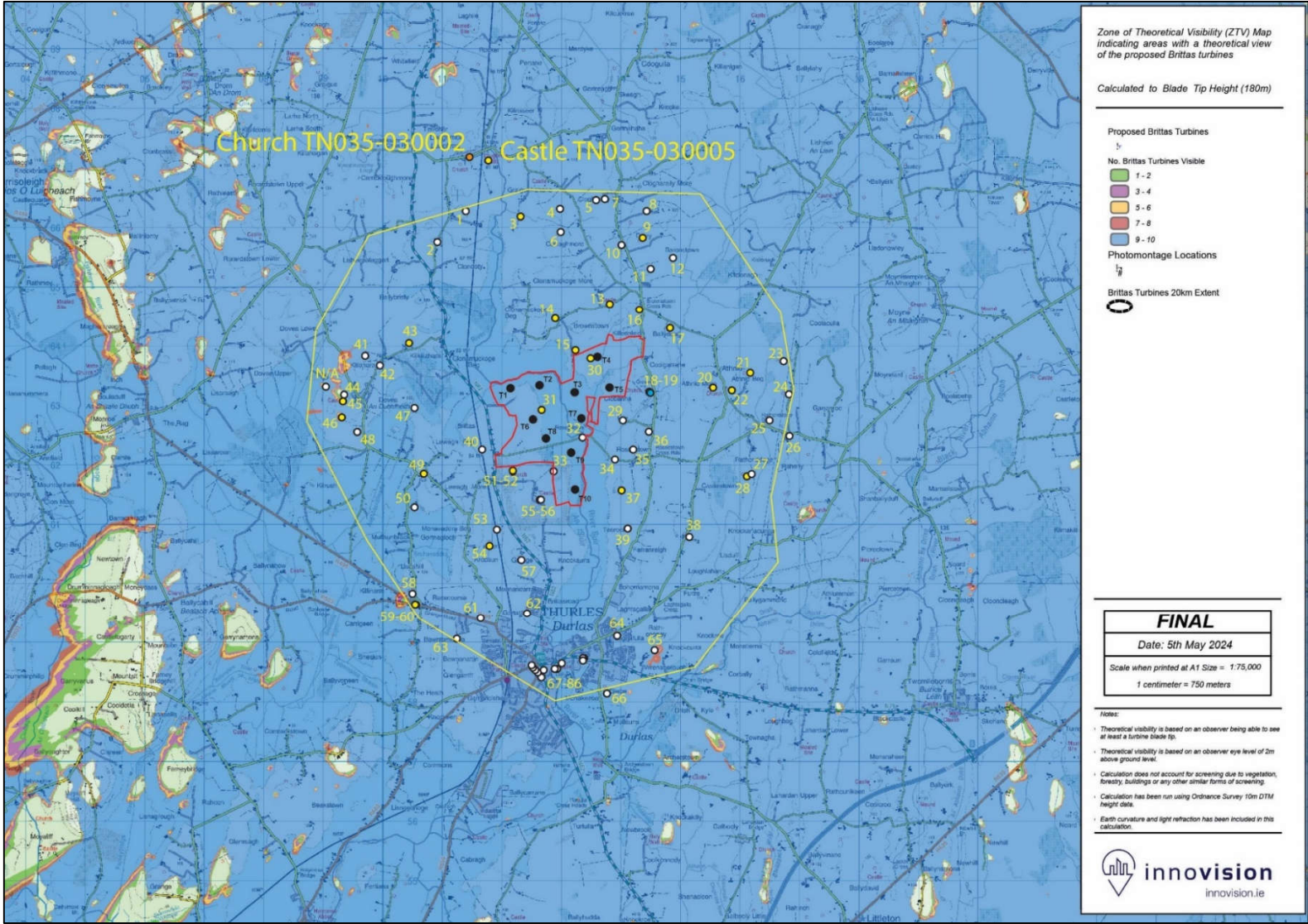


Figure 11-16: Recorded monuments within 3km radius zone overlaid results of ZTV

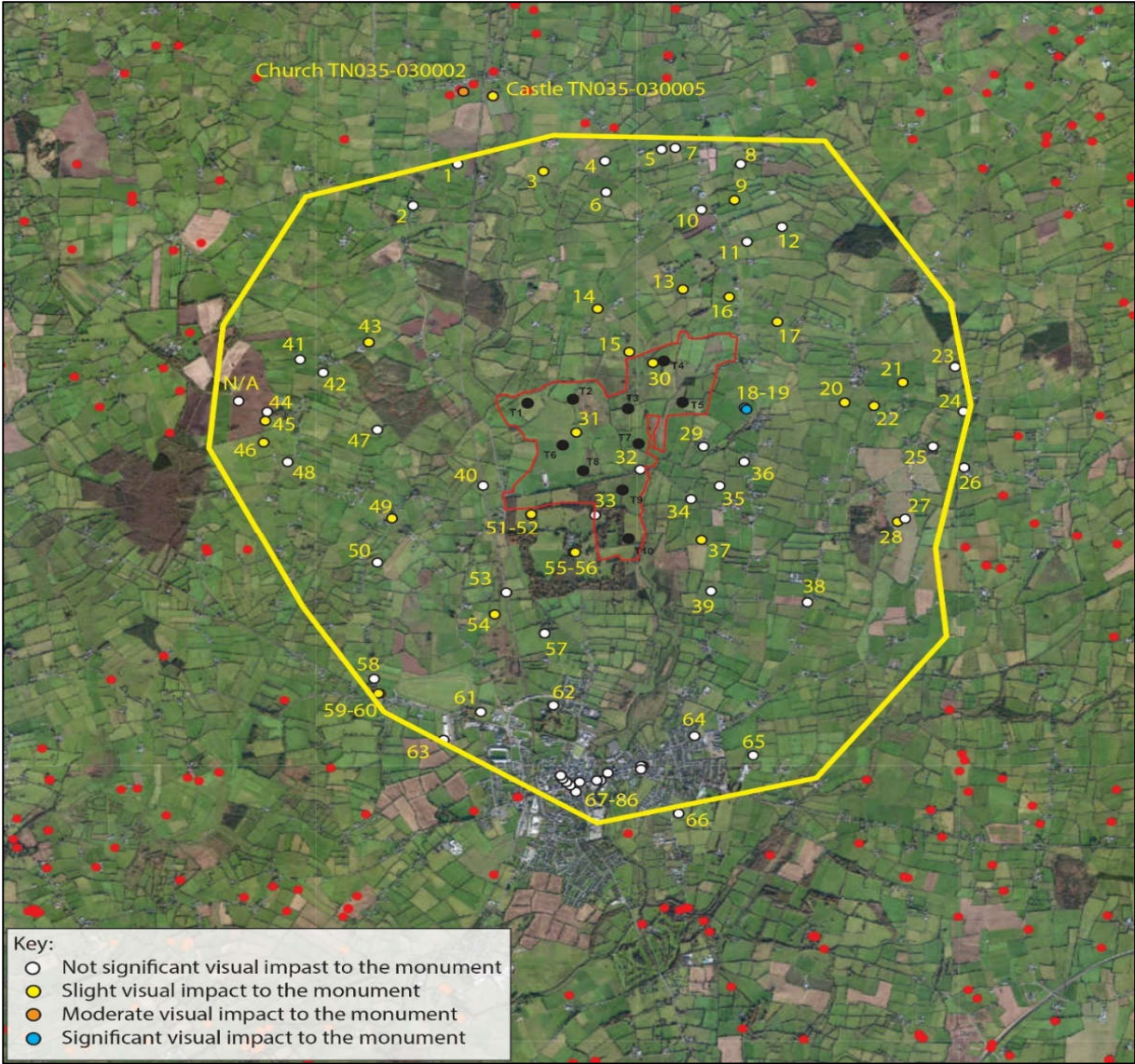


Figure 11-17: Potential visual effect to the recorded monuments within c.3km study zone

Table 11-10: Likely visual effects on the monuments within c.3km study zone

Map No.	SMR No.	Class	Description	Distance to the Nearest Turbine	Potential cultural visual effect
1	TN035-032----	Enclosure	Not visible at ground level	c. 3.2 km to the NW from T4 & T2	not significant
2	TN035-052----	Enclosure	Not visible at ground level	c. 2.7 km to the NW from T1	not significant
3	TN035-036----	Ringfort - rath	Upstanding monument; no visual blockers nearby; no public access	c. 2.6 km to the NW from T4	slight
4	TN035-039----	Enclosure	Not visible at ground level	c. 2.5 km to the N from T4	not significant
5	TN035-040----	Enclosure	Barely visible at the ground	c. 2.6 km to the N from T4	not significant
6	TN035-053----	Ringfort - rath	Upstanding monument; field boundary partially blocking view to the S; no public access	c. 2 km to the N from T4	not significant

Map No.	SMR No.	Class	Description	Distance to the Nearest Turbine	Potential cultural visual effect
7	TN035-041----	Moated site	Not visible at ground level	c. 2.6 km to the N from T4	not significant
8	TN035-046----	Enclosure	Not visible at ground level	c. 2.5 km to the NE from T4	not significant
9	TN035-057----	Ringfort - rath	Upstanding monument; field boundary partially blocking view to the S; no public access	c. 2 km to the NE from T4	slight
10	TN035-054----	Enclosure	Not visible at ground level	c. 1.9 km to the N from T4	not significant
11	TN035-058----	Enclosure	Barely visible at the ground	c. 1.6 km to the NE from T4	not significant
12	TN035-059----	Castle - unclassified	Not visible at ground level	c. 2 km to the NE from T4	not significant
13	TN035-056----	Castle - tower house	In very poor state; accessible but no public access	c. 0.9 km to the N from T4	slight
14	TN035-055----	Enclosure	Barely visible at the ground	c. 1 km to the NW from T4	slight
15	TN035-074----	Enclosure	Upstanding monument; no visual blockers nearby; no public access	c. 0.4 km to the WNW from T4	slight
16	TN035-060----	Ringfort - rath	Upstanding monument; field boundary partially blocking view to the S; no public access	c. 1 km to the NE from T4	slight
17	TN035-077----	Ringfort - rath	Large impressive fort; no visual blockers nearby; accessible but no public access	c. 1.2 km to the NE from T4	slight
18	TN035-078----	Church	Upstanding monument; no visual blockers nearby; open for the public	c. 0.6 km to the E from T5	significant
19	TN035-078001-	Graveyard	Graveyard in use at present day; no visual blockers nearby; open for the public	c. 0.6 km to the E from T5	significant
20	TN035-079----	Church	Upstanding monument; no visual blockers nearby; no public access	c. 1.7 km to the E from T5	slight
21	TN035-081----	Enclosure	Upstanding monument; no visual blockers nearby; no public access	c. 2.3 km to the E from T5	slight
22	TN035-080----	Ringfort - rath	Upstanding monument; no visual blockers nearby; accessible but no public access	c. 2 km to the E from T5	slight
23	TN036-035----	Enclosure	A poorly preserved site situated in forest plantation; no public access	c. 3 km to the E from T4	not significant
24	TN036-037----	Ringfort - rath	Poorly preserved monument; blocked by a boundary to the S and W; no public access	c. 3 km to the E from T5	not significant
25	TN041-015----	Enclosure	Not visible at ground level	c. 2.7 km to the SE from T5	not significant
26	TN042-001----	Ringfort - rath	Upstanding monument; block by a boundary and houses; accessible but no public access	c. 3.4 km to the E from T7	not significant
27	TN041-017----	Enclosure	Not visible at ground level	c. 3 km to the E from T9	not significant
28	TN041-016----	Ringfort - rath	Upstanding monument; no visual blockers nearby; no public access	c. 2.8 km to the E from T10	slight
29	TN041-009----	Ringfort - rath	Barely visible at the ground	c. 0.6 km to the E from T7	not significant
30	TN035-075----	Ringfort - rath	Assessed within planning boundary	-	-
31	TN035-076----	Ringfort - rath	Assessed within planning boundary	-	-
32	TN041-008----	Enclosure	Assessed within planning boundary	c. 130 m to the S from T7	not significant
33	TN041-087----	Enclosure	Assessed within planning boundary	-	-
34	TN041-010----	Castle - unclassified	Not visible at ground level	c. 700 m to the E from T9	not significant
35	TN041-011----	Enclosure	Not visible at ground level	c. 1 km to the E from T9 & c. 1km SE from T7	not significant
36	TN041-014----	Enclosure	Upstanding monument; block by a boundary	c. 1.1 km to the E from T7	not significant

Map No.	SMR No.	Class	Description	Distance to the Nearest Turbine	Potential cultural visual effect
37	TN041-013----	Ringfort - rath	Assessed within planning boundary and vacinity	c. 0.7 km to the E from T10	slight
38	TN041-026----	Ringfort - rath	Upstanding monument; block by a boundary and houses; accessible but no public access	c. 2.0 km to the SE from T10	not significant
39	TN041-024----	Enclosure	Not visible at ground level	c. 1.0 km to the SE from T10	not significant
40	TN041-004----	Earthwork	Not visible at ground level	c. 1 km to the W from T8	not significant
41	TN035-067----	Earthwork	Not visible at ground level	c. 2.5 km to the NW from T1	not significant
42	TN035-068----	Enclosure	Impossible to examine site due to dense cover of vegetation	c. 2.3 km to the NW from T1	not significant
43	TN035-069----	Ringfort - rath	Upstanding monument; view partially block by the house to the S; accessible but no public access	c. 1.9 km to the NW from T1	slight
44	TN035-070----	Earthwork	Not visible at ground level	c. 2.8 km to the W from T1	not significant
45	TN035-071----	Castle - tower house	High upstanding castle; view partially block by the trees to the NE; temporary closed for the public but may be reopen	c. 2.9 km to the W from T1	moderate
46	TN035-072----	Ringfort - rath	Upstanding monument; view partially block by boundary to the E; no public access	c. 2.9 km to the W from T1	slight
47	TN035-073----	Earthwork	Not visible at ground level	c. 1.7 km to the W from T1	not significant
48	TN041-003----	Enclosure	Not visible at ground level	c. 2.8 km to the W from T6	not significant
49	TN041-005----	Ringfort - rath	Upstanding monument; view partially block by the houses to the N and S; accessible but no public access	c. 2 km to the SW from T8	slight
50	TN041-006----	Ringfort - rath	Upstanding monument; view block by the modern farm to the E; no public access	c. 2.7 km to the W from T10	not significant
51	TN041-007----	Church	Poorly preserved church; view blocked by mature trees to the E; no public access	c. 0.7 km to the W from T8	slight
52	TN041-007001-	Graveyard	Graveyard not in use; view blocked by mature trees to the E; no public access	c. 0.7 km to the W from T8	slight
53	TN041-076----	Earthwork	Not visible at ground level	c. 1.5 km to the SW	not significant
54	TN041-022----	Ringfort - rath	Upstanding monument; view partially block by the boundary; no public access	c. 1.4 km to the SW from T10	slight
55	TN041-012001-	Castle - unclassified	Not visible at ground level; original castle was replaced by full-scale replica of Warwick Castle; no public access	c. 0.6 km to the W from T10	not significant
56	TN041-012002-	Bawn	No public access	c. 0.6 km to the W from T10	not significant
57	TN041-023----	Enclosure	Upstanding monument; view block by the boundary and house to the NE; no public access	c. 1.4 km to the SW from T10	not significant
58	TN041-020----	Ringfort - rath	Highly overgrown and in poor state; view block by the houses to N and S; accessible but no public access.	c. 3.2 km to the SW from T10	not significant
59	TN041-021001-	Castle - unclassified	Not visible at ground level	c. 3.2 km to the SW from T10	not significant
60	TN041-021002-	Burial ground	Graveyard in use and open for public.	c. 3.2 km to the SW from T10	slight
61	TN041-035----	Earthwork	Not visible at ground level	c. 2.6 km to the SW from T10	not significant
62	TN041-040----	Ringfort - rath	Highly overgrown and in poor state; view block by the houses to E; no public access.	c. 1.7 km to the SW	not significant

Map No.	SMR No.	Class	Description	Distance to the Nearest Turbine	Potential cultural visual effect
63	TN041-036----	Enclosure	Not visible at ground level	c. 2.8 km to the SW	not significant
64	TN041-041----	Ringfort - rath	View blocked by the houses all around the fort	c. 1.8 km to the S	not significant
65	TN041-045----	Ringfort - rath	Barely visible at the ground	c. 2.3 km to the S	not significant
66	TN041-044----	Enclosure	Upstanding monument; view block by the boundary and houses to the N	c. 2.9 km to the S	not significant
67	TN041-042----	Historic town	Consists several monuments assessed separately	c. 2.5 km to the S	-
68	TN041-042001-	Castle - tower house	Located in the Thurles Town; accessible but view blocked by the houses	c. 2.5 km to the S	not significant
69	TN041-042002-	Castle - tower house	Located in the Thurles Town; accessible but view blocked by the houses	c. 2.5 km to the S	not significant
70	TN041-042003-	Church	No trace of the church visible	c. 2.5 km to the S	not significant
71	TN041-042004-	Castle - motte	Not visible at ground level	c. 2.5 km to the S	not significant
72	TN041-042005-	Sheela-na-gig	Located in the Thurles Town; accessible but view blocked by the houses	c. 2.5 km to the S	not significant
73	TN041-042006-	Bridge	Located in the Thurles Town; accessible but view blocked by the houses	c. 2.5 km to the S	not significant
74	TN041-042007-	Town defences	Not visible at ground level	c. 2.5 km to the S	not significant
75	TN041-042008-	Religious house - Carmelite friars	Not visible at ground level	c. 2.5 km to the S	not significant
76	TN041-042009-	Church	Not visible at ground level	c. 2.5 km to the S	not significant
77	TN041-042010-	Tomb - effigial	Located in the Thurles Town; accessible but view blocked by the houses	c. 2.5 km to the S	not significant
78	TN041-042011-	Graveslab	Located in the Thurles Town; accessible but view blocked by the houses	c. 2.5 km to the S	not significant
79	TN041-042012-	Memorial stone	Located in the Thurles Town; accessible but view blocked by the houses	c. 2.5 km to the S	not significant
80	TN041-042015-	Gateway	Not visible at ground level	c. 2.5 km to the S	not significant
81	TN041-042016-	Gateway	Poorly survived; accessible but view blocked by the houses	c. 2.5 km to the S	not significant
82	TN041-042017-	House - indeterminate date	Poorly survived; accessible but view blocked by the houses	c. 2.5 km to the S	not significant
83	TN041-042018-	Graveyard	Located in the Thurles Town; accessible but view blocked by the houses	c. 2.5 km to the S	not significant
84	TN041-042019-	Graveyard	Located in the Thurles Town; accessible but view blocked by the houses	c. 2.5 km to the S	Not significant
85	TN041-042020-	Bawn	Poorly survived; accessible but view blocked by the houses	c. 2.5 km to the S	not significant
86	TN041-042021-	Stone sculpture (present location)	Located in the Thurles Town; accessible but view blocked by the houses	c. 2.5 km to the S	not significant

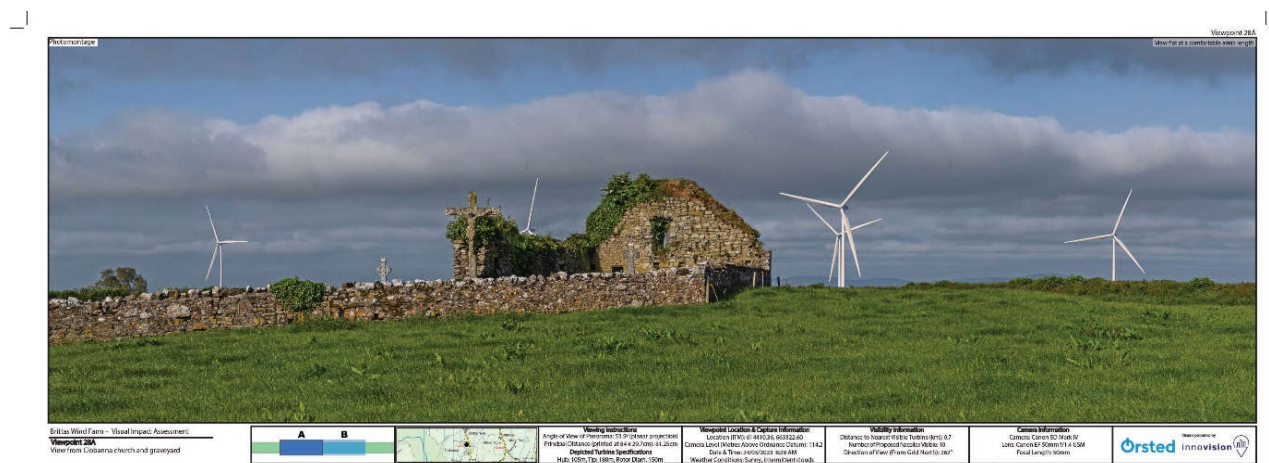


Figure 11-18: Results from photomontage prepared at the location of the church and graveyard (TN035-078 and TN035-078001)

11.4.3.4 Built Heritage including RPS / NIAH 3km of the proposed turbines

Analysis of the Zone of Theoretical Visibility shows that all ten turbines will be visible on some level from the location of the Protected Structures and those listed in NIAH (**Figure 11-19**). The vast majority of the likely effects were classified as not significant in this assessment. This was based on settings and distance to the Proposed Development. The closest located complex of the structures is situated within Brittas Demense and in this regard was classified as likely slight. Two other structures, the creamery and single-storey vernacular house were also classified as likely slight due to the possibility of cultural visual effects (**Figure 11-19**).

Thurles town: Over a hundred structures are situated within Thurles Town. All of them are well hidden within the town buildings, trees etc. In this context the likely visual effect will be not significant.

Dovea Village: Four in total structures are situated within Dovea village. All structures are blocked by other buildings or belong to the private owners. In this context there will be no visual effect to any of them and consequently likely visual effect will be not significant.

Brittas Demesne: The entire site consists of a country house (Reg. No. 22404101) built on the site of a medieval castle), a second single-storey house (Reg. No. 22404111) in use, a gate lodge as well as walls, gates and railings (Reg. No. 22404113). There is a possibility that the proposed turbines will be visible from some of these features. However, Brittas Demesne belongs to the private owner who is involved in the proposed development. In that context potential visual effect will be classified as likely slight.

House and Creamery: The Detached three-bay single-storey vernacular house, built c.1800 (Reg. No. 22404102) and the Ballyduag Creamery built c. 1915 (TRPS769) are located adjacent to the main road (L-4119) and in that context visual effect will be classified as likely slight.

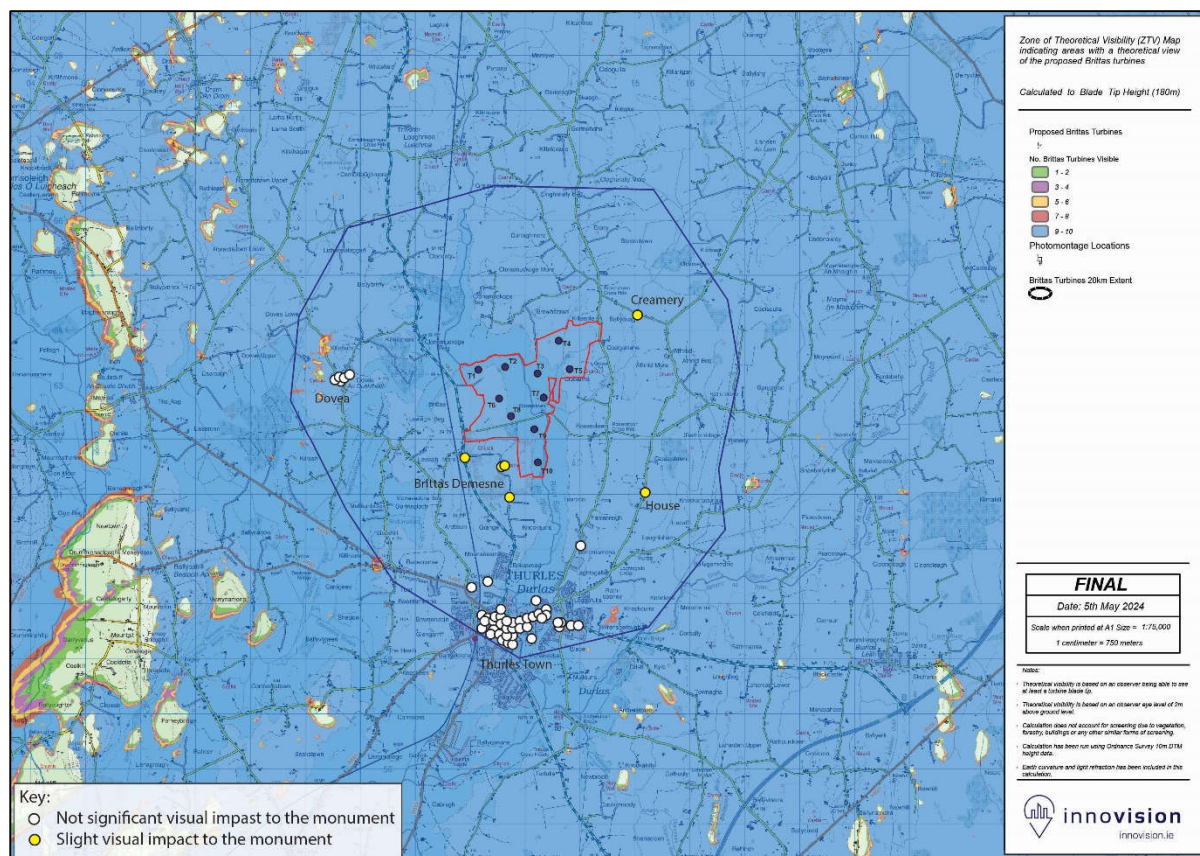


Figure 11-19: Potential visual effect to the protected structures and structures listed in NIAH within c.3km study zone

11.4.3.5 Cultural Heritage Sites

The Rossestown Bridge is located 250m NE to the nearest proposed T9. The bridge is not a protected structure but is accessible and in use. The likely visual effect to this feature is classified as slight.

The likely visual effect to the remains of the kiln located within Brittas demesne is classified as slight as it is situated within private property.

The likely visual effects to the other cultural heritage sites within the Proposed Development and its vicinity is classified as not significant as no trace of the sites survive above ground.

11.4.4 Decommissioning Phase

There will be no significant potential effects on the archaeological, architectural and cultural heritage environment during the decommissioning of the Proposed Development. Potential subsurface archaeological issues will have been adequately resolved by the 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 effects to build heritage such as NIAH or RPS structures as a result of the decommissioning phase of the development are anticipated.

11.4.5 Do-Nothing

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

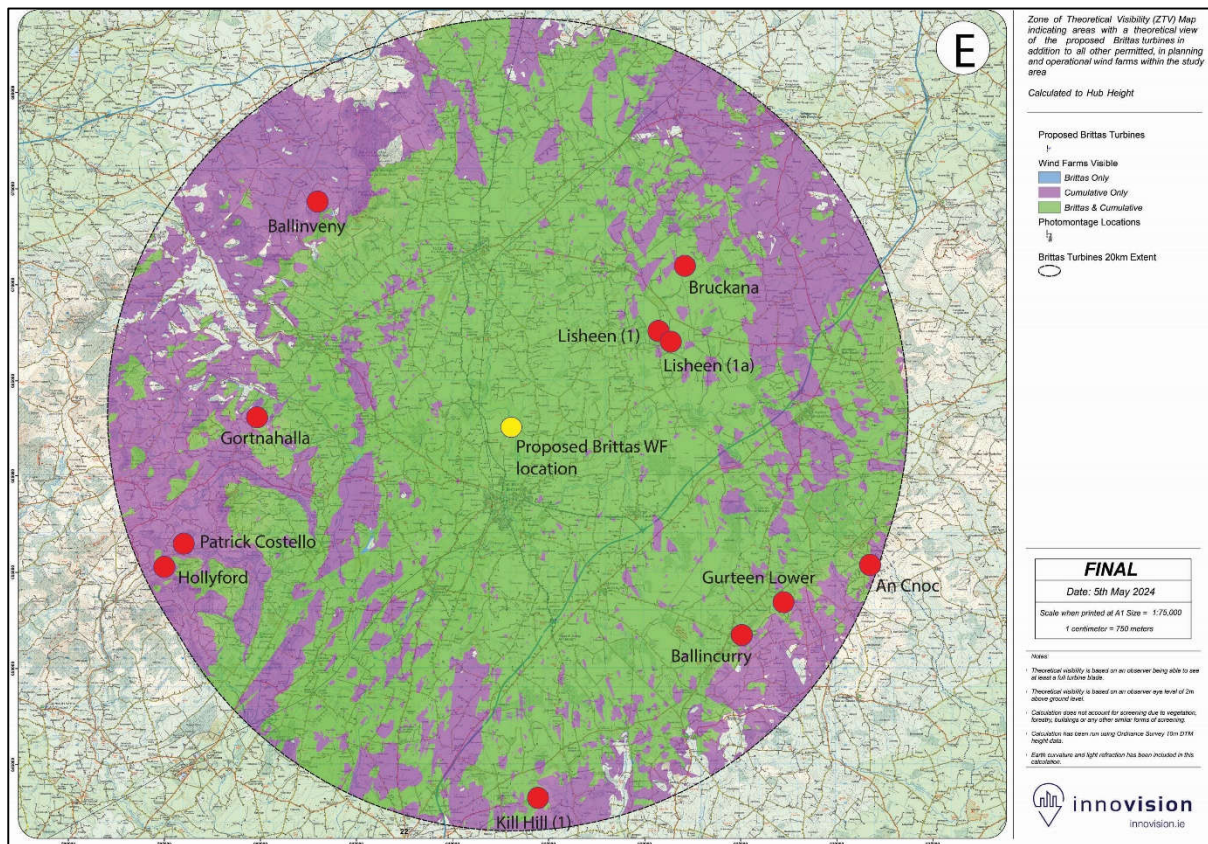


Figure 11-20: Location of existing and permitted wind farms within 20km radius zone overlaid results of ZTV

11.5 Mitigation and Monitoring Measures

11.5.1 Mitigation Measures

11.5.1.1 Construction Phase

- All groundworks associated with the construction works, turbines hardstands, temporary compound, Met Lidar, spoil deposition areas, borrow pit and internal grid connection/access tracks should be archaeologically monitored under licence from the NMS;
- All ground works associated with the Grid Connection Route should be archaeologically monitored within the ZON of the ringfort TN041-026 and under the license from NMS;
- Groundworks associated with cuttings through the townland/parish boundaries must be kept to a minimum. The cutting locations of these boundaries should be archaeologically monitored and include photographs, survey and written descriptions;
- All ground disturbance works associated with Turbine Delivery Route should be archaeologically monitored under the license from NMS;
- Where possible, it is proposed to excavate external grid connection trench to the East side of the road to minimize potential physical impact to the recorded ringfort TN041-026.

11.5.1.2 Operational Phase

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

11.5.1.3 Decommissioning Phase

All townland / parish / barony boundaries affected by the construction of the Proposed Development should revert to their pre-construction phase.

11.5.2 Monitoring Measures (If relevant)

All groundworks associated with the construction works, turbines hardstands, temporary compound, Met Lidar, spoil deposition areas, borrow pit, internal cabling and access tracks must be archaeologically monitored under licence from the NMS. There are no monitoring measures during the operational or decommissioning phase.

11.6 Residual Impacts and Effects

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, 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.

11.7 Cumulative Effects

There are eleven existing or permitted wind farms within 20km radius zone of the Proposed Development (**Figure 11-20**).

The cumulative effect 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 effects 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 Proposed Project were considered in the context of other existing and permitted Wind Farms within 20km radius zone of Proposed Development.

11.7.1 Cumulative Effects (Construction Phase)

Cumulative effects during the construction phase refers only to the direct effects which consist of ground disturbance. Mitigation consists of and archaeological monitoring of ground works associated with the Proposed Development during the construction phase (see section 11.5). No effects to recorded monuments, protected structures or NIAH structures are expected to occur during the construction stage of the Proposed Development. In this regard cumulative direct effects to the archaeological and cultural heritage sites as a result of the development are not identified.

11.7.2 Cumulative Effects (Operational Phase)

The addition of other projects to the Proposed Development was considered in order to assess Cumulative Effects. This included all other wind farms within 20km of the development. Indirect effects on the landscape occur at the operational stage of the project (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 the context of other existing and permitted wind farms within 20km radius zone. The potential to be able to see more turbines in the wider landscape setting from Recorded Monuments (including National Monuments) and structures listed in NIAH was analysed using results of the ZTV's (**Figure 11-20**) and analysis of several photomontage images. In that regards cumulative effect during operational phase is classified as slight.

11.8 References

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Cartographic Sources

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1st Edition 6" OS 1840-42 map

2nd Edition 25" OS 1893 map

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

www.excavations.ie – Summary of archaeological excavation from 1970–2021.

www.bing.com- BING Aerial imagery

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

Photographic sources

All on site photos including drone images by Laurence Dunne Archaeology