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DESIGNING AND DELIVERING A SUSTAINABLE FUTURE

ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIAR) FOR THE PROPOSED DREHID WIND FARM AND SUBSTATION, CO. KILDARE

VOLUME 2 – MAIN EIAR

CHAPTER 14– ARCHAEOLOGY, ARCHITECTURAL AND CULTURAL HERITAGE

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14. ARCHAEOLOGY, ARCHITECTURAL AND CULTURAL HERITAGE

14.1 Introduction

This chapter of the environmental impact assessment report evaluates the likely significant effects on the archaeological heritage, architectural heritage and cultural heritage environment arising from the Proposed Development. The purpose of this chapter is to evaluate the significance and sensitivity of the receiving cultural heritage environment and to identify and evaluate the likely significance of the impacts of the Proposed Development and associated infrastructure on this environment. In addition, where potential significant impacts are identified, mitigation measures are proposed.

Two concurrent applications for consent are being made to the Competent Authority, An Bord Pleanála which will be supported by a single EIAR which will address both elements of the project i.e. the Proposed Wind Farm and the Proposed Substation.

The Proposed Development site is located in the northwestern part of County Kildare (see Figure 1.1 in Volume 2 of the EIAR). The site comprises an area that lies just south of the M4 and Johnstown Bridge Village, it is bordered to the west by the R402 and the village of Kilshanchoe, to the south by the Drehid Road and to the east by the cutover Timahoe Bog. The wind farm site is wholly located in County Kildare and includes lands in the townlands of Ballynamullagh, Kilmurry, Killyon, Coolree, Mulgeeth, Drehid and Dunfierth. The Proposed Wind Farm application area encompasses a land area of 73.928 ha (0.793 km2). The site is accessed from the M4 motorway until Enfield, then along the R402 for ca. 7.7 km and finally along the local road (L5025) to the entrance of the site. The site lies c. 2.8 km south of the motorway M4 at Enfield and 1.2 km southeast of the regional road R402 linking the M4 to the R420 east of Tullamore in County Offaly.

The Proposed Substation, including the loop-in connection to the existing Kinnegad-Rinawade overhead line, is wholly located in County Kildare, within the townland of Coolree.

The proposed wind farm comprises 11 turbines, six are proposed for the forested area that occupies the northern half of the proposed wind farm land parcel (T6 to T11), and five turbines are proposed for the pasture fields to the south (T1 to T5) (Figure 14.1-2).

The Proposed Development is described in full in Chapter 3 and the site layout is shown on Figure 3.3 in Volume 2 of the EIAR. As set out in Chapter 1- Introduction, the 'Proposed Development' assessed in this EIAR comprises the following elements:

- The 'Proposed Wind Farm' (consisting of 11 turbines, turbine foundations and hardstanding areas, new access tracks, underground electrical and communications cabling, drainage, temporary site compounds and associated works; The Proposed Wind Farm also includes the 'Proposed Recreation and Amenity Trail');
- The 'Proposed Substation' (110 kV substation and loop-in connection to the existing overhead lines);
- Turbine delivery route (TDR).

These sections describe the lands which make up the Proposed Development.

14.2 Methodology

14.2.1 Relevant Guidance

In Ireland, there is a number of policy and guidance documents issued by the government, local authorities, and semi-state bodies to assist in the identification, protection and avoidance of heritage assets. These guidelines also assist in standardising the approach taken during the planning and design stages of development. The guidelines consulted for the purposes of the Proposed Development are provided in Appendix 14.1, along with excerpts from the relevant legislation (Appendix 14.1.2), a summary of Kildare County Council's policies relating to Archaeology, Architectural Heritage and Cultural Heritage (Appendix 14.1.3) and a glossary of impact assessment for cultural heritage Appendix 14.2).

14.2.2 Evaluation Criteria

14.2.2.1 General

Consideration of the historic environment included UNESCO World Heritage Sites and candidate sites on the Tentative List for inscription onto the World Heritage List, National Monuments, recorded archaeological monuments (RMP), protected structures (RPS), designed landscapes, architectural conservation areas (ACAs), National Inventory of Architectural Heritage (NIAH) building and garden survey sites, structures of architectural heritage merit (vernacular, urban and rural), cultural heritage features, industrial heritage, placenames, language and inherited traditions (see Appendix 14.2.4, Table 14C for definitions of each). These are referenced in the text as follows:

Table 14-1: Abbreviations

Abbreviation	Meaning	Unique Reference format
RPS	Record of Protected Structures	B plus OS six-inch map ref e.g. B04-17
RMP	Record of Monuments and Places	KD followed by OS six six-inch map ref and then a unique number e.g. KD011-107
NIAH	National Inventory of Architectural Heritage	An eight-digit unique number e.g. 14308019
NIAH Garden Survey	National Inventory of Architectural Heritage	County ref. followed by 1: 50,000 OS Map and unique ID number e.g. ME-35-N-733831
HM	Historic Monument	HM, followed by five-digit number HM01861
KIHS	Kildare Industrial Heritage Survey	KIAHS, followed by OS six map ref, unique number e.g. KIAHS 011-012
CH	Cultural Heritage sites (undesignated sites identified)	CH, followed by unique ID number, e.g. CH5
ACA	Architectural Conservation Area	N/a
RPS	Record of Protected Structures	B plus OS six-inch map ref e.g. B04-17
RMP	Record of Monuments and Places	KD followed by OS six six-inch map ref and then a unique number e.g. KD011-107
NIAH	National Inventory of Architectural Heritage	An eight-digit unique number e.g. 14308019

14.2.2.2 Archaeological Heritage

'Archaeology' 'is the study of past societies through the material remains left by those societies and the evidence of their environment. For the purpose of this Chapter the following definition from the Department of Arts, Heritage, Gaeltacht and the Islands (DAHGI) (now Department of Housing, Local Government and Heritage (DHLGH)) Framework and Principles for the Protection of the Archaeological Heritage is applied for archaeology (DAHGI 1999): *The 'archaeological heritage' consists of such material remains (whether in the form of sites and monuments or artefacts in the sense of moveable objects) and environmental evidence'*

The Minister of the Department of Housing, Local Government and Heritage (DHLGH) has a responsibility to protect the archaeological heritage and to exercise powers of preservation under the National Monuments Acts, 1930–2004 most recently repealed by the Historic and Archaeological Heritage and Miscellaneous Provisions Act (2023) (see Appendix 14.1.2), taking account of the European Convention for the Protection of the Archaeological Heritage.

The protection of the archaeological heritage is provided for using the following four statutory designations:

- Record of Monuments and Places (RMP*)
- National Monument in the ownership or guardianship of the Minister for AHG or a Local Authority
- National Monument subject to a Preservation Order (or temporary Preservation Order)
- Register of Historic Monuments (RHM)

*The Sites and Monuments Record (SMR), as revised in the light of fieldwork, formed the basis for the establishment of the statutory RMP in 1994 (pursuant to Section 12 of the National Monuments (Amendment) Act, 1994). The RMP records known upstanding archaeological monuments, their original location (in cases of destroyed monuments) and the position of possible sites identified as cropmarks on vertical aerial photographs. The information held in the RMP files is read in conjunction with published constraint maps. Archaeological sites identified since 1994 have been added to the non-statutory SMR database of the Archaeological Survey of Ireland (National Monuments Service, DHLGH), which is available online at www.archaeology.ie and includes both RMP and SMR sites. Archaeological sites identified since 1994 are placed on the SMR and are scheduled for inclusion on the next revision of the RMP. The Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023 was enacted in October 2023 and while this Act is now law, most of its provisions will not enter into force until the Minister for Housing, Local Government and Heritage has made one or more Commencement Orders. This means that the National Monuments Acts have therefore not yet been repealed and remain in force (See Appendix 14.1.2 for a summary of the act).

14.2.2.3 Architectural Heritage

'Architectural heritage' is defined as 'all structures and buildings (together with their settings and attendant grounds, fixtures and fittings, groups of such structures and buildings and sites), which are of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. Architectural heritage is generally visible and has a presence in the landscape which requires assessment.' (Department of the Environment, Heritage and Local Government, 2004)

This chapter seeks to identify the properties/structures of architectural heritage merit that will be directly or indirectly impacted by the proposed development. A direct impact is where a feature or site of architectural heritage merit is physically located in whole or in part within the footprint of a development site an indirect impact occurs where the setting of the structure is altered.

The identification, recording and protection of the architectural heritage are provided using the following:

- Record of Protected Structures (RPS) listed in the County Development Plan
- Architectural Conservation Area's (ACA's) listed in the County Development Plan
- National Inventory of Architectural Heritage (NIAH)
- NIAH Historic Garden and Designed Landscape Survey

14.2.2.4 Cultural Heritage

Cultural heritage as set out in the Environmental Protection Agency (EPA) Guidelines on Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA 2022) includes archaeology, architectural heritage, folklore and history. 'Cultural heritage' is a broad term that now has come to include a wide range of tangible and intangible cultural considerations that are bound up in cultural memory and associations, belief, traditions (e.g. mass paths and pilgrim ways), past knowledge, traditional practices (e.g. saints' pattern days), craft and building skills, and the oral tradition of local populations. It encompasses aspects of archaeology, architecture, history, landscape and garden design, folklore and tradition and topography.

Cultural heritage is part of our cultural identity and contributes to defining a sense of place. The value of a strong sense of place is likely to become more important as the world grows increasingly homogenised. Recognising the unique sense of place in our towns, villages and city, whilst also respecting the individual heritage assets, is critical.

Cultural heritage assets are valued for the important contribution they make to the understanding of the history of a place, an event or people. Sites of cultural heritage interest are often afforded protection either as recorded archaeological monuments (on the Record of Monuments and Places (RMP) / Sites and Monuments Record (SMR)) or as protected structures (on the Record of Protected Structures (RPS) in the relevant City or County Development Plan), or as structures within the National Inventory of Architectural Heritage (NIAH).

Each of these provides a unique cultural record and acts as a carrier of memory, meaning and cultural value. When considered in its wider context, they can form an essential component in the mechanism for analysing the broader cultural character and context of an area. Together, these can assist in mapping the changes that have led to the development of the modern environment. Such analysis provides insight into the communication, trade, transport, growth and associations of past societies.

By identifying and articulating these sensitive values they may be considered, respected and protected in the context of change in the future. Any items of interest made known by local inhabitants during the course of site work was duly considered, recorded and assessed in the impact assessment. Site work was augmented by an examination of local publications and historic map sources, namely Ordnance Survey six-inch maps, and the Kildare Industrial Heritage Survey (Arch-Tech Ltd., 2010).

14.2.3 Evaluation Process

14.2.3.1 Baseline Reporting

The evaluation process ensures that all designations relating to heritage assets as well as cultural heritage features that are revealed through research, field assessment and consultation are clearly articulated. A review of the following sources took place in order to inform the cultural heritage report:

A review and collation of nationwide surveys such as the RMP, NIAH, RPS and landscape characterisation and a review of their designations National Monuments, World Heritage Sites Candidate UNESCO World Heritage Sites.

- A review of artefactual material held in the National Museum of Ireland, known as the Topographical Files.
- Archaeological Inventory of County Kildare (in draft and unpublished).
- Cartographical Sources, OSi Historic Mapping Archive, including early editions of the Ordnance Survey including historical mapping (such as Down Survey 1656 Map) (Appendix 14.3).
- The Irish archaeological excavations catalogue i.e. Excavations bulletin and Excavations Database.
- Place names.
- Kildare County Development Plan (2023-2029).
- Kildare Industrial Heritage Survey (2007).
- A review and interpretation of aerial imagery (Google earth 2001–2024, Bing 2024) to be used in combination with historic mapping to map potential cultural heritage assets.
- Collation of information from similar or other infrastructure projects in proximity to the proposed development, for example EISs, SEAs, conservation plans, archaeological test assessments and excavations.
- A review of existing guidelines and best practice approaches.
- Other documentary sources (as listed in the references section 14.11).

As part of the reporting process the following was carried out:

- A description and assessment of the receiving archaeological, architectural; and cultural heritage character, context and environment.
- A review of design details and project layout.
- Identification and evaluation of the significance of the impact of the proposed development on the receiving archaeological, architectural and cultural heritage environment.

14.2.3.2 Assessment Study Area

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

To identify the likely and significant impacts of the proposed development on archaeological, architectural, and cultural heritage sites of different sensitivity value, the study area for the assessment included a number of different zones:

- World Heritage properties and candidate sites on the tentative list for inscription onto the World Heritage list (20km radius);

- National monuments (5km radius) and nationally significant complexes in elevated positions or with views integral to the setting of the monument (10km radius);
- Recorded Monuments (2km radius);
- Protected Structures and NIAH sites (2km radius);
- Undesignated Cultural Heritage features (500m radius).

With regard to the proposed grid connection, given the linear nature of the proposed works along existing roads, the study area was narrow. Protected structures / NIAH sites along or immediately adjacent to the existing road were considered for the assessment. RMP / SMR sites within c. 50m either side of the road were included, to allow for potential subsurface archaeological features that may extend closer or into to the road.

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

14.2.3.3 Field work

A non-invasive field inspection of the proposed windfarm, substation and their environs were inspected during the month of September 2013, November 2014, September 2016 and March 2018, September 2018 (for previous applications) and again in November 2024. The field inspection was undertaken to assess current and previous land use, access to the site, local topography and any additional environmental information relevant to the site's appraisal. It sought to identify and assess cultural heritage sites that might be subject to direct physical or indirect setting impacts as a result of the Proposed Development.

An evaluation was undertaken of any identified heritage features as well as the archaeological potential of any given area. The proposed location for wind turbines, access tracks and cable routes and substation were all visited and assessed. The field survey sought to identify any low-visibility archaeological features with little surface expression and to identify properties, structures or features considered to be of architectural or cultural heritage merit. The field assessment is provided in Appendix 14.4 and must be read in conjunction with this chapter.

14.2.3.4 Data analysis

The mapping and data analysis were managed through ArcGIS (a geographical information programme). Information was structured by the identification of heritage assets, such as the RMP, National Inventory of Architectural Heritage and National Monuments, as point data on the programme. For this project the RMP datasets were obtained from www.archaeology.ie (accessed and downloaded in July 2024). The National Monuments list was sourced directly from the Archaeological Survey of Ireland and added as a layer. The RPS GIS data for Kildare listed the County Development Plan (2023-29, dated to 09/10/2024[1]) was sourced from Kildare County Council. The National Inventory of Architectural Heritage were also obtained from the DHLGH as datasets for use in the Geographical Information System for the project which formed a permanent renewable database to provide information for the EIS process.

14.2.3.5 Photomontages

The assessment of landscape and visual impacts are examined in Chapter 15. Photomontages (contained in Volume 4) that illustrate the visual presence of the proposed development from certain sites of cultural heritage significance which are common to this chapter's assessment are listed in Table 14.2 below and are referred to in the text where relevant:

[1] https://data.kildarecoco.ie/dataset/kildare_record_of_protected_structure

Table 14.2: Photomontages that include cultural heritage assets

Reference	View	Site Status
VP13	Carbury Castle on Carbury Hill	Multi period archaeological complex which includes a National Monument vested with Kildare Co. Co, views associated with Newbury Hall house protected structure
VP15	R402 at Carbury	View towards the wind farm in the vicinity of Newbury Hall (RPS B08-10)

14.2.3.6 Assessment of Impacts - Assessing Significance Criteria and Impact Quality

Every landscape presents different topographical and environmental conditions, land cover and land usage and as such the location, scale and physical form of each element of a project and associated works are site specific. Cultural heritage sites/landscapes are considered to be a non-renewable resource and cultural heritage material assets are generally considered to be location sensitive. In this context, any change to their environment, such as construction activity and ground disturbance works, could adversely affect these sites.

This assessment methodology has regard to the EPA assessment criteria (EPA 2022). The assessment of the significance of potential impacts on cultural heritage assets considers two primary factors: the magnitude of the impact and the sensitivity or value of the asset:

- The magnitude of the impact refers to the extent of change brought about by the proposed development on the cultural heritage asset or its setting. This is classified into categories ranging from Very High, representing substantial change or total loss of a significant asset or its context, to No Change, indicating no discernible impact. Intermediate levels of impact are classified as High, Medium, Low, or Very Low, reflecting decreasing degrees of alteration to the asset or its surroundings.
- The sensitivity or value of the asset is determined by its intrinsic cultural, historical, or architectural importance and its susceptibility to change. This is classified into levels of Very High, High, Medium, Low, Very Low, or Unknown. Assets of very high sensitivity or value, such as national monuments or landmark architectural heritage, require careful consideration due to their significant contribution to cultural identity and heritage.

These factors are evaluated together to determine the overall significance of the impact:

- The overall significance of the impact is derived by cross-referencing the magnitude of the impact with the sensitivity or value of the asset. This evaluation produces an impact rating within a range of Imperceptible, Not Significant, Slight, Moderate, Significant, Very Significant, or Profound. For example, a high magnitude of impact on an asset of very high sensitivity would result in a significant or profound classification, whereas a low magnitude of impact on a low-sensitivity asset would be rated as imperceptible or not significant.

This approach ensures a structured and transparent evaluation of impacts, providing clarity on the relationship between the development and the cultural heritage asset. The classification informs decisions regarding the necessity for mitigation and the overall acceptability of the proposed development's effects. A glossary of impact assessment terms, including the criteria for the assessment of impact significance, is contained in Appendix 14. 2.

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

- Direct Physical Impacts
- Direct physical impacts describe those development activities that directly cause damage to the fabric of a heritage asset. Typically, these activities are related to construction works; e.g. they could include excavation of turbine foundations, earthmoving/site preparation works for the creation of access roads etc. Further direct physical impacts are unlikely to be experienced during the operational life of the proposed development project.
- Indirect Physical Impacts
- Indirect physical impacts describe those processes, triggered by development activity, that lead to the degradation of heritage assets.
- Impacts on Setting
- Impacts on the setting of heritage assets describes how the presence of a development changes the surroundings of a heritage asset (archaeological, architectural or cultural heritage sites) in such a way that it affects (positively or negatively) the heritage significance of that asset. Visual impacts are most commonly encountered but other environmental factors such as noise, light or air quality can be relevant in some cases. Impacts may be encountered at all stages in the life cycle of a development from construction to decommissioning but they are only likely to be considered significant during the prolonged operational life of the development. Factors considered when assessing the impact on setting include (after English Heritage 2005 & Heritage Council 2013):

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

- While a direct physical impact can easily be assessed in quantitative terms, the assessment of setting can be subjective and as such is a matter of qualitative and professional judgement. Chapter 14, Landscape and Visual deals with the current character and visual amenity of the landscape and designated views.

14.3 Existing Environment

14.3.1 Study Area

14.3.1.1 Physical Landscape

In order to understand the development of the baseline cultural heritage landscape an understanding of how the landscape was formed is required. Northwest Kildare is a generally lowland region. Kildare was largely formed by glacial drifts and gravels washed out by the ice sheets during the Pleistocene period. The impeded drainage encouraged the development of fen peat in shallow basins and led to the development of the raised peatlands of the midlands. The Bog of Allen is a large bog that extends across 958km^2 and crosses Kildare, Meath, Offaly, Laois and County Westmeath.

The proposed development is sited within and immediately adjacent to the easternmost extent of the Bog of Allen. It is located south of the *Esker Riada* (an east–west glacial esker ridge closely followed by the N4), within the enclosed valley of wetlands. Within this area are low-lying lands interspersed with large expanses of bog stretching all the way south to the Grand Canal – Barrow Line and then west to the Offaly border (extending into the midlands to Lough Boora and Lemanaghan) and is bordered by the cultivated and pasture lands of the east and north. In this western bogland zone, islands of good agricultural land are known at Kilmeague (in the historic 'island of Allen'), Timahoe and in the barony of Carbury in the northwest.

Large scale industrial peat extraction created employment and attracted settlement into the area in the twentieth century, settlement that favoured the natural dry ridges that run through the boglands. The expanse of bog to the east of the proposed development comprises conifer plantations along its edges and drained and machine cut-over peatland.

As mentioned above these relatively flat plains are interspersed with 'islands' of glacial gravels, and low hills namely to the west at Carbury (130m OD), Knockcor (120m OD), Ardkill (110m OD) and Mylerstown (120m OD) and further to the east by Ovidstown (130m OD).

In addition to the large expanse of bogland and deep drainage ditches, the Fear English River and Kilcooney River drain the lands in the study area.

14.3.1.2 Cultural and Historic Landscape Character

The Proposed Development is sited within the 'North-Western Lowlands' and the 'Western Boglands' Landscape Character Areas (LCA's) in the County Development Plan of 2023-2029. The key characteristics and landscape factors within each of these LCA's are described in Chapter 15.

The topography and landscape of northwest County Kildare in particular the vast bogs, rivers and raised eskers which provided vantage points in the landscape has influenced the settlement pattern and structure type that is typical in the wider study area. The recorded presence of archaeological monuments in the study area is comparatively low in relation to other areas in Kildare and are of a dispersed nature. However archaeological monitoring and surveying of Bord na Mona activity has shown this sunken basin of marginal land to contain numerous and extensive trackway systems across the bog forming ancient roads to places of ritual and religious significance, refuge, settlement and strategic importance from prehistory onwards. Other sites such as field systems, wooden platforms and hut sites are also emerging with ongoing archaeological investigation. These sites also indicate that there would have been associated activity in the dryer surrounding gravel hills and on the bog margins.

Historically there have been substantial changes to this wider landscape, in the 18th century the development of the Royal and Grand canals brought with them infrastructure such as bridges, locks, forges and accompanying bogland drainage which made the huge resource of the bogland accessible. In the 19th century by the advent of

the railway, and then in the 1950's, by the extensive exploitation of the midland bogs by Bord na Mona bringing with it industrial structures and associated development of settlement. All these factors have contributed to change within the character of this landscape over time and have formed the modern-day landscape of Kildare.

Alteration to this landscape has also taken place in recent years with the expansion of commuter belt settlement from the large towns and Dublin city, the improvement of the road network, the development of extensive commercial afforestation in former bogland, quarrying, electricity transmission infrastructure and the development of an integrated waste management facility at Drehid. Small field systems have been amalgamated into larger fields and deep drainage ditches have been inserted to drain and reclaim marginal lands.

Surviving within each of these areas are sites, monuments, structures and activities that have collectively influenced the historic character of these landscapes today.

The dominant historical landscape character within each area is described below in Table 14.3:

Table 14.3: Landscape Character and Historic Character within the wind farm study area

Landscape Character Areas	Historic Landscape Character types	Description of Dominant Historic Landscape Character
North Western Lowland	• Fields (mixed regular irregular forms, straight and sinuous boundaries) • Parkland • Extractive industries (sand and gravel quarries) • Industrial (milling) Settlements	• Settlement at Kilshanchoe, Johnstown bridge, Carbury and middle-sized country/farm houses and associated farm land/parkland on dry hills and eskers. • Early medieval ringfort and church sites on gravel ridges • Anglo Norman moated sites in low-lying areas adjacent to rivers, castle sites on low knolls, deserted medieval settlement, on gravel ridges (Mylerstown, Ardkill, Clonard) often on pre-existing early medieval monastic foundations.
Western Boglands	• Bog (Raised Bog) • Extractive industry (Peat) • Afforestation	• A significant wetland low-lying and hidden archaeological resource comprising organic remains (such as linear trackways and peatland structures-removed by industrial activity) and stray finds which date from the prehistoric to medieval times. • The barrow complex and medieval complex at Carbury Hill form landmark sites on raised ridges within a lowland bog landscape. • Remnants of a twentieth century industrial landscape with the mass extraction of peat from the bogs and associated features (e.g. bog railways and clusters of twentieth century settlement has occurred on the bog margins). • Tracts of commercial forestry on the marginal lands on the edge of the bog

14.3.1.3 Political Divisions

The proposed development incorporates the following townlands, parishes of Mylerstown, Dunfirth and Ardkill, all in the barony of Carbury or parts thereof in the following townlands and (Table 14.2).

Table 14.4: Townlands, Baronies and Parishes in the proposed development

Townland name	Barony	Parish	Proposed Development
Ballynamullagh	Carbury	Mylerstown	T6 and T7, internal access tracks & associated development
Coolree	Carbury	Dunfierth	Substation, compound, T11, T9, internal access tracks & associated development
Drehid	Carbury	Ardkill	T1, T2, T3, T4, T5, compound internal access tracks & associated development
Killyon	Carbury	Dunfierth	Internal access tracks & associated development
Kilmurry	Carbury	Dunfierth	T8, internal access track & associated development

14.3.2 Archaeological and Historical Background

14.3.2.1 Introduction

Kildare has a rich and well-documented archaeological record with evidence for human activity since the prehistoric period, the type and nature of these sites are described below.

14.3.2.2 Bogland Archaeology

The proposed development is located on the dryland margins of a large area of raised bog associated with the bog of Timahoe/Drehid, which is part of the vast Bog of Allen, the largest complex of raised bog in Ireland, covering nine counties across the midlands. Bogs act as a rich archaeological repository; they have perfect anaerobic environmental conditions where the decay of organic material is almost stopped. They have also had ritual, social and economic significance through all phases of human activity and as such are considered to have an inherent archaeological potential.

Wooden and organic finds survive in this environment and the boglands that surround the proposed development are rich in these artefacts. Bog butter, the remains of an elk, a human forearm, possible butter paddle, leather shoes as well as wooden objects such as a shovel, wheel and keg have all been recovered from the cut over bogland in the study area (NMI)

Wooden trackways have been found in raised bogs all over the midlands and are traditionally known as toghers which is an anglicised form of the Irish word *tóchar*, meaning causeway, describing wooden trackways or roads across the bogs (Lucas, 1985). Occasionally they are referred to as Danes' roads, although there is no evidence to link them with the Vikings. They played a very important role in the economic and social life of the periods when they were in use. They provided access to islands of dry land at the centre of bogs. They range in date from the Mesolithic to the medieval period and a wide variety of methods of construction are known. These range from simple brushwood paths, wattles of hazel rods, roundwood sleepers or runners, large split oak planks, some tracks also have gravel and clay incorporated presumably to consolidate the bog beneath. They can be traced over a considerable distance; based on their nature and extent they are classed into three groups,

the most extensive and complex are Class 1 toghers comprising substantial timber planks and with good structural definition; Class 2 comprises a short stretch of peatland trackway, constructed of roundwood and brushwood, up to 15m in length with a discernible orientation and Class 3, a short stretch of trackway that may not be possible to trace them beyond a single sighting (Archaeology Survey of Ireland (DAHG)). There are also gravel/stone trackways wholly or substantially of gravel (including sand and clay), cobbles or stone slabs, or a combination of these.

When examining toghers we have to bear in mind that these bog landscapes were very different in many ways to what we see about us today. Great oak forests still clothed large tracts of land, leaving much less room for settlement and cultivation. Vast areas from which peat has now been exploited were still wide wildernesses of inhospitable bogland and huge expanses which have since been drained and reclaimed were still impassable swamps and fens. It was the presence of these bogs and fen embayed in areas of fertile ground, making passage from one area to another impossible except by long detours which led to the construction of the great majority of toghers.

The archaeological survey of the bogs of county Kildare by the Irish Archaeological Wetland Unit (IAWU), conducted from the 1990's has revealed a large numbers of trackways/ toghers, platforms and related finds, indicating the accessibility of these wet soils in prehistoric and historical times.

Three toghers are recorded east and southeast of the Proposed Development , connecting the drier land called 'Ardnacoolia' in Drehid, Parsonstown, Loughnacush and Kilkeaskin townlands with the 'island' of 'Drumachon' at Timahoe East and West townlands, eastwards across the bog (KD008-025/KD009-017, KD008-029/KD009-019, KD008-030/KD009-018). Sections of the latter two toghers have been excavated, showing a narrow oak trackway (Wth 1.25m) on a brushwood substructure (Wth 2-2.5m), with dendrochronological dating suggesting a two-phase structure: the substructure is dated to early Bronze Age and the superstructure to middle Bronze Age.

At least seven tracks were noted during field walking the extensively cut away bog of Timahoe. One track was examined by Rynne in 1966 and two tracks were examined by Munro in 1986. A Birch track orientated east-west consisting of longitudinal woods, irregular spaced resting on sporadic transverses with no evidence of split wood and a probable extension of this track again consisting of Birch were dated to the early Bronze Age. An oak track that is orientated northwest-southeast and crosses the mentioned Birch track was recorded by Munro (1987) and is thought to be part of the track investigated elsewhere by Rynne in 1966. This track consisted of the lower part of brushwood with longitudinal timbers, separated by a thin layer of sand from the upper part consisting of massive oak planks and transverse timbers (and at least one yew long in excess of 6m in length). Three dating samples collected during the excavation of the feature returned middle Bronze Age dates.

In addition to the lengths of trackways more ephemeral unclassified toghers were identified in the bog at Drehid (KD008-025, KD008-026, KD008-027 and KD008-038).

Six peatland structures are also identified in Timahoe West within in the centre of the cut away bog (KD008-043, KD009-027, KD009-028, KD009-030, KD009-034, KD009-035 and KD008-039) to the northeast of the existing Drehid Waste Management Facility.

Conclusions drawn from the ongoing survey work of the Irish Wetland Unit are that custom built trackways dating from the Mesolithic onwards were constructed as a response to changing local and environmental conditions and that these trackways formed an increasingly dense communication network.

14.3.2.3 Prehistoric Period (circa 7000 BC - AD 400)

Mesolithic (c. 7000 –4000 BC)

The transitory hunter-gatherer groups of this period were sustained by the postglacial climate and attracted to dense woodland cover and large population of wild fauna. Mesolithic groups predominantly exploited the river valleys, leaving behind them only ephemeral archaeological remains that are therefore difficult to detect such as shell middens (mounds sometimes referred to as kitchen middens comprising accumulated discarded shells, animal bones, flint implements and sometimes occupation debris) and flint scatter sites. Evidence for Mesolithic (c. 7000-4200 BC) activity from the study area comes in the form of dating results from a now destroyed wooden trackway in Lullymore to the southwest of the proposed development.

Neolithic (c.4000 –2200 BC)

The Neolithic saw the transition of the early settlers from a hunter-gatherer life-style to a farming economy with the introduction of cattle, sheep, wheat and barley and possibly the introduction of new peoples. This period was characterised by land clearance and the establishment of field systems and permanent settlement sites further inland along river valleys. This period also saw new developments in ritual activity, and the first permanent monuments, megalithic tombs, were built in the Irish landscape, representing a complex and well-structured social hierarchy.

There are no upstanding Neolithic sites located within the study area. However, several of the townlands in proximity to it have yielded artefacts of the period these include a polished stone axehead was recorded in Newbury Hall Demesne and an unspecified stone object (Reg. P1950:31) which may suggest Neolithic activity in the Carbury area (NMI) to the west of the proposed development. Saddle querns have also been found in Mucklon townlands (See Table 14.7 below).

Bronze Age (c. 2400–500BC)

The Bronze Age is characterised by an introduction of metal and metalwork technology and by a change in burial rites. Replacing the megalithic monuments, Bronze Age burials occurred in simple pits and cists (pits lined with stone flags) and was sometimes accompanied by pottery or other grave goods. These cists may be placed in tumuli, cairns and barrows or set within 'natural' monuments such as sand ridges or laid in so-called flat cemeteries with no above ground evidence at all.

Barrows usually consist of a circular central area, which may be flat or slightly dished (a ring ditch), or domed (a ring barrow), and has an enclosing ditch and occasionally an external bank (18) (10). Mound barrows comprise a circular or oval earthen or earth and stone mound, usually with no external features. Barrows generally date to the Bronze and Iron Ages (c. 2400 BC - AD 400) and generally occur in groups or clusters. Carbury Hill is the location of one such barrow cluster within the study area, however this is small when compared to the significant and probably one of the largest clusters at the Curragh (7.5km to the southeast) and smaller groupings at Lyons Hill and at Punchestown to the south of the county and Clonin Hill to the west. Indeed, the proximity of the barrows at Carbury indicates, not only Bronze Age burial activity, but also alludes to the presence of a Bronze Age populous in the surrounding region.

There are three barrows (a mound barrow KD008-003 and two ring-barrows KD008-004, KD008-005) found on the summit of Carbury Hill (just over 5km to the south west of the proposed development). The three barrow sites were excavated by Willmot (Willmot, 1938) in 1936 and were found to date to the late Bronze Age/ Iron Age and indicated the ritual significance of Carbury Hill during this period. The barrow KD008-003 composed of rock rubble mixed with earth. The mound barrow beneath the mound contained the cremation remains of a juvenile. No grave goods were found but its prominent siting might suggest that it was the earliest of the three monuments here and may date to the Late Bronze Age. One of the ring barrows (KD008-005) had two

cremations and finds that included eight worked flints, a spindle whorl, two sherds of red 'gritless' pottery, a jet spoon, an iron file and a fragment of fused blue glass. An Iron Age date was suggested for the monument (Willmot, 1938) (Archaeological Survey of Ireland, 2007). The final ring barrow (KD008-004) contained nineteen burials which included four cremations and fifteen extended inhumation burials, four of which were children. The cremations appeared to precede the inhumations and one was accompanied by two iron rings and a pin-shaped fragment of iron. All the inhumations had their heads placed towards the southwest, and one was accompanied by an iron shears. Other finds included flint scrapers and knives, a stone disc, a sherd of pottery of undetermined type and a bronze knob. The two forms of burial rite suggest a long period of use, perhaps spanning the Late Bronze Age and the Iron Age period (*ibid*).

The presence of burnt mounds or *fulacht fiadh* is often indicative of Bronze Age seasonal communal activity in river valleys, lakeshores and boggy ground and can be found in groups. Despite the very damp nature of the lands in the study area no fulacht fiadh sites are recorded within 2km of the clusters. Over 3km from the study area in the drier lands in Kilmorebrannagh (KD003-031) to the north of the Proposed Development a fulacht fiadh was excavated in advance of the N4.

Iron Age Period (c. 600 BC -400 AD)

The transition between the end of the Bronze Age and the beginning of the Iron Age in the first millennium B.C. is difficult to define and the monuments directly dated to this period are few (O'Riordan & DeValera, 1979). Iron Age culture in Ireland is marked by the transition from bronze to iron working, by the introduction of rotary querns, by a tradition of large decorated stones, of linear earthworks and the continued use of hillforts.

The Hill of Carbury was referred to in annals as *Sidh Neachtain*, meaning the fairy fort of Nechtain, the King of Leinster, which suggests that there was a fortress here, perhaps a hillfort. According to Hicks the term '*síd*' can be considered in folklore as 'the dwelling places of old gods' because of its association with myths and legends (Hicks, 2007). Wilde recounts the story written in the Book of Ballymote dated to the 1st century about the king's wife Boan who was besieged by the waters of the eponymous River Boyne at its source located at the base of Carbury Hill where there was a magic well (Wilde W. , 1815-1876). The well was later Christianised and became known as Trinity Well (located within Newbury Hall Demesne) (KD008-012) (Comerford, 1886) (E.K., 1919). Wilde however asserts that the true source of the Boyne

"…rises in an adjoining bog or marshy ground to the north of Carbury, — a branch of the great bog of Allen which extends towards the east, — and creeping round the base of the hill to the neighbouring demesne of Newbury, passes under a small bridge upon the Enfield road, as we enter the little village of Carbery adjoining". (Wilde W. , 1815-1876)

In folklore Carbury is also linked with Green Hill (Donadea) and Rourke's Hill.

14.3.2.4 Early Medieval/Early Christian Period (circa AD 500 to 1100)

Settlement Activity

There is a distinct distribution pattern of early medieval sites in this landscape, the monuments relating to the period include ringforts, holy wells and churches and singular example of a souterrain. The early medieval sites in this landscape are widely distributed; they are primarily located around the outer edges of the bog taking advantage of localised natural ridges in the landscape where the lands are well drained and gently undulating.

The early medieval period saw the development of a mixed-farming economy managed by kings, nobles and free farmers. Carbury is mentioned many times in the Annals of Ireland indicating its territorial significance. In 458 A.D. the Annals of the Four Masters records the death of Laoghaire, High King of Ireland, at *Sidh Neachtain*. The territory of the Uí Faeláin (O'Byrne) was the tribal grouping who ruled the northern part of County Kildare up until the time of Norman Invasions, the Cairpri Laigin (O'Ciardha, O'Keary or O'Carey) were the tribe who's

name survives in the name Carbury and were lords of this part of the northwest frontier of Leinster (Comerford, 1886).

Additional improvements in agriculture from the 5th century AD resulted in a further wave of settlement expansion and population increase in rural Ireland, leading to the construction of the modern landscape's most common archaeological site: the ringfort, or its Irish equivalent, the rath. Ringforts are circular enclosures, essentially habitation sites or farmsteads. They were not simple isolated homesteads, however, and should be considered within their contemporary settlement landscape, which would have consisted of unenclosed settlements, farms and fields, routeways and natural resources (Stout, 1997). Typically, they are sited on good, well-drained soils, usually over the 100m contour, close to a water source, and often located in proximity to routeways (ridges, eskers, moraines) as is the case of a number of sites within the study area where there are several examples that are located on the edge of bog such as those at Mulgeeth (KD009-001 and KD004-011) lying just below the 300ft contour line on dryland adjacent to the bog and in Coolree (KD004-008, KD004-009). There are 10 ringfort sites within a 3km radius of the proposed development.

Enclosure sites are areas defined by an enclosing element (e.g. bank, wall, fosse, scarp), or indicated as such cartographically, and occurring in a variety of shapes and sizes, possessing no diagnostic features which would allow classification within another monument category. There are 5 enclosure sites recorded in the 3km study area, they have much the same distribution as the ringfort which may suggest that they may be ploughed out examples, though a prehistoric origin (such as barrow sites etc.) cannot be ruled out. Ringforts are the most common monument found within the study area, but when taken into account with the number of enclosures (potentially degraded ringforts) this presents significant early medieval activity in area.

Non-secular activity

Where ringforts were the major secular component of early Christian settlement, ecclesiastical centres became the focus of the new religion that was readily adopted in the 5th and 6th centuries.

Early medieval monastic settlements tend to be defined by a large curvilinear bank and ditch or stone enclosure (topography permitting), enclosing an area circa 90-120m in diameter, often preserved in the line of townland or field boundaries and roads (Swan, 1988). The majority of ecclesiastical settlements had one or more concentric curvilinear enclosures, with the church placed at the centre, in the inner sanctum (frequently preserved in the surviving graveyard boundary), with more secular activities (domestic, commercial and industrial) reserved for the outer enclosures. They usually had a network of radiating roads, with the principal approach road (often from the east) terminating in a triangular market place. Features commonly found to be associated with early ecclesiastical sites include holy wells (usually outside of the main settlement), bullaun stones, high crosses, cross-inscribed stones and round towers.

To the south of Carbury Hill is a church and graveyard (KD008-00600, 002). The graveyard is roughly rectangular and is defined by a cross-capped, mortared stonewall. The earliest legible headstone is dated 1794. A possible levelled church site northwest corner of the graveyard; possibly the *Templedooath* ('Black Church') of the graveyard's name. Speculation on the origin of the name makes an attempt to associate the site with a place called *Caille* where St Muadhnat Virgin lived i.e. *Temple Muahadnat* which according to Wilde sounds like *Templewooath* which, in the Anglicised form, might be written, Templedooth (Comerford, 1886) (Wilde W. , 1849) .

Other possible ecclesiastical sites in the landscape around the proposed development include a site in Ardkill (KD008-009003).

While many early ecclesiastical sites and later medieval churches will have an associated holy well, the latter can also be recorded in isolation, with no apparent religious associations. Strictly speaking, holy wells are not 'official' church sites. Rather, holy wells are essentially a Christian adaptation of a pre-Christian tradition of

sacred springs, which, like their pagan predecessors, were often visited at certain times of the year, such as saints' or other holy days, and they often had the reputation for effecting cures.

The closest holy well sites to the proposed development farm are over 2–3km to the northeast, north and southeast; in Gorteen (KD004-007) is the site of a well that is no longer visible at ground level, 'Furan Well' in Dunfierth (KD004-023) is located on the corner of a moated site (KD004-012)which is no longer venerated and Trinity well (KD008-012), thought to be the source of the River Boyne in the lands of Newbury Demesne. The latter well was frequented on Trinity Sunday (the 8th Sunday after Easter), during which pilgrims drank the water which was considered to be lucky (Jackson, 1979-80).

Children's burial grounds, sometimes known as killeens (*cillín*) or caldraghs (*ceallúrach*) are patches of un-consecrated ground, where unbaptised babies or victims of suicide or drowning were buried. They are sometimes located within ringforts, or other archaeological monuments, which were regarded as somewhat other-worldly places. They can also be located directly outside church graveyards, often as a small field attached to (but not part of) the sacred area. Very occasionally they appear in early or medieval church sites which had fallen out of use. They are often characterised by rough ground, and by small stone grave markers with no names. There is a Children's burial ground in Timahoe West (KD009-006001), within 3km from the proposed development.

14.3.2.5 Medieval Period (late 12th century (1169)–early 16th century AD)

The distribution of the medieval (Anglo-Norman) sites (motte and baileys, motte sites, castles and churches) in this landscape have a notable pattern being located on dryland ridges overlooking routeways and also the bog. The Anglo Normans came to Ireland in the middle of the twelfth century, bringing with them new military traditions and fortifications, new languages and new social structures. At the time the Irish lived in dispersed farmsteads i.e. ringforts; the sole nucleated settlements, isolated churches or proto-urban centres were monastic sites.

Initial Anglo Norman Arrival

Kildare became one of the first feudal territories of the Anglo-Norman settlement, owing to its proximity to Dublin and as a passage linking the colonies to south Leinster and east Munster (Duffy P. , 2006). By the end of the 12th century, the Anglo-Normans had succeeded in conquering much of the country, bringing with them new military traditions and fortifications, a new language and new social structures and the Gaelic septs of the O' Byrne, O'Toole, O'More and O'Connor were displaced to the Wicklow uplands and the midland bogs (Duffy P. , 2006). Their legacy is felt throughout the modern county of Kildare, the land of which was inherited, along with Laois, Offaly and parts of Wicklow, by Richard de Clare, or Strongbow. Strongbow quickly began granting the lands of Kildare to his loyal supporters, building a network of defensive military earthworks to hold the newly acquired land in the late 12th and early 13th century AD. These earthworks are referred to as mottes: large flat-topped earthen mounds, usually with steep sides, surrounded by a fosse and originally topped with a wooden lookout tower or *bretasche*. They were often associated with a rectangular enclosure defended by a bank and ditch and palisade fencing known as a bailey. They were usually located at defendable vantage points, often overlooking fords on rivers or access routes.

Carbury barony was originally granted to Meiler FitzHenry but ownership was subsequently reverted to William Marshal (Otway-Ruthven, 1959). The Barony of Carbury was first mentioned in 1234, by which time the earliest phase of the masonry castle must have been built (Sweetman, 1999), erected reputedly, in 'Ua Ciardha's fort' by the de Bermingham family, the descendants of Pierce De Bermingham, one of the early English settlers in Ireland (Comerford, 1886) (Wilde W. , 1849). Located at the edge of a rock scarp on the northern shoulder of Carbury Hill there is the site of a motte (KD008-001001), which carried the timber castle, of which there is no visible surface trace. The site was altered when it was used as a courtyard for the later main stone castle beside

it (there are some traces of a wall around it) (Archaeological Survey of Ireland Record of Monuments and Places) (National Monuments Service (www.archaeology.ie)) (McNeill, 1989/90).

In 1305, Peter de Bermingham, arranged the massacre of some 29 leading O'Connors of Offaly and their followers at his table in the castle at Carbury, implying links with the native Irish but also continuing hostility (Duffy P. , 1982/3) following which there was great warfare. In 1368, the Sheriff of Meath was imprisoned by the malefactors of Carbury.

Moated sites represent rural, dispersed settlement in the medieval period and were essentially defended farmsteads of Anglo-Norman settlers in late 13th/early 14th centuries and possibly represent a second wave of settlement into more marginal land (Empey, 1982). They comprised rectangular shaped enclosures defined by a large deep ditch (that was water-filled) and banks that would have been surmounted by palisade fences and they would have been at the centre of agricultural manors. They are generally situated on low-lying ground, though their interiors can be elevated. They are sporadically distributed around the study area however they are all located close to watercourses. There are six within 3km of the proposed development indicating that the area was densely settled by these new farmers, comprising sites at Drehid (KD008-024), Dysart (KD004-033), Clonagh (Cadamstown ED) (KD003-025), Dunfierth (KD004-012 and KD004-030) and Gorteen (Dunfierth ED) (KD004-032).

Kildare was one of the four counties amongst Dublin, Meath and Louth which formed the English Pale. The boundary was delimited by an act of the parliament which met at Drogheda in 1495. The delimited boundary of the Pale in 1495 marked this zone. The study area lay outside the Pale boundary.

The enduring legacy of the Anglo-Normans is, however, the masonry stone castle, and, in both Norman and Gaelic areas. The masonry castle at Carbury (KD008-001002) is prominently sited at the northern shoulder of Carbury Hill, just north of its summit overlooking the Carbury Bog to the north and east, there is pastureland to the south, east and west. The motte, described above, may subsequently have been reused as a bawn or bailey associated with the masonry castle. A high, vertical quarry face runs along the west and north of the motte suggesting that this area may have been quarried originally to provide building stone for the castle; a process which would have also increased its defensive siting. The masonry castle survives as a sub rectangular structure defined by conjoined east and south walls of random rubble construction, surviving to three storeys and lit at ground floor level by a loop in the east wall and one in the south wall. The castle is entered through via a stone-revetted ramp which is not bonded to the castle wall. This first phase of the stone fortress may date to shortly before 1234 and not long afterwards, in the late-13th century, three parallel barrel vaults were inserted in, but not bonded, to the original structure. The west wall of unbattered, coursed rectangular blocks is later again and contains a doorway with segmental pointed arch, of possible 16th century date, and may follow an older wall line.

Tower houses and fortified houses were defensive habitations, built predominantly in the 15th and 16th centuries, although a few examples may be earlier in date and some are known to have been built as late as the first half of the 17th century. The fortified residence of the landholder were symptomatic of the unrest and insecurity of the time and the majority of the castles were small three to five storeys in height linked to defensive walled enclosures or bawns which partially or completely enclosed the site.

They often had very thick walls, intramural staircases, small windows (the earliest had very thin arrow or musket loops) and a vaulted first storey, to prevent the spread of fire. They were usually found adjacent to medieval churches. Some of these castle sites or tower houses are located within demesne lands formalised in the 18th and 19th centuries and represent the forerunners to the later country houses built there. The tower house builders in the area took advantage of high points in this landscape; there are sites on the summit of an east–west line of low hills from Mylerstown (KD003-012) and Ardkill (in ruin, KD008-008001). Many of the tower houses have all but disappeared and some comprise low rubble remains. There are no upstanding remains of Clonagh castle (Cadamstown ED) (KD003-017) where the presence of a 'religious house' (KD003-020), 'burial

place' (KD003-020001-) and stone cross (KD003-02002) in this area. The stones from the demolished Clonagh Castle were used to build 'Kilshanchoe Church' (KD003-027) (National Monuments Service (www.archaeology.ie)). Two armorial plaques (KD004-002) incorporated into the walls of a primary school in Johnstown village and an architectural fragment (KD004-003) incorporated into a modern wall in the village are said to have come from the castle. Similarly, there are no upstanding remains of the tower house sites at Dunfierth (KD004-006) and Timahoe West (KD009-009).

Just over 3km to the west of the proposed development is a deserted medieval settlement in Ardkill comprising a tower house (KD008-008001) a bawn (KD008-008003) and a medieval church (KD008-009001) and graveyard (KD008-009002). Only the eastern angle of a very poorly preserved, two-storied structure survives, together with a small rectangular corner tower which may be a later addition. The tower house is dated to the fifteenth/sixteenth century, with the fireplace and chimney turret added in the seventeenth century.

Carbury suffered greatly at the time of the civil wars in Ireland, particularly during the 15th century, and was constantly the scene of strife in those forays which took place between the English barons within the pale, and the western Irish chieftains. In 1447, Lord Furnival rebuilt the castle, which was subsequently 'demolished' in 1475 and the neighbouring castle of Ballymeyler (Mylerstown) by Red Hugh O'Donnell. As late as 1546, we read the *plains of Cairbre* and Castle Carbury were plundered and burned by some of the Irish insurgents, particularly the O'Kelly's the O'Maddens, and O'Conors.

When as reported the Annals (Comerford, 1886), the Lord Justice, Anthony St. Leger had heard of this, he came into Offaly, and plundered and burned the country as far as the Togher of Cruoghan and once again

'the Lord Justice came a second time into Offaly, and remained fifteen days in the country, plundering and spoiling it, burning Churches and Monasteries, and destroying crops and corn.'

In 1561, on the death of the younger Walter Bermingham, the castle passed to Sir Robert Preston, Chief Baron of the Exchequer, brother-in-law of Bermingham, and ancestor of Lord Gormanstown. And in 1562 the ownership of Carbury Castle passed to the Colley family, ancestors of the Duke of Wellington, and it was finally abandoned in 1774 (Comerford, 1886).

As well as the individual sites and monuments associated with the medieval period deserted medieval settlements offer a tantalising insight to the siting and layout of Anglo Norman settlement activity. The abandoned settlements dating from the 13th century to 1550 AD consist of a group of houses that lie in close proximity with associated land plots, associated with a parish church and/or castle or tower house, often evident as earthworks.

Over 3km to the west of the Proposed Development is the deserted medieval settlement of Ardkill (KD008-008002). It lies on a very gentle south facing pasture slope, between the aforementioned tower house (KD008-008001) and bawn (KD008-008003) and a medieval church (KD008-009001) and graveyard (KD008-009002-). It comprises a large rectangular area (dims. L c. 250m NNW-SSE; Wth c. 100m) is partly subdivided by five, parallel, rectangular terraces separated by low scarps with sunken trackways (KD008-008004 KD008-008005).

To the north of the M4 to the east of Enfield is the deserted medieval settlement of Cloncurry (KD004-021/001-016) c.3.5km north-northeast of Drehid on a high ridge. A borough was established at Cloncurry in the thirteenth century on the site of an important pre-Norman church (KD004-021002). The Manor of Cloncurry comprised the following elements; an early church site (KD004-021002-), a motte (KD004-021003), an unclassified castle (KD004-021004), a medieval church (KD004-021005) and graveyard (KD004-021016), a friary site (KD004-021006), a cross-base (KD004-021007) and a hollow way (KD004-021008-/KD004-021009). Historical information, including a list of tenants, is recorded in an Extent (or inventory/survey) of the Manor of Cloncurry on November 8th, 1304 (O'Loan 1961, 1-23). Archaeological testing and excavation in advance of the

Kinnegad-Enfield-Kilcock Motorway Scheme revealed evidence of possible medieval field boundary ditches (KD004-021013), possible medieval pits (KD004-021014) and a possible medieval building (KD004-021015-) in the area (National Monuments Service (www.archaeology.ie)).

Non-secular Activity

Once the manors were established manorial churches were founded within them, oftentimes found in association with a ruined early medieval church, however today the ruins of manorial church have been removed and all that remain are graveyards with some foundations to mark the sites.

Many of the ruined churches visible in the landscape today date from the medieval period (though they may have earlier foundations) and are notably often at some considerable distance from any modern settlement. Originally, some of these churches would have been associated with settlements, but the Reformation, 17th century religious wars and rural reorganisation under the subsequent estate system led to their abandonment (Aalen et al 1997). Presently, while many of the churches are ruined, the associated graveyards are sometimes maintained or are still in use. Over 1km to the northeast of the proposed development is Dunfierth church and graveyard (KD004-005001-003) and the site of a castle located at the Dunfierth Cross Roads. The graveyard is enclosed by a stone wall and contains a medieval church (KD004-005001) with an early-19th century Hamilton burial vault 'Hamilton Mausoleum' which incorporates substantial parts of a mid-16th century Birmingham altar tomb and a collection of highly decorative carved stones (RPS B04-04) (National Monuments Service (www.archaeology.ie)).

14.3.2.6 Post Medieval Period – Architectural Heritage

The Anglo-Norman masonry castle at Carbury (KD008-001002) was extended and incorporated into a large late-16th/17th century fortified house (KD008-001003) in the Jacobean style, with a base batter on the west, high chimney stacks and gables, and large transomed windows with hood mouldings. The upper floors of wood were carried on large granite corbels, most of which have fallen out. The site of the main entrance is not identifiable, although there was an entrance on the southern front, onto which an avenue opens, leading to the summit of Carbury Hill. The building is overgrown, with much collapsed rubble masking the interior. Extending to the east, south and west of Carbury castle are low, grassed-over earthworks covering a large rectangular area, representing the probable remains of an extensive designed landscape (KD008-001004), including rectangular gardens and an avenue leading south southwest from the castle and orientated towards the summit of Carbury Hill (OD 407 feet).

Overlooked by the castle to the north is the graveyard of Carbury (KD008-001006). The graveyard is a rectangular area enclosed by a mortared stone wall with entrance gate at the southeast corner. It contains the remains of a church (KD008-001005) and a mortuary chapel (KD008-001007, a National Monument) at its centre, and legible burial markers (table-tombs and headstones) date from the 18th to the 20th Century. Only the west gable wall of a possible parish church survives. It is built of well-dressed, coursed limestone blocks, under a heavy, concrete-like render. A plaque (KD008-001010), dated 1705, commemorating members of the Colley family is mounted on the inner wall face to the south of the doorway. The gable carries a small round-arched bellcote, built of ashlar and is probably a later addition.

14.3.2.7 Built/architectural heritage environment

With the ending of the Williamite Wars in the late seventeenth century, Ireland entered a new era of relative political calm, from 1641 until the Rebellion of 1798 there were few dramatic events and almost a century of peace (Casey & Rowan, 1993).

Without concern for defence, landowners commenced the building of new mansions, and an era of experimentation of new architectural styles and larger, more comfortable houses became the norm. This is exemplified by the construction of Newbury Hall (RPS B08-10), a demesne immediately to the southeast of the

village of Carbury and to the south of Carbury Hill (located c.4km to the southwest the proposed development). It was the seat of Arthur Pomeroy of who later became Viscount Harberton, he obtained the lands of Newbury through marriage to Mary Colley in 1747. The Colleys were residing in Carbury Castle at the time and the new family seat was built in Newbury in the 1760s and Carbury castle subsequently fell to ruin. Newbury Hall (also spelt Newberry) was designed by an important architect at the time Nathaniel Clements (45) who adopted the style and composition of the neo-Palladian villa-style house already seen in grander form the County at Castletown and Carton.

From the eighteenth century onwards, the landscape of County Kildare has a rich and varied heritage of historic buildings ranging from grand estate houses such to more common mid-sized country houses and vernacular architecture (McCullough, 1987). In the study area there are several middle size farm holdings in the area, with ranges of stone farm outbuildings with grounds and settings that form an intrinsic element of their character. These houses would have been occupied by prosperous farmers, manufacturers (e.g. millers) and traders. The majority developed in the late 19th and early 20th century. These properties lay somewhere between the seats of the gentry and the simpler vernacular buildings of the rural tradition.

In his Statistical Survey of the County of Kildare (1807) (Duggan, 2005), Thomas Rawson classifies four rural house types, a Gentleman's residence (Class 1), larger farmhouses (Class 2), smaller farmhouses (Class 3) and cabins of the very poor (Class 4, of which little survives today in the county due to the improvements in housing conditions in the mid-19th century).

The first wave of mid-sized houses and their associated gardens, parkland and structures (including outbuildings, entranceways and lodges) occurred in the eighteenth century where they were concentrated in the more fertile areas of the study area on the high ground surrounding the bogs; Metcalfe Park (RPS B04-17) c.1720, just outside Johnstown Bridge is one such property located 1.4km north of the proposed development.

There are several farm houses dating to the late 19th century along the roads surrounding the proposed development They lie somewhere between vernacular structures and larger country houses. It was common in the second half of the 19th century that prosperous farmers replaced earlier often thatched houses with more substantial farm houses and retained the outbuildings. They were influenced by the larger Georgian style country houses and consequently the new farm houses were formal in style containing two and sometimes three storeys, with slated hipped roofs and the front door centrally placed in the façade with the windows and chimneys symmetrically arranged. They were often named after the townland they were constructed in. Examples of these in the study area include Mulgeeth House , Hermitage House and Clonkeeran House.

Thomas Rawson described the typical farmyard complex in Kildare as:

'farmhouses in general consist of a long thatched building of one storey, containing a large kitchen and fireplace in the centre, and lodging rooms at either end; the front door looks to the bards and stables at the right, behind is the haggard and on the left side are placed the cow and bullock houses'

There are several former thatched structures within Johnstown Village that fit this description, however their thatched roofs have been replaced with tin, the majority of structures are one room deep and white washed. They are difficult to date but surviving examples appear to date mainly between 1750 and 1850. There is a surviving thatched house at Carbury Sweep (RPS B08-11) on the R402.

Johnstown Bridge

Johnstown Bridge is a village in the parish of Cadamstown, barony of Carbury, which developed south of the crossing of the River Blackwater adjacent to the Kildare/Meath border. It comprises a single linear road (NE-

SW) flanked on both sides by sparsely positioned buildings (NIAH 1180102-11801019) amongst more modern structures.

It derives its name from the crossing of the river, which is first mentioned in 1600 and was replaced under the drainage schemes in the 1840s. The bridge (RPS B04-25) was a small but important one and was erected by Patrick Cullen, who received a grant of land in return for its construction (O'Keeffe and Simington 1991). In 1837, Lewis states that the estate village contained 54 houses, 381 inhabitants, a constabulary police station, a dispensary and a Roman Catholic chapel. In addition, fairs were held here four times a year, and a weekly market was held on Mondays.

In the vicinity were Metcalfe Park (RPS B04-17), the residence of F. Metcalfe, Esq. and Johnstown-Bridge, of P. O'Brien, Esq. (Lewis 1837). The village also had its own corn mill, while Metcalfe Park had a flour mill located within its demesne. Three RMP sites in the village of Johnstown Bridge, Co. Kildare: a cross base (KD004-001), an architectural fragment (KD004-003) and two armorial stones (KD004-002), all originally from Clonagh, approximately 4km to the west. The cross is inscribed IHS 1402 and is said to have been from St. Fionntain's church (KD003-020), while the window fragment and the two stone slabs bearing the coat of arms of Gerald Fitzgerald, 11th Earl of Kildare (1554-1585) and of Henry Sidney, Lord Deputy of Ireland (1556-1571) are possibly from the castle site (KD003-017).

14.3.2.8 Industrial Heritage

Industrial heritage consists primarily of sites and structures associated with transportation, communications, manufacturing (milling), public utilities, and materials extraction, but can also refer to archaeological sites and objects which demonstrate early evidence of industry such as metal working, or mining.The first decades of the nineteenth century were distinguished by a period of marked economic expansion as the economy prospered during the Napoleonic Wars, during which Britain relied on Ireland for agricultural and grain supplies. Wheat became a significant cash crop in Ireland from the 1750s onwards and to capitalise on it, many landowners and entrepreneurial business men around the country erected flour mills in the later 1700s and early 1800s. This led to a boom in the milling industry in Ireland in the 18th and 19th centuries and was aided by the new transport links opened up by the Grand Canal and the railway. There were windmills at Johnstown Bridge (RPS B04-13) and Dreenan (RPS B08-12) which are now in ruins.

Road transport links between the mills were also important, protected road bridges crossing rivers include Fear English Bridge (RPS B04-24) and Johnstown Bridge (RPS B04-25).

According to the Kildare Industrial Archaeological Heritage Survey (KDIAHS) the establishment of the canal system was also responsible for the development of one of the dominant industries in this relatively un-industrial part of the county, namely large-scale peat working and extraction. The canal played a dual role in this respect, as it enabled the drainage of large areas of bog while simultaneously acting as a transport network linking these with road and rail networks and urban markets. The working and processing of peat was one of the most important industries in the northwest of Kildare. Although peat working was for the most part un-mechanised (Rynne, 2006), and relatively small in scale prior to the foundation of Bord na Móna in 1946, it was an important employer and since then the industry has had a huge impact in this region. According to the KDIAHS the heightened importance of peat-working in this part of the county also reflects the historical failure of other forms of industrial endeavour in the region (e.g. the collapse of Prosperous as a textile centre), despite the opportunities provided by the improvements in transport infrastructure during the industrial period (Arch-Tech, 2007).

The most extensive complex of bog-workings in Kildare is the late 20th century Bord na Móna Ballydermot/Timahoe Group of Bogs. This comprises two bog groups linked by railway to the ESB Allenwood Power Station and CECA Allenwood Carbon Factory. To the north were the Timahoe works and bog railway,

and to the west were the Ballydermot and Lullymore works and bog railway. This western group was also connected up to the Bord na Móna Lullymore Peat Briquette Factory.

In the 1950's new housing schemes were established to serve the turf development programme; a notable settlement is Coill Dubh or Blackwood (c. 5km to the southeast of Timahoe) was established and this replaced earlier temporary camps at Mucklon and Timahoe.

14.3.3 Cartographic Analysis

17th Century Mapping

The earliest cartographic depiction of the study area is the Down Survey Map of the Barony of Carbury (Appendix 14.3, Illus. 14.1), c. 1656. It depicts the lands to be fortified, divided into baronies, then parishes, and then townlands. It shows the bridge at Johnstown Bridge crossing the River Blackwater. The study area can be approximately located to north and east of a large expanse of bog, with the Fear English River shown (but not named). The church (KD004-005) and possibly the castle site at Dunfierth (KD004-006) is indicated, the exact location of the castle today is unknown, the RMP places it adjacent to the church but this map would suggest it lies further to the east. These are the only structures depicted, this however is not unusual as the primary purpose of these maps was to record the boundaries of each townland, and for that is serves its purpose. The townlands of Kilshanchoe '*Killsanacho*', Kilmurry, Dunfeirth '*Dunfertt*', Mucklon '*Mucklone*' and Drehid '*Dryett*' are shown with their boundaries depicted surprisingly accurately.

The description from the contemporary Civil Survey of 1654 notes:

'*The land arable of the aforesaid barony of Carbury is generall good for all sorts of Graine, the common of pasture of the said barony is generally low and wet ground. There is running through and by the Barony of Carbury aforesaid three Rivers (vizt) the River called the Blackwater, the River Boyne and a River called Ahicorvony. Passes over the said Rivers (vizt) the bridge of Johnstowne being a passe over the blackwater, a place called cassevante being a narrow pass in the Kings County and on the West side of the aforesaid Barony*' (The Down Survey of Ireland, 2013).

18th Century Mapping

Noble and Keenan's 1752 Map of Kildare is a picturesque road map of the county. It also indicates the expanse of Timahoe bog. Johnstown Bridge is shown as a settlement over the River Blackwater. Two story structures, with hipped roofs and gable ended chimneys are drawn at Kilmurry, '*Killyons*' (perhaps Mulgeeth), '*Drighid*' and '*Muckland*' and are indicated as being 'farmhouses' in the legend. A structure shown to the south of Johnstown Bridge and is likely to represent Metcalf Park (RPS B04-17) and its associated mill is also shown. The church and castle at Dunfierth are marked (Appendix 14.3, Illus. 14.2). The nature of the western borderlands especially persists on Alex Taylors Map of the County Kildare 1783 (Illus. 14.3). This map also shows the above mentioned structures, there is a House marked 'Gurteen' which is likely to be a former name for Metcalfe Park.

Rocque's 1790 Map of the Kingdom of Ireland also shows the great expanse of the bog and names the bog as the '*Bogg of Man'*. Johnstown Bridge is shown with its crossing over the Blackwater and the road from the village to Carbury is indicated. 'Dunfert' is the only placename mentioned that is relevant to the study area (Appendix 14.3, Illus. 14.4).

19th and 20th Century Ordnance Survey Mapping

The first edition Ordnance Survey (OS) mapping of 1838 provides an accurate and detailed picture of the proposed development lands and its environs. The large expanse of open bogland is depicted, as are the rivers and roads. The majority of the proposed development lands in this edition is part of an open expanse of bog

land, the fields around the edge of the bog in drier land are irregular in shape and size. In the revised edition there has been a dedicated reclamation and enclosure of the land carried out in the intervening years (Appendix 14.3); this reclaimed land was subsequently planted with commercial forestry in recent times.

The Ordnance Survey first edition six-inch OS mapping (1837-8), second edition (1879-92) and later third editions (1907-10) were examined in detail in relation to the proposed development and associated infrastructure (as detailed in the field inspection Appendix 14.3, Illus. 14.4 and 14.5).

14.3.4 Stray Finds (Topographical Files of the National Museum of Ireland)

The stray finds record within the area around the Timahoe bog indicates the substantial activity that has taken place within and in the vicinity of the bog from the prehistoric period through to the medieval period (Table 14.5). Stray finds have been recorded in three of the townlands that lie within or in the environs of the proposed development area. The artefacts were identified by the Bord na Mona cutting operations.

Table 14.5: Topographical Files

Reg. No.	Townland	Description
1972:355.1.-2	Drehid	1972:355.1.-2 - Bent wooden stake in two parts found in bog 4ft deep during bog cutting, found with a pelvis of a female Elk found during Bord na Mona cutting operations. Found at a depth of about 4 ft. Below ground surface near what he termed 'the Dane's Road' (not Rynnes excavation in KAS or in JKAS - which appears to be situated to the north of a togher investigated in 1966 (IA/12/66, see finds from Timahoe West). Workers said that they have found numerous bog butter in this section of Timahoe bog.
1968:36,37, 38 1966:28.1 & 28.2 1945.61.2 1945.60 & 61.1 IA/382/47	Mucklon	1968:36 - Medieval pottery base and body sherd, found in ploughed field. Wheel-thrown vessel, base and body fragment, with finger pinched decoration around the edge. 1968.37 - Saddle quern, two fragments, found in ploughed field. 1968:38 - Saddle quern, found in ploughed field. 1966:28.1 & 28.2 - Two saddle quern rubbers found during mechanical turf cutting in Timahoe bog. 1945.60, 61.1 & 61.2 - Three shoes. Each consists of two piece leather upper and a wooden patten (wooden sole mounted on three stilts. IA/382/47 - Wooden vessel found in Killinthomas bog about 5ft deep. 18'' diam x 3'' thick, centre (square) bore, 4 smaller and peg-holes in circumference.
1970:139 1966.2 1978.3 (IA/7/1978) 1942:409 1941:1120 M1950:4 2011:132 (IA/61/2011)	Timahoe West	Timahoe West: 1970:139 - Roughout for two-handled wooden vessel, found on gravel under 10-12ft of peat. 1966.2 - Flint hollow-based arrowhead, found in Timahoe bog at unknown depth 1958. Timahoe E/W: 1978.3 - Leather shoe. Timahoe: 1942:409 - Wooden tool, now in 4 fragmented parts; one paddle-like object, one perforated disc piece and two pegs. Possibly parts for a butter paddle? Found in bog at Derrymahon. 1941:1120 - Spearhead, bronze kite-shaped, side-looped. Found in bog.

Reg. No.	Townland	Description
		M1950:4 - Wooden vessel fragments, found in bog at depth of 7 ft. 2011:132 - Bog butter. IA/35/81 - recorded find for 'vicinity of Timahoe bog'. Human skeletal remains found in bog by workmen in 1981, possibly in the area of Drummond or Ballynakill Lower townlands. There was also the mention of a leg bone with leather around it. Find record only - Human forearm found in Timahoe bog.

14.3.5 Townland Names

All of the townland names within the proposed development are anglicised Irish forms of early Irish names some of which date at least to the late medieval period and very likely earlier (Table 14.6); they predominantly relate to land use and land form.

Table 14.6: Toponyms- placename meanings (townlands) within the proposed development

Townland	Origin	Irish Translation	Meaning and notes of interest (Logainm.ie)
Ballynamullagh	Anglicisation of an Irish Name	*Baile an Mallacht*	Meaning the '*town of the curses or maledictions'*. There have been references to this townland name since at least 1549
Coolree	Anglicisation of an Irish Name	*Cul fhraoigh*	Meaning *'back of the heath'.* There have been references to this name since at least 1728
Drehid	Anglicisation of an Irish Name	*An Droichead*	Meaning *'a bridge'.* There have been references to this name since at least 1600
Killyon	Anglicisation of an Irish Name	*Cill Liadhaine*	Meaning '*Church of St Liedania, the mother of St Kieran of Laighir'.* There have been references to this name since at least 1549.
Kilmurry	Anglicisation of an Irish Name	*Cill Mhuire*	This name references 'Mary's church' There have been references to this name since at least 1549.

14.3.6 Townland Boundaries

The boundaries were first described and recorded in the surveys following the land confiscations of the mid-17th century, being further standardised in the mid-19th century with the work of the Ordnance Survey. Townland boundaries were often laid out along natural features including rivers, streams and high ground or manmade features such as roads and walls. Townlands and other landholdings were further subdivided into individual fields generally by means of earthen banks, which over time were colonised by hedgerow and trees. The typology of the boundaries can vary in different parts of the country, with some areas favouring distinctive high, wide earthen banks or just stone walling; sometimes there is a combination of earth and stone, with a stone-revetment or a facing on an earthen bank.

The field and townland boundaries within the proposed development are, for the most part, formed by mature, dense hedgerow / trees with deep drainage ditches, or by streams now subsumed by forestry. Where the townland boundaries are depicted on the historic OS maps within expanses of bog, these were notional and do not – and never did – represent physical boundaries on the ground.

14.3.7 Field Inspection

The field assessment of the proposed development is described in Appendix 14.4 with accompanying illustrations, historic map sources and photographs. It also provides an assessment of sites and features within proximity to the proposed development that might be subject to setting impacts.

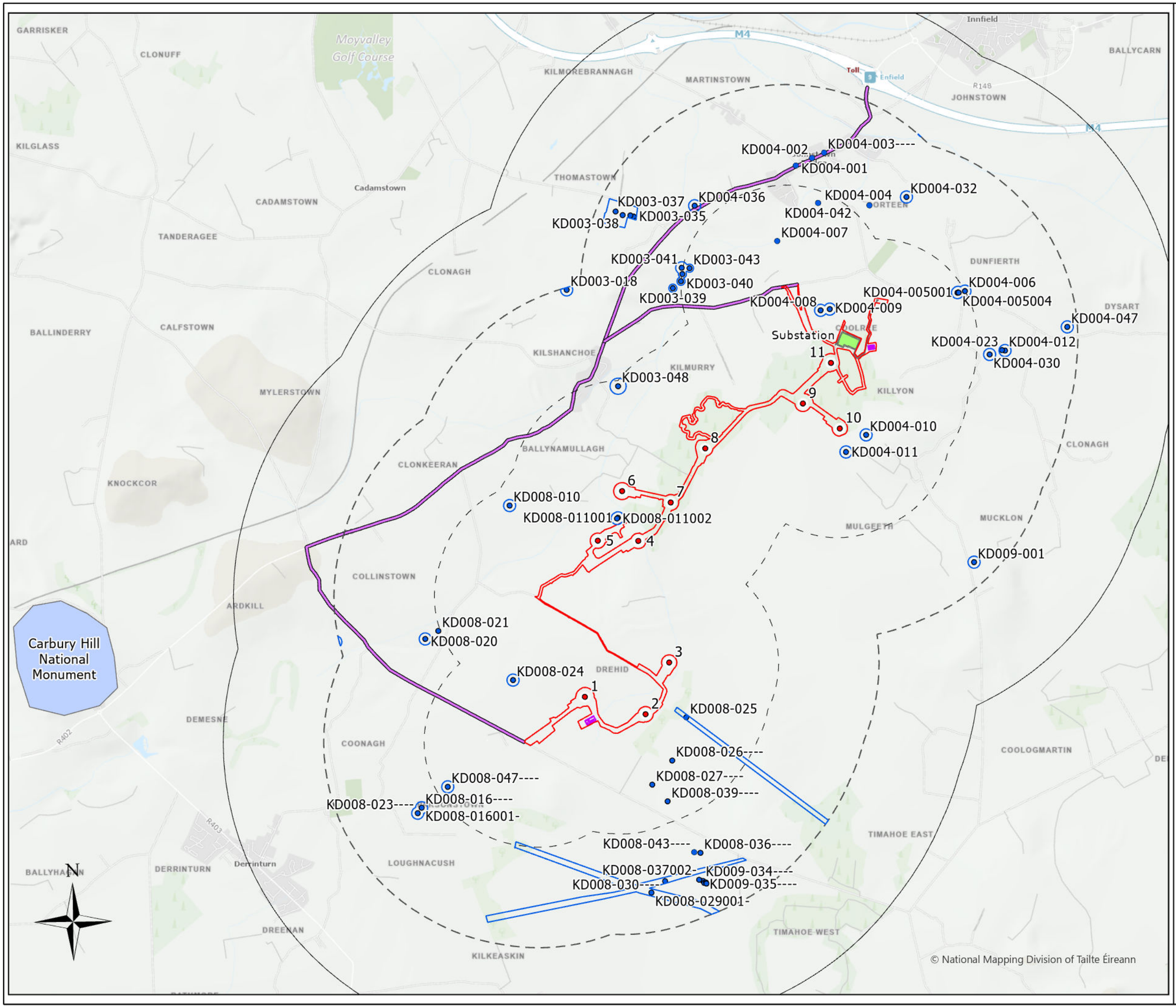
14.3.8 Archaeological and Cultural Heritage - Designated Sites

14.3.8.1 UNESCO Cultural World Heritage Sites and Candidate World Heritage Sites on the Tentative World Heritage Lists

There are no UNESCO Cultural World Heritage Sites (WHS) within the 20km Zone of Theoretical Visibility (ZTV) of the proposed development (see Chapter 15). Brú na Bóinne a World Heritage Site is located c. 40km (measured from the outer buffer zone of the site) to the northeast in County Meath. Two candidate world heritage sites on UNESCO World Heritage Tentative List as part of The Royal Sites of Ireland assemblage are the Tara Complex (the hill is located 26km northeast in County Meath) and Dún Ailinne (located at least c. 27km to the southwest).

14.3.8.2 National Monuments within c. 5km of the Drehid Wind Farm

There is one national monument vested in the care of Kildare County Council within a 5km radius of the proposed development, a mortuary chapel on the southern slopes of Carbury Hill (RMP KD008-001006 and RPS B08-02)(Table 14.7, Fig. 14.1).



Legend

- RMP/SMR ZoN within 2km
- RMP/SMR Sites within 2km
- Carbury Hill (National monument)
- Proposed Development Boundary
- Turbines
- Substation
- Temporary Compounds
- Turbine Delivery Route
- 1km Buffer
- 2km Buffer
- 3km Buffer

0 0.5 1 2 Km

Title: Archaeological Heritage

Figure No.: 14.1

Project: Drehid Wind Farm & Substation

Map title: Archaeological Heritage

For: North Kildare Wind Farm Ltd.

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Monuments vested in the care of local authorities may be treated as national monuments i.e. 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…*'[2].

Table 14.7: National Monuments within c.5km of the proposed development (measured from outer edge of monument)

Site	Status	Location (ITM/NGR)		Turbines within 1km
Carbury Hill Complex	The mortuary chapel at Carbury Hill is in the vested care of Kildare County Council	668624	735082	The chapel lies 5.2km W of T1

Carbury Hill is one of a number of low limestone hillocks that are found in the Bog of Allen. It provided a dry and easily fortified site for early inhabitants; its hilltop location also had ritual significance in the prehistoric period (Willmot, 1938) with three barrow sites sited on it (see historical background above). It is a dominant land mark in this area, with a fortified house prominently sited on the northern shoulder of the hill, being a notable silhouette in the skyline. The mortuary church and graveyard are located on a plateau to the south of this. There is access to the chapel and castle site through fields at the northern end of Carbury Village.

While the chapel is the only National Monument on the hill, it forms part of a multiperiod site and must be viewed as a component part of a complex of interrelated sites. Any assessment of Carbury Castle must also include the historic association between the later fortified house and its replacement Newbury Hall (RPS B08-10), a large intact demesne on the foothills to the southeast. The historic relationship between Carbury, Carbury Village and Newbury Hall demesne is significant and an important part of the setting of the site. The principal house at Newbury Hall is 4km southwest from T1, whilst the outer boundary of the demesne is located at least 2.8km away.

A detailed assessment of Carbury Hill Complex and Newbury Hall is provided in Appendix 14, Section 14.5.1.

14.3.8.3 Recorded archaeological monuments[3]

The Zone of Notification (ZoN) of one record of monuments and places site (RMP) lies within the proposed development boundary (Fig. 14.1, Table 14.8), a ringfort and souterrain site (KD008-011/001-002). This site is assessed in detail in Appendix 14, Section 14.4.4.

Table 14.8: RMP sites within the proposed development

RMP. No.	Townland	Site	ITM		Turbines within 2km
KD008-011001/002	Drehid	Ringfort – rath & souterrain	674174	736131	T6 is 210m N T5 is 230m SW T4 is 245m SE

There are 33 recorded archaeological monuments and complexes within 2km of the proposed development (Fig. 14.1). Of these sites, thirteen have been recorded or excavated in advance of milling operations (toghers, gravel trackways and peat land structures). Sixteen sites either have no remaining above ground visible trace or are known from placename evidence/tradition only (such as a burial site, a habitation site, a church site and un-venerated holy wells) or are sites that have a very immediate setting (such as a cross or architectural

[2] National Monuments Act (As amended)

[3] All distances referred to in the text below are measured from the nearest turbine to the Zone of Notification (ZoN) of the recorded archaeological site (RMP site) or the nearest point of the cultural heritage site or established buffer zone/ property boundary if defined.

fragment moved to a new location) or are low-lying in nature and do not have settings sensitive to the proposed development (see Appendix 14.7 for descriptions of these sites and their sensitivity).

Of these sites only 5 are upstanding. These sites are indicative of the early medieval and medieval settlement of the area on higher ground around the bogland (i.e. comprising four ringforts and Dunfierth church and graveyard). Four of the sites are within a 1km radius of the proposed development (Table 14.9), whilst Dunfierth is located 1.7km north of the proposed development (Table 14.10) (Figure 14.1). These sites are assessed in detail in Appendix 14, Section 14.5.2.

Table 14.9: RMP sites within 1km proposed development potentially sensitive to the proposed development

Reg. No.	Townland	Site	ITM		Turbines within 1km
KD004-008	Coolree (Dunfierth Ed)	Ringfort - rath	676191	738195	T11 is 475m SSE, T9 is 850m SSE the substation is 240m SE
KD004-009	Coolree (Dunfierth Ed)	Ringfort - rath	676282	738207	T11 is 476m SSE, T9 is 916m SSE, Substation site is 193m SE
KD004-011	Mulgeeth	Ringfort - rath	676444	736786	T10 is 180m to the NNW T9 is 585m to the NW
KD008-010	Ballynamullagh	Ringfort - rath	673095	736253	T5 is 885m SW

Table 14.10: RMP sites between 1-2km potentially sensitive to the proposed development

Reg. No.	Townland	Site	ITM		Turbines within 1-2 km
KD004-005/ 001-004	Dunfierth	Church and Graveyard.	677566	738371	1.3km NE of T11, 1.75km NE of T10 1.8km NE of T9 1km NE of the Substation 900m NE of the Northern Compound

The ringforts are located on well drained land on the outer edges of the large expanse of bogland, they all lie within modern field systems in a landscape that has been considerably altered over the last number of decades, and their banks are overgrown with mature vegetation. Large tracts of afforested land have been planted in the fields between the sites and along the edges of the bog, any former sightlines towards the bogland or inter-visibility between the sites is no longer legible. The most recent plantation is located in the fields between the ringfort in Ballynamullagh and T6 in Drehid (planted sometime in 2006).

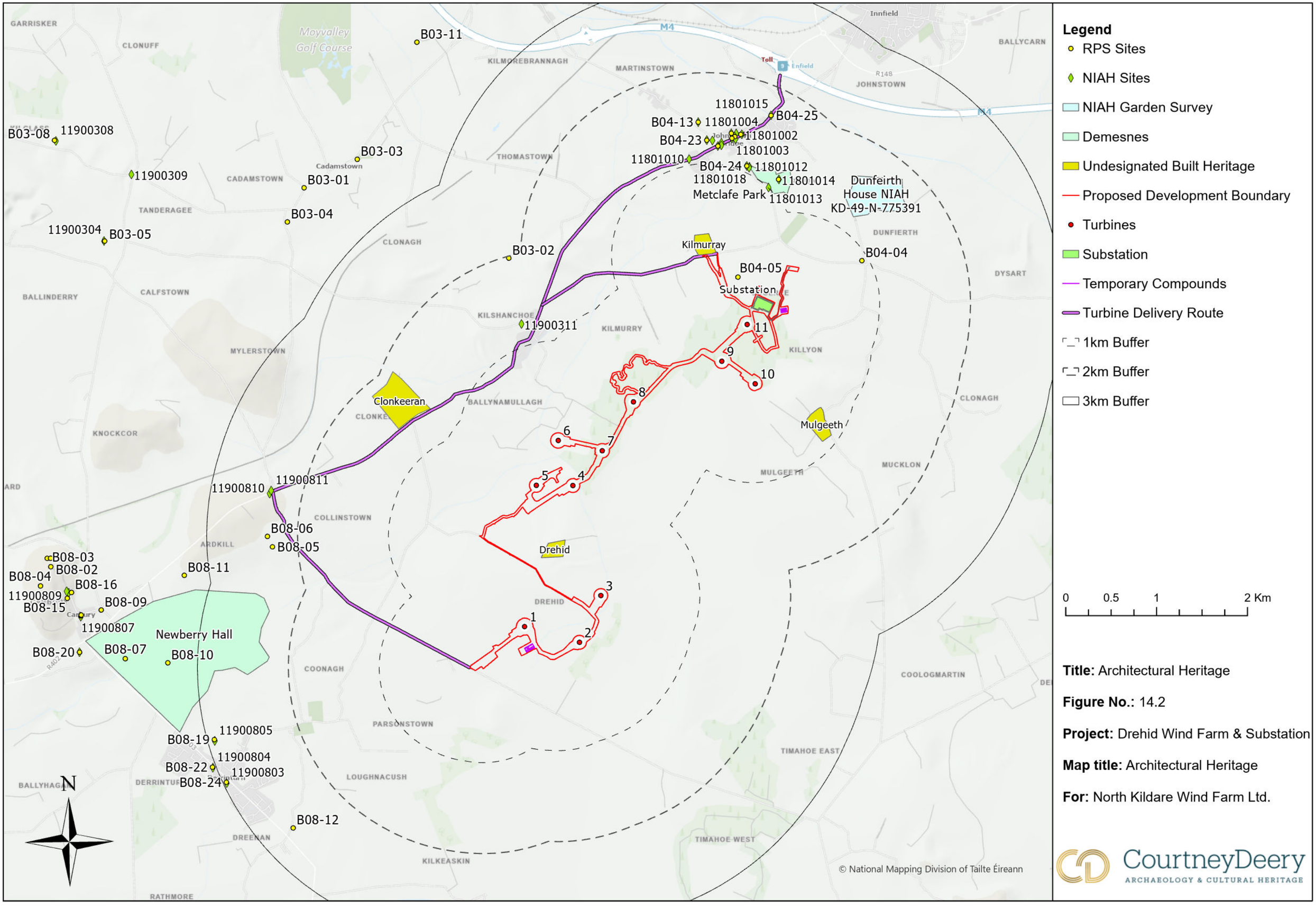
14.3.8.4 Protected Structures, NIAH sites and NIAH Garden Sites

There are no protected structures, NIAH sites or NIAH historic garden sites within or in the immediate vicinity of the proposed development (Fig. 14.2).

There is one protected structure within 1km of the proposed development, a ringfort site in Coolree (RPS B04-05, also RMP site KD004-008) which is described above (Table 14.11, detailed in Appendix 14, Section 14.5.2.2).

There are 4 protected structures between 1-2km of the proposed development (Fig. 14.2). Of these, two are bridges, Johnstown Bridge (RPS B04-022) and Fear English Bridge (B04-24) which do not have extensive settings (see Appendix 14, Section 14.7.2 for descriptions of these sites and their sensitivity). The remaining two sites are Metcalf Park (RPS B04-17, Table 14.11) and Dunfierth Church (B04-04) which is also a recorded archaeological monument (RMP KD004-005001-003).

These sites are detailed in Appendix 14, Sections 14.7.2.4 and 14.7.3.1.



Legend

- RPS Sites
- NIAH Sites
- NIAH Garden Survey
- Demesnes
- Undesignated Built Heritage
- Proposed Development Boundary
- Turbines
- Substation
- Temporary Compounds
- Turbine Delivery Route
- 1km Buffer
- 2km Buffer
- 3km Buffer

0 0.5 1 2 Km

Title: Architectural Heritage

Figure No.: 14.2

Project: Drehid Wind Farm & Substation

Map title: Architectural Heritage

For: North Kildare Wind Farm Ltd.

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Table 14.11: Protected structures/NIAH sites within 2km of Drehid potentially sensitive to the proposed development

Reg. No.	Townland	Description	Location (NGR)		Turbines within 2km
RPS B04-04 (RMP KD004-005001-003)	Dunfierth	Dunfierth Church Ruins & Hamilton Mausoleum & carved stones	277623	238348	1.3km NE of T11, 1.75km NE of T10 1.8km NE of T9 1km NE of the substation 900m NE of the northern compound
RPS B04-17, NIAH 11801014, 11801012, 11801018, NIAH Garden: KD-49-N-766392	Gorteen (Carbury By)	Metcalfe Park (House, walls/gates)	276705	239241	Outer boundary: 1.4km N of T11 1.9km NNE of T9,

There are 5 sites of a regional rating in the NIAH between 1-2km of the Proposed Development, these sites have immediate settings that at this distance would not be sensitive to the proposed development i.e. a water pump, (NIAH Ref: 11801010), a belfry (NIAH Ref: 11801007), a monument (NIAH Ref: 11900311), a single storey farmhouse cottage in Johnstown (NIAH Ref: 11801016) and a derelict two storey farm house in Gorteen (on the roadside adjacent to Metcalfe Park, NIAH Ref: 11801013) (see Appendix 14, Section 14.7.2 for descriptions of these sites and their sensitivity).

NIAH garden survey sites within 2km include Metcalfe Park (NIAH Ref: KD-49-N-766392) and Dunfierth House (NIAH Ref: KD-49-N-775391). Metcalf Park (RPS B04-17) is examined in Appendix 14, Section 14.5.3.1. Dunfierth House however is an undesignated site, there has been significant development within its lands where a number of modern agricultural buildings and care homes have been constructed in the core landscape (associated with Dunfierth Farm), the main garden features are unrecognisable and only peripheral features are visible (see Appendix 14, Section 14.7.2)

14.3.8.5 Undesignated sites

There are farm houses within 2km of the Proposed Development that are not present in the RPS or NIAH which were influenced by the larger Georgian style country houses, being formal in style and symmetrically arranged (Fig. 14.2, Table 14.12). They were often named after the townland they were constructed in. Examples of these in the study area which appear on the first edition OS maps and other earlier sources include Mulgeeth House, Drehid House and Hermitage House and Clonkeeran House. While these type of farm houses were a ubiquitous type of building of the period they have local cultural heritage value. These sites are examined in detail in Appendix 14, Section 14.5.4.

Table 14.12: Undesignated structures potentially sensitive to the proposed development

Reg. No.	Townland	Description	Location (ITM)		Turbines within 2km
N/a	Mulgeeth	Farm House	677063	736568	700m SE of T10
N/a	Drehid	Farm House	677063	736568	600m NW of T3 605m S of T4 605m NNW of T5
N/a	Gorteen	Hermitage House (formerly Kilmurry)	675774	738560	880m NNW of T11
N/a	Clonkeeran	Farm House	671899	736947	1.4km to the west of T6

Later roadside houses and farm houses (appearing on the later OS Map editions) and smaller vernacular structures that are not in the immediate vicinity of the proposed development were not considered further in this assessment and were scoped out during the field survey and desk-based assessment. They are modest buildings and are experienced within their immediate surroundings, they are usually in very active farm yards often located to the rear with modern additions and farm buildings added. The positive contribution made by setting does not extend outside of the properties, where their functions and relationships to other buildings can be appreciated. Their heritage significance will be unaffected by the presence of the proposed development and they do not merit further assessment

14.3.9 Associated Infrastructure for the Proposed Development

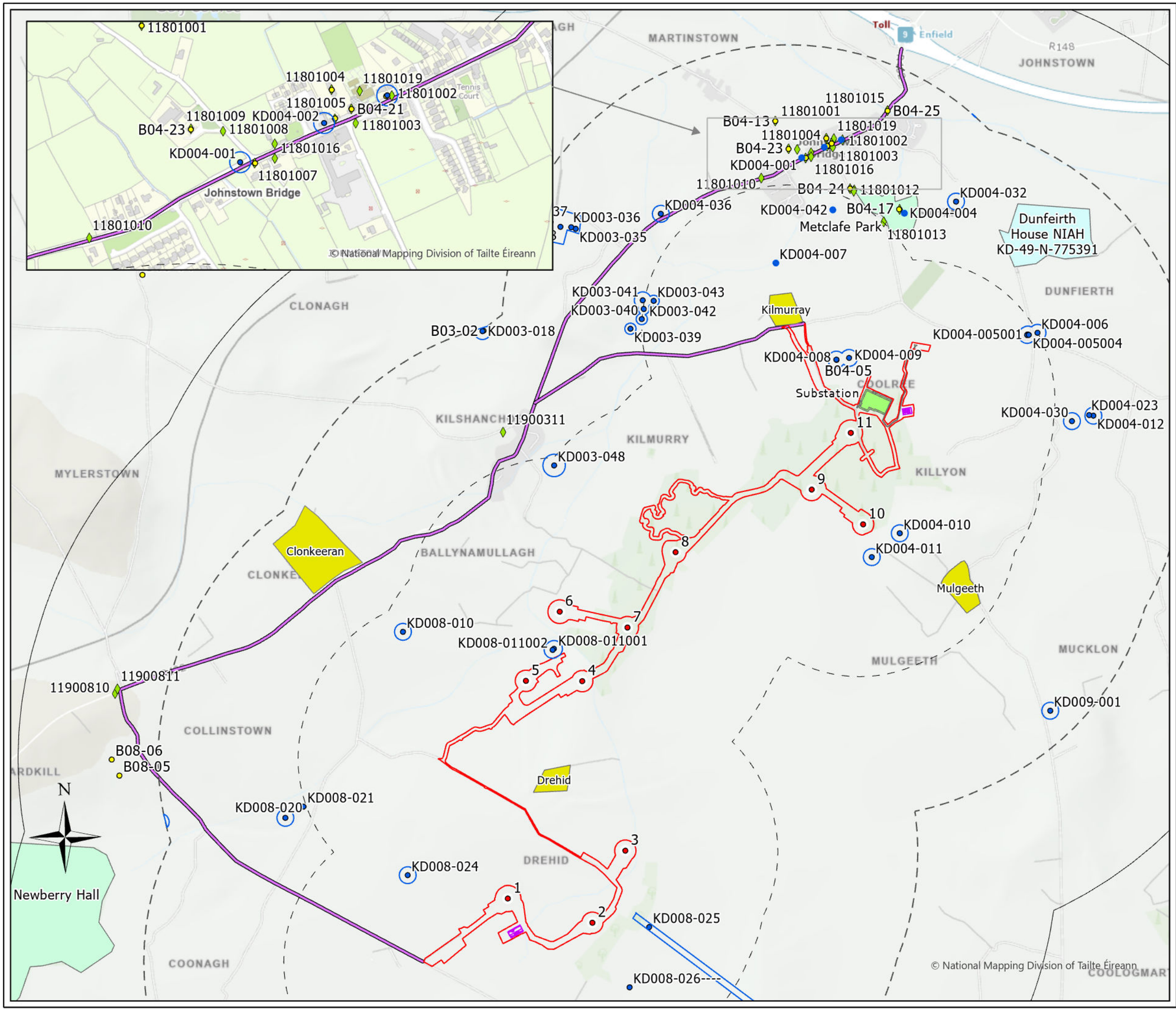
Associated infrastructure inside and outside the Proposed Development site which are assessed for the purposes of this study include:

- Turbine Delivery Routes
- Recreational Trails
- Cable Routes

The assessment is based on a desk study, with reference to known sites recorded in the Record of Monuments and Places (RMP), Record of Protected Structures (RPS) and National Inventory of Architectural Heritage (NIAH) Building Survey. The assessment also includes undesignated sites (i.e. sites of local cultural heritage merit that are not afforded statutory protection) listed in the Kildare Industrial Archaeological Heritage Survey (KDIAHS) (Giacometti, 2007). A field walkover survey of the proposed route was undertaken as part of the field inspection the results of the survey are provided in Appendix 14, Section 14.6.

Turbine Delivery Routes

The turbine delivery route (TDR) will use the existing road network, it will run from the M4 (Fig. 14.3), through Johnstown Bridge Village and then runs along the recently improved R402, through Kilshanchoe Village. It will then turn southeast along a local road to the proposed development southern site entrance. Access to the northern part of the site will be through a new temporary road through greenfields in in Kilmurry (L5025).



Legend

- RMP/SMR Sites within 2km
- RMP/SMR ZoN within 2km
- Carbury Hill (National monument)
- RPS Sites
- NIAH Sites
- NIAH Garden Survey
- Demesnes
- Undesignated Built Heritage
- Proposed Development Boundary
- Turbines
- Substation
- Temporary Compounds
- Turbine Delivery Route
- 1km Buffer
- 2km Buffer
- 3km Buffer

0 0.38 0.75 1.5 km

Title: Turbine Delivery Routes

Figure No.: 14.3

Project: Drehid Wind Farm & Substation

Map title: Archaeological Heritage

For: North Kildare Wind Farm Ltd.

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Along the route, there are 14 protected sites and structures (RPS/NIAH sites) identified (Fig. 14.8, Appendix 14, Section 14.6.1), none of which will be impacted by the TDR. The route will cross Johnstown Bridge (RPS B04-25), the bridge, which gave the village its name was built during the drainage operations of the River Blackwater in the 1840s and replaces an earlier structure. The proposed TDR uses the existing roads and, as such, the protected structures and their associated property boundaries and RMP sites will not be affected.

Within Johnstown Bridge the route passes three recorded archaeological sites (listed and described in Appendix 14.6.1). All of these are medieval architectural fragments, which have been incorporated into various structures within the village and are thought to have originated at Clonagh church and castle. There is also an enclosure site in a field to the north of the route in the townland of Johnstown, the road immediately to the south of this has been realigned.

The TDR will have no effect on built heritage or archaeological heritage in the vicinity of the road corridors. Road closures and traffic calming measures will be put in place

Cable route

An internal collector will be inserted into the access tracks across the site. The Proposed Substation in Coolree will connect to the national grid via a new 110 kV substation and a 'loop-in loop-out' connection to the existing Kinegad–Rinawade 110 kV overhead line. There is the short run of 110 kV cable trenched into agricultural lands running along field boundaries between the new substation and the connection to the existing overhead line. The cable route will have no effect on built heritage or archaeological heritage.

Recreational Trails

As part of the Proposed Development, the existing walking trail from the local road to the north of the site will be enhanced, incorporating sections of the upgraded internal farm access tracks. The proposed recreational amenity trail will partly use the upgraded wind farm track. which lie within the redline boundary of the development, will be open to the public and will support activities such as walking, birdwatching, and nature exploration. They have been assessed alongside the internal access tracks, with findings detailed in the field inspection in Appendix 14, Section 14.4.

14.4 Potential Effects – Wind farm Site

14.4.1 Introduction

A glossary of effects and assessment terms, including the criteria for the assessment of the significance of the effect, is contained in Appendix 14.2 (Glossary of Effects and Assessment Methodology) in Volume 3 of this EIAR.

14.4.2 Construction Phase Effects

UNESCO World Heritage Sites and Candidate Sites

The construction phase of the proposed development will have no effect on UNESCO World Heritage sites or candidate sites on the Tentative List of properties for potential nomination and inscription on the World Heritage List.

National Monuments
The construction phase of the proposed development will have no effect on National Monuments.

Protected Structures

The construction phase of the proposed development will have no effect on the immediate curtilage or attendant grounds of protected structures (RPS) NIAH sites or features, NIAH garden survey sites or on Architectural Conservation Areas.

General Areas of Archaeological potential

As with any developments proposed within a greenfield environment, there is a potential that previously unknown below ground remains of an archaeological interest will be revealed as a result of earthmoving activity associated with the development.

The following is a list of areas of archaeological potential:

- Dryland/ Wetland interface potential
- The archaeological potential of marginal lands or wetland is based on the attractiveness of bog margins for human settlement activity from the time the bog first began to grow and expand in the landscape in the prehistoric period, and possible settlement on the drier grasslands on the margins. This is of particular relevance for the areas of the proposed development that are located within agricultural fields i.e. in the location of T1 to T5, associated internal access tracks, and the two temporary construction compounds. As demonstrated by the number of early medieval sites sited on the edges of this bog it is considered possible that earthmoving works associated with the construction of the proposed turbines, cable and access tracks may uncover previously unknown archaeological sites, soils or finds in these greenfield areas.
- Former bogland
- More than half of the area within the Proposed Wind Farm is under forestry in an area of former bogland (Turbines T6 to T11, associated internal access tracks, and proposed substation site). Although bog has an inherent archaeological potential, tree-planting, land drainage and tree-root activity is likely to have disturbed any archaeological deposits which may have existed. The potential is considered to be low, as a result of this, but there is a possibility (albeit slight) that archaeological remains could survive below the tree roots in this former bogland.
- The length of existing track to be upgraded within the wind farm is 951m and the new internal access track length is 9.67 km, almost half of which is within commercial forestry. As before in the forestry area the potential is considered to be low, in the greenfield areas there is a general greenfield potential, where previously unknown subsurface archaeological features and finds might be uncovered.
- Forest plantation on former dryland
- Historic mapping shows that Turbine T6 is in forest plantation's that are located on former dryland at the edge of the bog. The archaeological potential due to the disturbance of the forestry in this area is considered to be negligible.
- River Crossings
- Rivers and streams act as foci of settlement related activity and have an inherent archaeological potential. There are 3 no. of watercourse crossings required within the Proposed Wind Farm site. It is proposed to construct clear span bridges at these locations. No features of archaeological potential were noted along the banks of the rivers as the crossings are in locations that have already been realigned or have been deeply ditched and cleared as part of bog drainage and land improvement works. These crossings are considered to have a low to negligible archaeological potential. This is however mitigated by the intention to use clear span bridges to cross the watercourses and as such there will be no in-stream works or direct impact on the watercourses.
- Forestry plantation

- Turbines T6– T11 are within land under forestry in an area of former bogland / boggy pasture and consequently tree felling will be required as part of the project. Although bog has an inherent archaeological potential, tree-planting and tree-root activity is very likely to have disturbed any archaeological deposits which may have existed. The potential is considered to be low- negligible.

Should in-situ archaeological features or sites be identified during the construction phase, there would be a direct and permanent effect of a **medium** magnitude on these feature/sites. As the significance of the site is **unknown** the significance of the effect will be **indeterminable.**

Turbine Delivery Routes

The turbine delivery routes will cross Johnstown Bridge (RPS B04-25). This is an actively used structure. Given its **medium significance**, the effect of the delivery route on the bridge is considered to be **negligible,** resulting in an overall effect of **not significant**. No other cultural heritage features will be impacted by the TDR.

Setting Impacts During Construction Works

There is also a potential that/for construction related activities to have an effect on the setting of assets e.g. such as the erection of the turbines and cranes. This is a temporary effect with one turbine being erected at a time. This will have a **negligible** effect on any affected setting.

14.4.3 Operational Phase Effects

Potential Direct Effects

It is anticipated that all direct archaeological heritage effects will be resolved to the satisfaction of the National Monuments Service, Department of Housing, Local Government and Heritage at the pre-construction stage of the development and therefore there will be no potential direct effects at the operation stage of the development.

Potential Setting Effects

Setting Effects on UNESCO World Heritage Sites and Candidate Sites

The proposed development will have no effect on the setting of UNESCO World Heritage sites or on any candidate sites included in the Tentative List for potential nomination and inscription on the World Heritage List.

Setting Effects on Heritage Assets

The assessment has shown that the operation of the proposed development would have an effect on the setting of six heritage assets for the duration of the operational life of the wind farm (Table 14.13). These visual effects would be fully reversed when the wind farm is decommissioned. Each site was individually assessed for an impact on their setting, the full assessments are provided in Appendix 14, Section 14.5, a summary table is provided below as Table 14.13:

Table 14.13: Setting Impacts on Cultural Heritage Assets

Site Name	Sensitivity	Magnitude	Impact Significance
Carbury Hill Complex (KD008-001005), including Newbury Hall (RPS B08-10)	High	Negligible - Low	Slight
Ringfort at Drehid (RMP KD008-011001/002)	Medium – RMP Site	Low	Slight
Ringfort in Mulgeeth (KD004-011)	Medium – RMP Site	Low	Slight
Ringfort – rath in Coolree (KD004-008)	Medium – RMP Site	Negligible	Not Significant
Ringfort – rath in Coolree (KD004-009)	Medium – RMP Site	Negligible	Not Significant
Ringfort – rath (KD008-010)	Medium – RMP Site	Negligible	Not Significant

The significance of the effect ranges from an effect that is **not significant** to being of **slight** significance depending on the sensitivity of the asset. The impacts are described as follows:

- Impact on the setting of National Monuments:
- The Carbury Hilltop complex, including the mortuary chapel and Newbury Hall Demesne, retains a high-value setting with open panoramic views that contribute to its heritage significance. The Proposed Wind Farm, located over 5km away, will result in some visual change to the low-lying landscape but will not disrupt key views or the relationships between the hilltop, Newbury Hall, and surrounding landmarks. Designed views to Newbury Hall and appreciation of its parkland will remain unaffected, with only minor, screened turbine visibility in less sensitive areas. Overall, the wind farm's impact on the **high sensitivity** of the site (i.e. national monument status), is assessed as being between a **negligible–low magnitude**, resulting in a **slight significance** of impact. Full details of the assessment are provided in the Appendix 14 (Section 14.5.1).
- Impact on the setting of Recorded Archaeological Monuments (RMP Sites)
- As detailed in the assessments provided in Appendix 14, (Section 14.5.2), there will be an effect on the setting of two ringfort sites i.e. the ringforts in Drehid (RMP KD008-011001/002) and in Mulgeeth (KD004-011). The settings of these sites have been altered over time, they are not physically dominant features in the surrounding landscape and their relationship to the bogland and intervisibility between other ringfort sites are no longer present due to dense afforestation of the surrounding lands. The turbines however lie in close proximity to the sites and will be dominant over them. In both cases the ringforts archaeological (evidential) and historic values will remain unchanged and the ability to understand the context of the sites will still be present. The visual change in the setting of the sites for the duration of the wind farm is considered to result in a **low impact** on the significance of the recorded monuments with an overall effect of **slight significance**.
- Impact on the setting of Protected Structures, NIAH building or garden survey sites
- As outlined in the assessments provided in Appendix 14 (Section 14.5.3), there will be **no impact** on any protected structures, including Coolree Ringfort, Metcalfe Park, or Dunfierth Church and Graveyard.
- Impact on the setting of Undesignated Sites
- As detailed in Appendix 14 (Appendix 14.5.4), an indirect impact is identified for Mulgeeth House, with a very slight change to its baseline setting due to possible views from areas within the garden parkland north of the house. The visual change in the site's setting during the wind farm's operation is assessed as having a **low impact** on this **low-sensitivity asset**, resulting in an overall effect that is **not significant**.

14.5 Cumulative Impacts

Potential cumulative impacts may arise during construction and operation, as a consequence of the Proposed Development acting in-combination with other plans and projects.

There are no existing or permitted wind farm sites within the immediate vicinity of the Proposed Wind Farm. The closest sites are in County Offaly. The existing Mount Lucas wind farm is located c. 17km to the west of Drehid; it comprises 28 wind turbines with a hub height of 100m. Cloncreen Wind Farm located c15km to the west will consist of 21 turbines with a hub height of 107m. The almost completed construction of Yellow River wind farm development c. 17km to the west and comprises 29 turbines, 100 to 110 m in height. In County Westmeath there are three turbines in Crowinstown, c.21km north northwest of the Proposed Wind Farm with a hub height of 85m and also a single permitted turbine in Dryderstown that has a hub height of 64m. The proposed Drehid Waste Management Facility is located 6km south.

The existing wind farms are not viewed from the cultural heritage assets within the immediate vicinity of the development farm due to the topography in the general area and the distance of the wind farms. It is not anticipated that there will be any increase in terms of indirect effects on the setting of monuments and protected structures within the immediate vicinity of the Proposed Wind Farm due to the occurrence of these distant wind farms.

Hortland Solar Farm (3.9km) and the Timahoe North Solar Farm (under construction) are located to the east of the Proposed Development, both situated within a landscape characterised by industrial cutover bog. In addition, consented solar farms are located at Coolcarrigan (3.7km southeast) and Dysart (2.5km northeast). While the Proposed Wind Farm includes wind turbines, it has been designed to minimise significant impacts on cultural heritage sites. Due to its lack of vertical elements, the solar farm does not introduce substantial visual or physical changes to the surrounding environment. Consequently, the combined effects of both developments do not compromise the integrity, authenticity, or appreciation of nearby cultural heritage sites. Therefore, no additional cumulative effects are anticipated. Similarly, other consented small-scale or localised developments (as outlined in Chapter 15) are not expected to result in any cumulative effects on cultural heritage sites in the vicinity of the Proposed Wind Farm.

14.6 Potential Impacts during Decommissioning

There will be no significant potential impacts on the archaeological, architectural and cultural heritage environment during the decommissioning of the development as the established access tracks are used for the dismantling and removal of the built features of the wind farm.

14.7 Potential Effects– Substation Site

There are no designated cultural heritage sites or features identified during the field walkover survey within the proposed substation site area or connection. The substation is located in a greenfield on the margins of a bog and as such has an inherent greenfield archaeological potential. There is a potential that previously unknown archaeological features may be identified during the earthmoving works for the substation

Should in-situ archaeological features be identified during the construction phase, there would be a direct and permanent effect of a **medium** magnitude on these features. However, as the significance of any potential archaeological site is currently unknown, the significance of the effect would be **indeterminable.**

Given the isolated location of the substation site, it will be screened from the surrounding cultural heritage assets by the landscape and intervening vegetation/hedgerows and as such no setting impacts are anticipated.

14.8 Mitigation Measures – Wind Farm Site

14.8.1 Construction Activities

The following mitigation measures will be carried out at the earliest stages of construction/ during the site preparation phase. All archaeological works will take place under licence to the National Monuments Service of the Department of Housing, Local Government and Heritage (DHLGH).

Archaeological monitoring of all earth-moving works will be undertaken at all earthmoving/excavation works associated with the development of:

- Turbine foundations
- Access tracks
- Hardstands
- Internal cables
- Temporary construction compounds
- Earthen berms and landscaping along the access tracks and around the turbines

The purpose of monitoring is to determine if any archaeological material or features are uncovered during ground disturbance works. In the event of the discovery of archaeological finds or remains, the DHLGH and the NMI will be notified immediately. Provision will be made to allow for, and fund any, archaeological work that may be needed if any remains are noted. If features are revealed, the immediate area will be investigated, allowing no further development to take place until the site is fully identified, recorded and excavated or alternatively avoided to the satisfaction of the statutory authorities. In accordance with best practice and legislative requirements this provision would include the production of written reports on the findings, with post-excavation analyses and publications of the results of the works, where appropriate.

Turbine Delivery Routes

As a best practice measure a baseline condition survey will be carried out at Johnstown Bridge (RPS B04-25). This will be undertaken to record baseline data which will be monitored during construction phase.

Indirect effects on setting mitigation

There is no mitigation possible for this potential impact; instead, mitigation by design was actively carried out during the EIAR process. Using a GIS spatial data, the archaeological, architectural and cultural heritage features identified during the baseline study and field survey work were used as a tool by all consultants. Arriving at the final proposed layout was through a series of iterative phases and interaction with all of the technical consultants.

General

Attention is drawn to National Monuments Acts (as amended) which still active, and the Historic and Archaeological Heritage and Miscellaneous Provisions Act (2023) (Appendix 14, Section 14.1), which states that in the event of the discovery of archaeological finds or remains, the Department of Housing, Local Government and Heritage and the National Museum of Ireland should be notified immediately. In such a scenario, the archaeological finds or remains will need to be investigated, and no further development will take place in that area until the finds or remains are resolved in agreement with the relevant authorities.

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

14.8.2 Operational Effects

All physical archaeological, architectural and cultural heritage impact issues will be resolved at the pre-construction stage of the development and therefore there will be no potential impacts at the operation stage of the development. There are no appropriate mitigation measures to remedy the indirect impacts on the setting of features within the wider landscape.

14.8.3 Decommissioning

No mitigation measures will be required during the decommissioning phase. The same level of baseline recording and monitoring of the bridge structures along the access routes will be required.

14.9 Mitigation Measures – Substation Site

14.9.1 Construction Activities

Archaeological monitoring will be conducted during all earthmoving and excavation works associated with the development of the substation and its connection. The monitoring aims to identify any archaeological material uncovered during ground disturbance. In the event of discoveries, the DHLGH and NMI will be notified immediately.

14.9.2 Operational Effects

All physical archaeological, architectural and cultural heritage impact issues will be resolved at the pre-construction stage of the substation site therefore there will be no potential impacts at the operation stage.

14.10 Residual Impacts – Wind Farm Site

Residual impacts are the degree of environmental change that will occur after the proposed mitigation measures have taken effect. No residual impacts are envisaged as all archaeological and cultural heritage issues will be resolved at the pre-construction and construction stages of the development.

It must be acknowledged however, the effects on the setting of some heritage assets will remain for the lifetime of the wind farm (as indicated in Table 14.13).

It is considered however that setting impacts are of no more than a slight magnitude on the above cultural heritage assets which would result in residual impacts for the lifetime of the Proposed Wind Farm.

14.11 Residual Impacts – Substation Site

No residual impacts are anticipated at the substation site, as all archaeological and cultural heritage considerations will be fully addressed during the pre-construction and construction phases of the Proposed Substation.

14.12 Conclusion

The modern landscape of north County Kildare is the result of processes of change and modifications over the millennia.

The proposed development is situated within a predominantly low-lying agricultural landscape interspersed with a vast central area of cutover bogland. While this landscape has undergone significant transformation, it remains a valuable repository of historical and archaeological sites or monuments, both above and below ground which span approximately 6,000 years of human settlement and activity. The earliest of sites being almost exclusively found within the bogs.

The expansion and development of transport networks in the form of eighteenth-century canal and nineteenth century rail links to modern motorways and link roads lead to the initial increase in dispersed settlement patterns in the landscape that may have otherwise not been accessible.

The receiving cultural heritage landscape that surrounds the proposed development has been particularly altered over time through the exploitation of the Bog of Allen since the 1950's. The general character is represented by modern activity such as the industrialised peat extraction of the large bogs of Timahoe. The associated village and roadside settlements for the Bord na Mona workers grew up around the bog. Afforestation along the accessible edges of the bogs is now a new feature in the landscape. There are also several electricity transmission lines which run through the northeastern part of the study area lands and new solar farms on the eastern side of Timahoe Bog.

This dynamic landscape has consistently adapted to reflect changing patterns of resource use and settlement, demonstrating both continuity and transformation. The introduction of the proposed development will represent a further evolution, altering the visual character of the landscape for its operational lifespan. However, this development aligns with the region's longstanding tradition of energy production, and the historic features within the area will remain intact and legible within the landscape.

Given the existing nature of the landscape and its archaeological features, the location of the proposed development is considered suitable for accommodating this development from a cultural heritage perspective.

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