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10 Archaeology, Architectural and Cultural Heritage

10.1 Introduction

This chapter describes the likely effects on archaeological, architectural and cultural heritage from the proposed development, during the construction, operational and decommissioning phases. Mitigation measures are also detailed that avoid or minimise adverse effects, where required.

This report was compiled based on a desktop study and field inspection. The purpose of the report is to report on the potential significant effects of the proposed development on archaeological, architectural and cultural heritage including known and potential archaeological sites and architectural remains within the development zone. This information is used to preserve *in situ* by avoidance or to facilitate preservation by record as required.

This chapter has been prepared by Rose Cleary of University College Cork. A description of the author's qualifications and experience is presented in **Appendix 1.1**. The potential for effects has been identified under the following headings:

- Archaeology
- Architectural Heritage, including Protected Structures
- Underwater Archaeology.

In addition, the potential for effects on social cultural assets has been addressed with regard to the stated objectives of Wexford County Development Plan 2013-2019.

10.2 Description of the Proposed Development

Greenlink comprises an onshore element in Ireland, an offshore (subsea) element, and an onshore element in Wales. The proposed development, for the purposes of this assessment is the components of the project which are onshore in Ireland.

A detailed description of the project and the proposed development is provided in **Chapter 3** of this EIAR *Proposed Development*.

In summary, the proposed development (encompassing the onshore elements in Ireland only) will comprise of the following:

The proposed development (encompassing the onshore elements in Ireland only) will comprise:

- **Landfall Compound** - a temporary landfall compound at Baginbun, where the high voltage direct current (HVDC) cable will be installed underground, below the beach and cliff at Baginbun Beach, by horizontal directional drilling (HDD);

- **HVDC Cables** - two HVDC electricity cables with a nominal capacity of 500 megawatts (MW), installed underground from the landfall at Baginbun to the converter station, including jointing bays and ground level marker posts at intervals along the route;
- **Converter Station** - a converter station situated close to the existing Eirgrid 220kV Great Island substation in Wexford;
- **Tail Station** - a 220kV Loughtown substation located beside the converter station. The Loughtown tail station connects the HVAC 220kV cable into the 220kV grid via the existing Eirgrid Great Island substation;
- **MV Substation** - an ESB MV substation will be located outside the converter station and tail station perimeter fences but within the landholding. This substation will provide the MV and LV connections required for the development;
- **Converter Station Construction Compound** - temporary compound for the construction of the converter station and tail station at Great Island;
- **Cable Contractor Compounds** - three temporary cable contractor compounds will be required (i) at the landfall site close to Baginbun Beach (ii) at the proposed converter station and (iii) one along the onshore route in the townland of Lewistown;
- **HDD Compounds** - temporary HDD contractor compounds are required. One will be located close to the cable contractor compound at Baginbun Beach with another HDD compound located at either side of the Campile River Estuary crossing;
- **High Voltage Alternating Current (HVAC) Cables** - one 220 kV HVAC electricity cable circuit consisting of three cables, installed underground connecting the converter station via the Loughtown tail station to the existing EirGrid Great Island substation;
- **Fibre Optic Cables** - fibre optic cables for operation and control purposes, laid underground with the HVDC and HVAC cables;
- **Community Gain Roadside Car Parking near Baginbun Beach** - in consultation with Wexford County Council, circa 54 roadside car parking spaces will be constructed; and
- **Community Gain in Ramsgrange Village** - in consultation with Wexford County Council, extension to existing footpaths, four new streetlights and a speed activated sign at Ramsgrange.

The proposed development will traverse the Campile River Estuary. It is proposed that the cable crossing will be drilled under the river bed, with no effect on the river or river banks. Launch and reception pits for the drilling operations will be located outside the curtilage of the river banks.

The underground cables will cross the Kilmannock Stream (also known as the Newtown River) via either an open cut or mini-HDD method. The open cut method has more potential to have an impact on archaeological or cultural heritage features. The river is approximately four metres wide and is a small, sluggish stream which is canalised and culverted further upstream.

10.3 Assessment Methodology

10.3.1 General

Cultural heritage includes visible archaeological monuments and sub-surface archaeological remains. The monuments and sub-surface sites are the remains of past human interaction with the landscape. Knowledge of these sites is achieved by survey and excavation and by comparison with similar sites within the archaeological record. The architectural record, both upstanding and levelled is included in cultural heritage and includes structures, the curtilage and setting context of structures, groups of structures and buildings and places of historic, archaeological, artistic, cultural, scientific, social or technical interest.

Requirements for the compilation of Archaeological, Architectural and Cultural Heritage Assessments include EU Directives and Planning and Development Acts¹.

This report was compiled using a desk-top study and field inspection. The archaeological component of this report is guided by the *National Monuments Acts and Amendments 1930-2004*, the *Local Government Planning and Development Act (2000)*, *Frameworks and Principles for the Protection of the Archaeological Heritage* (DAHGI, 1999) and *Policy and Guidelines on Archaeological Excavations* (DAHGI, 1999).

Architectural Heritage is protected by the *Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act (1999)*. National policies are outlined in the *Architectural Heritage Protection Guidelines for Planning Authorities* (DoEHLG, 2004) and the *Action of Architecture 2002-2005 Government Policy on Architecture*. These guidelines inform this assessment.

- The desk-top study included a review of the available Ordnance Survey maps, the Sites and Monuments Record (SMR), the Record of Monuments and Places (RMP) (see **Appendix 10.2** for more details), published inventory of archaeological sites for County Wexford (Moore, 1996) and the available archaeological and historical literature for the area.
- Site inspections were carried out in June 2018 and late winter 2018/January 2019. Site inspections were along the route of the proposed electricity cable from Baginbun on the south east of the Hook Peninsula to Great Island to the north west. Most of the route is along existing roads. Greenfield sites were walked to determine if there were any indications of potential archaeological sites. Farming practices on the Hook Peninsula include tillage and most of the greenfield areas had been tilled, either recently or in the past. Tillage causes some denudation of low-visibility archaeological sites and may make the detection of archaeological remains difficult. Field-walking was carried out when grass-cover was low during very dry

¹ EU Directive 85/337/EEC [Amending Directives 97/11/EC, 2003/35/EC; 2009/31/EC; 2011/92/EU; 2014/52/EU]; Planning and Development Act 2000 as amended and Planning and Development Regulations 2001 as amended.

conditions in June 2018 and in late winter of 2018/January 2019. These were suitable conditions for the field walks.

- The proximity of known archaeological sites, architectural sites and sites of potential historic value within the development route was evaluated. While there is no mandatory exclusion zone, the National Monuments Service recommends a 20m buffer zone from such sites. This buffer zone can however vary and is dependent on the nature and type of site.

10.3.2 Desk-top Study

The desk-top study provides an over-arching review of the archaeological, architectural and cultural heritage of the landscape within the proposed development zone. This is informed by the following records:

- *Archaeological Inventory of Co. Wexford* (Moore, 1996). This provides a written synthesis of all known archaeological sites in County Wexford. The SMR and RMP for Co. Wexford were also consulted and are a pre-publication (Moore, 1996) listing of all archaeological sites.
- Sites and Monuments Database (www.archaeology.ie) is an updated record and includes sites not included in the published inventory (Moore, 1996).
- Lists of Monuments in State Ownership which will require Ministerial Consent to carry out works in the vicinity of the monument.
- Lists of Monuments subject to preservation orders.
- Register of Historic Monuments. The National Monuments Act (Amendment 2005) requires two-months written notice to the Minister (Culture, Heritage and the Gaeltacht) in advance of proposed works in relation to a registered archaeological or historic site listed in the register.
- National Inventory of Architectural Heritage (NIAH) of County Wexford. This includes building surveys and historic garden surveys of sites dating from 1700 AD to the modern period.
- County Development Plan for County Wexford. This includes the Record of Protected Structures and architectural conservation areas.
- Database of Irish Archaeological Excavation Reports (www.excavations.ie). This provides extra information on potential archaeological finds which may occur during on-site groundworks and guides the mitigation strategies.
- Aerial Photographs (provided by Arup).
- Ordnance Survey Ireland mapping (1:50000 [Discovery Series]; OSI 1:5000 (rural series); OSI 6" scale [first and second editions]; OSI 25" scale).
- Published literature on the historic landscape of the area. The primary sources are *The Hook Peninsula, Co. Wexford* (Colfer, 2004) and *The promontory of Hook* (Colfer, 1998).

Mark Keegan, Infrastructural Projects Liaison Archaeologist, National Monuments Service, was also consulted.

10.3.3 Field Assessment

This component examined the landscape to assess the potential effect on the known archaeological and cultural heritage. This was guided by the desk-top study.

The field assessment examined the upstanding heritage along the proposed development and determined the proximity of known monuments to the proposed route. This guides the methodology of construction in relation to the heritage component.

10.4 Baseline Environment

The proposed development is located on the south-western tip of County Wexford on the east side of Waterford Harbour. The area was easily accessible by sea from early antiquity and this is reflected in the region's cultural heritage. The extensive maritime connections of the area influenced the development of the region and this is reflected in the visible monuments, particularly from the medieval period onwards.

The landscape is low-lying where soil formation was over sedimentary rock including limestone, shale, sandstone and mudstone. Soil was formed from glacial drift and remnants of ice-age activity can be seen in glacial granite erratics transported from the Blackstairs Mountains of north County Wexford and County Carlow and raised beaches. The modern landscape is rural, and farming is largely a mix of pasture and tillage. Natural drainage comprises the Owenduff River in the north-east, the Tintern, Taulaght and Poulfur streams which empty into Bannow Bay and the Campile and Duncannon streams which flow into the Waterford Estuary. The cables will cross under the Campile River Estuary and will not have an effect on the river. **Figure 10.10** shows the cable route at the Campile River estuary.

10.4.1 Archaeological Landscape

10.4.1.1 Mesolithic

Hunter-gatherer communities or Mesolithic people reached Ireland around 8000 BC (Woodman, 2015, 119). Similar stone tools to those found on British Mesolithic sites suggest these colonists probably travelled by boat to the island of Ireland from Britain (Woodman, 2015, 185). Early Mesolithic sites in Ireland are frequently found in coastal areas or further inland along river valleys. These hunter-gatherer peoples were transient and have left little trace on the landscape. Most Mesolithic sites are found accidentally, often by field archaeologists who recover Mesolithic stone tools from ploughed fields. The recovery of artefacts and identification of sites is usually where farmland is ploughed or in areas where developments include a topsoil strip. Most of the known Mesolithic material has been found on archaeological excavations.

The Mesolithic cultural phase of archaeology is divided into two periods - early (c. 8000-6500 BC) and late (6500-4000 BC) based on the type of tools and the technology of production.

Diagnostic early Mesolithic tools are small struck stones, known as ‘microliths’ which were composite implements used as projectiles for hunting, and cutting tools for butchering, preparing hides and wood working. From about 6500 BC tools were made from larger flakes and in the final stages of the later Mesolithic, tools known as ‘Bann Flakes’ or butt-trimmed, leaf-shaped points were characteristic (Woodman, 2015, 141; 231-232; Woodman *et al*, 2006, 61). Ground stone axe-heads were also part of the Mesolithic tool-kit and the raw material was mostly opportunistically sourced and manufactured from suitable pebbles. The axe-heads were probably used as weapons and for woodworking.

There is little evidence of Mesolithic activity within the development area. A luminescence date of c. 6900 BP (c. 5000 BC i.e. in the late Mesolithic) was recorded on a raised beach near Hook Lighthouse (Infra Ó Drisceoil: Churchtown). There were no indications of human activity of Mesolithic date on the beach. In the wider area, a survey of the Waterford harbour area of Ballylough, which is just across Waterford Harbour from the north end of the development area, uncovered evidence of Mesolithic communities from detailed field examination of ploughed fields (Zvelebil *et al*, 1987). There is also a strong possibility that Mesolithic communities exploited the Hook Peninsula and evidence of these early inhabitants may be uncovered when ground is disturbed during construction phases.

10.4.1.2 Neolithic

The onset of agriculture and the arrival of arable and pastoral farming in Ireland was marked by landscape changes including a decline in tree cover. Woodland and scrub vegetation clearance was essential for the creation of fields for crop cultivation and pastureland. These environmental changes were marked by a decline in tree pollen and a rise in grass and weed pollen. Radiocarbon dating shows that the Irish Neolithic began just after 4000 BC and continued until the advent of the knowledge of copper working around 2500 BC.

The Neolithic period can be divided into an early Neolithic phase of c. 4000-3750 BC, middle Neolithic 3750-3000 BC and late Neolithic 3000-2500 BC. The earlier part (4000-3750 BC) may have been some initial colonists whose first settlements are difficult to detect in the archaeological record. The livelihood of these first farmers was based on stock-husbandry and crop cultivation. As Ireland had a very limited native fauna, large animals such as cattle, sheep/goat and pigs were introduced onto the island. Seed corn for wheat and barley was also brought in as well as new technology for the production of pottery in which to cook the cereals and for the production of new flint and chert tools and weapons. Cereal cultivation in the period 3750-3600 BC was primarily wheat and to a lesser extent barley (McClatchie *et al* 2015).

An estimate of the number of Neolithic houses excavated in Ireland is about 90 buildings from 54 sites and the majority of these had no surface remains and were detected only when topsoil was stripped (Smyth, 2014, 21). A radiocarbon dating programme on Irish early Neolithic houses indicated construction began about 3715-3650 BC and ended around 3690-3625 BC (McSparron, 2008; Smyth, 2014, 48). Neolithic houses excavated in Co. Wexford were exposed during road schemes; one Neolithic house was uncovered at Ryleen and excavated by James Hession (E004116).

Further east, houses was excavated by Derek Gallagher on the M11 at Dunsinane (E004325) and Ballycourcy More (E004268) and confirm Neolithic settlement in the county.

Evidence of Neolithic activity by way of isolated pits was also recorded by Ger Dowling at Mountelliot, New Ross (18E0017) and Edel Ruttle (E004564) at Ballycourcy on the M11.

The most visible element of Neolithic people are surviving megalithic tombs. These were places of burial but also of communal assembly. There are seven recorded megalithic tombs in County Wexford and of these, two survive relatively intact while the remaining sites were recorded by the Ordnance Survey (Moore, 1996). A portal tomb at Ballybrittas is north-east of Adamstown and a considerable distance from the development area. A second extant portal tomb is south-east of Adamstown and also some distance from the development area. The remaining sites of megalithic tombs are in north County Wexford with the exception of one which is in Carnsore.

Stray finds of polished stone axe-heads and struck flint are also indicative of Neolithic activity. A stone tool assemblage recovered from Great Island during gas pipeline construction included late Neolithic struck flakes and a hammer stone (Sternke, 2012). A barbed and tanged arrowhead of late Neolithic date was found near the Hook lighthouse in 1990 and is indicative of Beaker cultures in the region (Colfer 2004, Fig. 2).

10.4.1.3 Bronze Age

The Bronze Age began in Ireland about 2100 BC and continued until the introduction of iron sometime around 800-700 BC. Bronze production which is an alloy of tin with copper became the norm in the manufacture of tools and weapons which were stronger than copper and easily cast in moulds. Bronze artefacts became the currency of wealth and were used in exchange systems and undoubtedly as part of a display of social status. The production of weaponry also reflected a society that became increasingly territorial and the evolution of a hierarchical society and warrior class. Metal use became more common as the Bronze Age progressed and technological changes resulted in more diverse and better-produced tools and weapons. This was also a time when metal objects were probably made by specialist craftsmen.

The Bronze Age also heralded changes in society which were reflected in new burial practices and monument types. Most burials were unmarked at surface level and frequently in stone-lined cist graves or some were unprotected in pit graves. From about 1900 BC the dead were cremated and placed in cinerary urns. Simple ditched enclosures (ring-ditches and ring-barrows) were also part of funeral customs. Bronze Age urn burials are recorded from Ballyvelig townland (Colfer, 2004, 21) and an earthwork in Loftushall townland (RMP WX 049-15-001) is interpreted as a possible barrow. An excavation at Great Island produced a small assemblage of ten sherds from three Early Bronze Age vase urns dating to c. 2000-1750 BC (Roche and Grogan, 2012). Other Bronze Age sites in the region are fulachtaí fia or ancient cooking places recorded at Ballyvelig (RMP WX 039-038-001 & 2), Dunbrody (RMP WX 039-063; 064), Grange (RMP WX 039-039; 044-034 & 035), Ballynamona (RMP WX 039-022) and

Battlestown (Stout 1987). A fulacht fia was also excavated by Aishling Mulcahy (12E0392) at Great Island during gas pipeline construction.

10.4.1.4 Iron Age

The Irish Iron Age probably began around 800/700 BC and lasted until about 400 AD when there was some contact with the Roman world and into the beginning of the early medieval period. The introduction of iron-working technology overlapped with the late Bronze Age and the new knowledge and skills were possibly quickly adopted by smiths competent in bronze working. The stimulus for these changes was contact with the Celtic world on the Continent and in Britain. The most likely influences may have come via contact between those on the island of Ireland with Celtic speaking peoples in Britain and Continental Europe. These ‘Celts’ perhaps spoke a common language but were also diverse in many aspects of their economic, social and political structures. Insights into the world of the ‘Celts’ have been provided Greek and Roman writers. A map compiled by the Greek geographer Ptolemy in the second century AD identified the River Birgos (Barrow) and the territory to the east (Wexford County) as that of the Brigantes. Coastal promontory forts may belong to the Iron Age although few have been archaeologically investigated. Three coastal promontory forts are located in the Hook area. The Nook promontory fort (RMP WX 044-002/02) is north of Ballyhack and outside the development zone. The promontory fort at Booley (RMP 049-029) on Black Point between Dollar Bay and Booley Bay is west of the proposed cable trench. A coastal fort at Templetown (RMP WX 049-009) is west of the proposed cable trench and on Templetown Bay. The fort at Ramstown (RMP WX 050-015) known as Dundonnell is at Baginbun Point and within a complex of archaeological sites including Anglo-Norman earthworks and a Martello Tower. A coastal promontory fort is identified at Duncannon on the placename evidence² as an Iron Age fort (Colfer, 2004, 22) although not listed as such in the archaeological inventory of County Wexford (Moore, 1996) where only the late sixteenth century remains of a star-shaped fort are described.

10.4.1.5 Early Medieval

The historical details of the early medieval period (from circa the fifth century) record the Brigantes tribe in the area in the second century AD. These, with the Síl Brain, were minor kingdoms in the south-west tip of County Wexford. Settlement in the early medieval period is typically within ringforts which are the most widespread archaeological field monument in Ireland. They are usually known by the names rath or lios and are circular or sub-circular areas enclosed by single or multiple earthen banks formed from material thrown up from an external concentric fosse (ditch). Variations on the enclosing element include stone-faced banks or stone walls (caher). Although comparatively few ringforts have been excavated, it is accepted that they have a long period of use with a floruit from about 500-900 AD and some may have been re-occupied in the medieval and post-medieval period. Ringforts can be considered as enclosed farmsteads of strong farmers, affording the inhabitants some protection as well as status.

² The Celtic name of Conan’s Fort is identified as evidence of Iron Age fortifications.

Most of the ringforts in the development area have been levelled and of 45 known sites, only thirteen survive above ground (Colfer, 2004, 25).

Levelled earthworks at Kilhile (RMP WX 044-005), Lewistown (RMP WX 049-002-1 & 2) and possibly Kilcloggan (RMP WX 049-003) may have been ringforts.

The most visible presence of early Christianity in the development area are church sites. Kilmokea (RMP WX 039-018-002) is an early ecclesiastical site built on what was originally an island (Great Island) but subsequently joined to the mainland by late nineteenth century reclamation. The site is large and an earthen bank and fosse encloses seven hectares. Part of the fosse was recorded during gas pipeline construction in 2013³. A graveyard, two bullaun stones, an Early Christian cross-base and a font are recorded at Kilmokea (Moore, 1997, 117). A horizontal water-powered mill (RMP WX 039-018-003) was discovered in 1970 at the head of a stream in the centre of the enclosure. Little is known of the early activity on the site but it continued in use until at least the fourteenth century when the ‘chapel of St. Macethe di Island’ is recorded (Colfer, 2004, 25). Other churches on the Hook Peninsula are outside the development area and one located to the east at Portergate (WX 054-003) is Brecaun Church. Fragments of an ogham stone recovered from Brecaun’s Church confirm an early date of fifth/sixth centuries (Breen, 1988). A church to the south in Churchtown (RMP WX 054-009) is dedicated to St. Dubhan. The chaplains of St. Saviour of Rindeaun (Churchtown) were tasked with the maintenance of Hook Lighthouse (RMP WX 054-010) which was built c. 1245 (Moore, 1997, 164). A medieval parish church was later built at Churchtown (RMP WX 054-009) which has some early features including antae, albeit the main structure is fourteenth century in date as indicated by ogee-headed windows. The church at Kilcloggan (RMP WX 049-020) recorded as ‘Parochial Hall’ is now in ruins. The placename evidence, however, suggests an early foundation. The church site may be associated with the fifth-century saint Alloc and a Holy Well known as ‘Toberluke’ is probably a corruption of Tobar Alloc (Alloc’s Well) (Colfer, 2004, 27).

10.4.1.6 Viking-Age (from circa the ninth century)

A Viking town developed across Waterford Harbour in what is now Waterford City and it is likely Viking seafarers also exploited the Hook Peninsula. A Viking presence is suggested by placename evidence such as Skeroirke (Ballyhack), Selskar Rock and Keeragh (Colfer, 2004, 30-31). A Viking-Age silver hoard was recovered from the site of Dunbrody Abbey (Graham-Campbell, 1976).

10.4.1.7 High Medieval (from circa the ninth century)

The remains of high medieval settlement are the most visible within the study area and include the monastic site at Dunbrody (RMP WX 039-030), Templetown Church (RMP WX 049-008) and Kilcloggan Castle (RMP WX 049-004). Other settlement evidence has been effaced from the landscape and remains only as sites of former buildings that were recorded on Ordnance Survey mapping. These include Great Island Castles (RMP WX 039-028-002 & 003), Ringwork (RMP

³ Bruce Sutton unpublished report.

WX 039-028-001), Leper Hospital (RMP WX 039-028-005) and a moated site (RMP WX 039-019).

The catalyst for these major landscape changes in the medieval period was the arrival of Anglo-Norman invaders at Bannow Island and Baginbun Beach in 1169-70 and the rapid spread of the invading army across the country. The Anglo-Norman invasion began a process which was to change the political and social fabric of Ireland. The invading army made piecemeal progress across the country, forging alliances with Gaelic chiefs and defeating others. The goal was land and with it, wealth. For the first ten years there was a period of consolidation of territorial gains and the construction of motte-and-baileys, ringworks and other earthen defences. An existing Iron Age Promontory Fort (Dún Domhnaill; RMP WX 050-015-001) on the headland at Baginbun possibly afforded some initial protection for the invading army under Raymond le Gros (Strongbow). New defensive earthworks (RMP WX 050-015-002) were constructed across the headland and comprised a double earthen bank probably with a wooden palisade along the top. Earthworks in the area known as 'Strongbow's Tent' (RMP WX 050-015-005) and further east, a site recorded as 'Strongbow's Cap [Camp?]' (RMP WX 050-015-003) also indicate fortification and encampment. The Anglo-Norman army was attacked by the Hiberno-Norse of Waterford and the site of this may be a battlefield (RMP WX 0550-015-006) east of the earthworks on Baginbun Head. Seventy Hiberno-Norse were captured and killed by breaking their legs and throwing them off the cliff (Colfer, 2004, 33).

The principal Anglo-Norman land-grantee within the proposed development area was Herve de Montmorency who in turn granted large tracts of lands to the Cistercian order for the foundation of the abbey at Dunbrody with landholdings on the eastern shore of Waterford Harbour extending from Great Island south towards Duncannon. The lands further south and extending to the tip of the Hook Peninsula were granted by King Henry II to the Knights Templars in 1172.

Dunbrody is a complex of archaeological monuments. The main upstanding site is the Cistercian monastery known as 'Port of St. Mary' and founded as a daughter-house of Dublin in 1182 when building work began and a new monastery was consecrated in 1201. Cistercian monks who were a contemplative order and followed the rule of St. Benedict had farming interests with extensive granges. Field systems (RMP WX 039-089) c. 200m from the abbey and a tidal mill (RMP WX 039-060) on the Campile River are remnants of monastic farming enterprises. The upstanding abbey complex (RMP WX 039-030-001) is located on a low spur above the Campile River estuary. The church remains are a nave and chancel with transepts with ornamental Dundry stone on the window and door surrounds and as quoin-stones. An effigial tomb (RMP WX 039-030-003) in the chancel wall is reputed to be that of Herve de Montmorency. A tower was added at the nave and chancel crossing in the fifteenth century. The cloister to the south of the nave surrounds a central garth or garden and extant building remains include the Sacristy, Refectory and Kitchen, Chapter Room, Lavabo and Dormitories. A graveyard (RMP WX 039-029-003) is 120m to the south of the abbey and the west wall of the lay chapel or parish church of Dunbrody abbey forms part of the graveyard enclosure. The parish church (RMP WX 039-029-002) served the laymen of the estate and the remains are an east/west aligned, gable-ended church.

A gatehouse (RMP WX 039-029-001) near the west wall of the parish church was partly incorporated into the church wall.

A large estate house (RMP WX 031-001) was built by John Itchingham whose family was granted Dunbrody estate after the dissolution of the monasteries in 1554.

The primary house probably dates to the 1630-40s and there were further building phases in the early 1800s. The original house was gabled and surrounded a small court or yard in a U-shaped plan. The house had an enclosing bawn wall (RMP WX 031-002) with circular towers on the NW and SW angles.

The second major land-holder on the Hook Peninsula were the Knights Templars who held the Manor of Kilcloggan. The Templars occupied Kilcloggan Manor before the end of the twelfth century and the lands passed to the Knights Hospitallers in the fourteenth century (Colfer, 2004, 48-49). The remains of a fortified parish church (RMP WX 049-008) in Templetown are adjacent to a road which may be used as part of the construction phase of the proposed development. A tower was added to the original church by the Knights Hospitallers. The original church was to the south of the tower and a new Church of Ireland church was built to the north in the 1830s (Colfer, 2004, Fig. 48). The nineteenth century church is set within a rectangular graveyard (RMP WX 049-008-002) and a bullaun stone (RMP WX 049-008-003) is incorporated into a stile. Colfer (2004, 59) suggested that there may have been an associated medieval village on Kilcloggan manor around the modern Templetown Cross (ibid., Fig. 45). This site is delisted in the archaeological survey of Co. Wexford (RMP mapping). Another Anglo-Norman fortification in Templetown is the site of a ringwork castle (RMP WX 049-007) north of the church (Moore, 1996, 89) and a local placename suggests an early castle erected by the Templars (Colfer, 2004, 55).

Early fortifications from the initial Anglo-Norman invasion period in the study area include a ringwork (RMP WX 039-028) and a moated site (RMP WX 039-019) in Great Island. There is some historical information that suggests that two castles (RMP WX 039-028-002 and 003) existed in Great Island although there are now no above ground remains (Moore, 1996). These were located within an earthen enclosure or ringwork (RMP WX 039-028-001) which may have been erected by Hervey de Montmorency (Moore, 1996, 93). A leper hospital (RMP WX 039-028-005) is recorded on Great Island and Ordnance Survey mapping located the site on top of a ridge above the existing road (Moore, 1996). Two adult burials were uncovered in a sarcophagus near the site in 1979 (Cahill, 2011, 432-434). A large Anglo-Norman defended farmstead or moated site (RMP WX 039-019) is also recorded on Great Island.

Kilcloggan Castle (RMP WX 049-004) which is set back from the proposed development route is a tower house of fifteenth century date. The castle is said to have been part of the Knights Hospitallers estate and the present building may have replaced an earlier structure.

10.4.2 Interaction between the Proposed Development and the Archaeological Landscape

Four complexes of archaeological sites are close to the proposed development:

- A. Baginbun (Ramstown) Anglo-Norman Invasion landing and earthworks RMP WX 050-015-001 & 2; battle site RMP 050-015-006; Strongbow's Cap [camp?] 050-015-003; Strongbow's tent [hut site] 050-015-005; coastal promontory fort 050-015-001 and inscribed stone (050-015-004). A Martello tower (architectural inventory reg. 15705009) is also located on the promontory fort.
- B. Templetown - possible deserted medieval village RMP WX 049-020.
- C. Kilcloggan Castle - archaeological constraint zone.
- D. Dunbrody Cistercian Abbey RMP WX 039-030; Church and graveyard RMP WX 039-029-001; 002; Castle (Jacobean House) 036-031.

These sites are addressed in further detail below.

10.4.2.1 Baginbun Beach

The proposed development construction works include a landfall site close to Baginbun which will comprise an on-shore drilling compound and thereafter a cable trench inland (away from the beach). The cable route (**Figure 10.1**) will cross a greenfield site (**Figure 10.2**) and thereafter traverse the existing road network to the north and continue westwards along the road.

The route here is close to the site of the first Anglo-Norman invasion of 1169 and the site of earthwork (RMP 050-015-001 & 2) constructed at that time or after the second invasion of 1170 (**Figures 10.3** and **10.4**). There is also a battlefield site (RMP 050-015-006) in the environs of the earthworks. There is a preservation order on the earthworks. Strongbow's camp (RMP 050-015-003) to the south-west and Strongbow's tent (RMP 050-015-005) to the south-east may have some connection to the Anglo-Norman invasion. These sites (earthworks, battle site) are located on a promontory and are over 70m to the south of the proposed landfall site at Baginbun Beach. An inscribed stone (RMP 050-015-004) was located on the north site of the proposed cable landfall and receptor pit but was moved in the 1980s. The inscription on the stone is in Latin reads 'Margit' which may be of some antiquity. St. Margaret is one of the saints associated with Anglo-Norman churches.



Figure 10.1: Extent of Proposed Works close to Baginbun Beach | not to scale
[Ordnance Survey Ireland Licence No. EN 0002820]



Figure 10.2: Greenfield site of Landfall Drilling Compound at Baginbun (looking east)



Figure 10.3: Extract from Record of Monuments and Places Sheet No. 50 Wexford; Sites 015-001 and 2 BAGINBUN (Ramstown) | not to scale

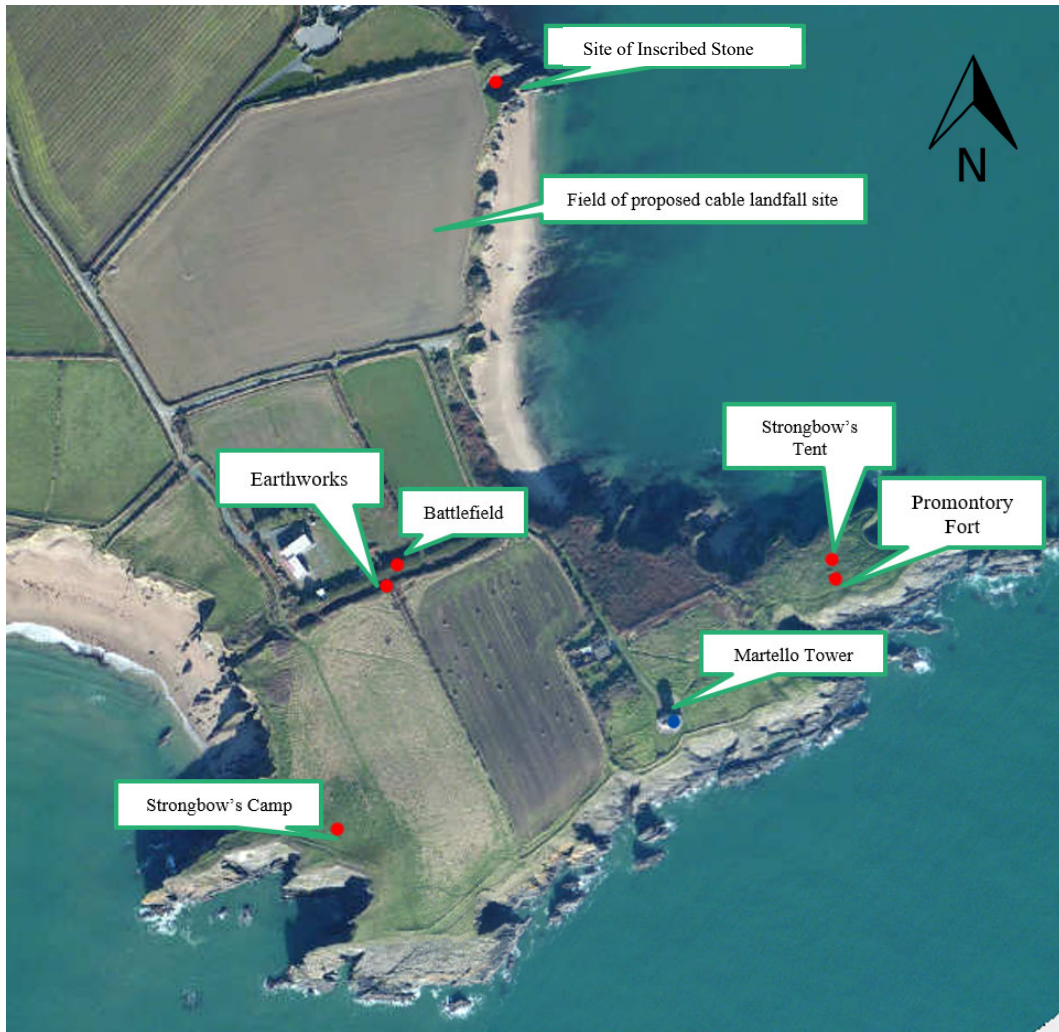


Figure 10.4: Baginbun Beach (Anglo-Norman Earthworks and Battle Site) (mapping source: Bing Maps © Microsoft 2020 | not to scale)

10.4.2.2|Templetown

A fortified parish church (RMP WX 049-008) (**Figure 10.5**) and associated rectangular graveyard (RMP WX 049-008-002) in Templetown is to the south of the proposed cable route. The area may also be the location of an early castle site built by the Knights Templars with modifications to the church by the Knights Hospitallers. The area was clearly a settlement focus in the fourteenth century. A delisted site (**Figures 10.6 and 10.7**) along the route to Baginbun beach may be the remains of a deserted medieval village [DMV] (Colfer 2004, 59) and this area is scheduled for archaeological monitoring of the construction activities.



Figure 10.5: Fourteenth-century Tower (RMP-WX-049-008) at Templetown

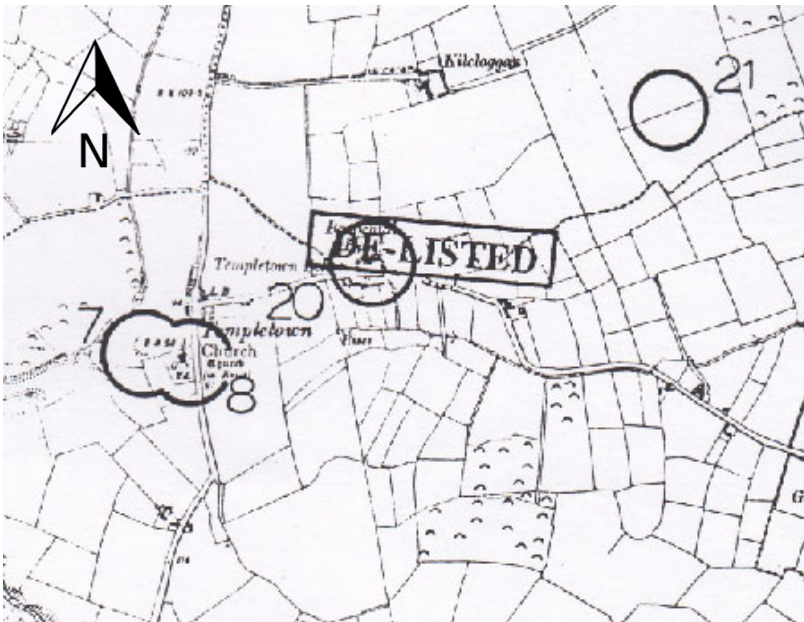


Figure 10.6: RMP Map Extract Sheet No. 49: TEMPLETOWN adjacent to possible deserted medieval village (Delisted Monument RMP WX 049-020) | not to scale

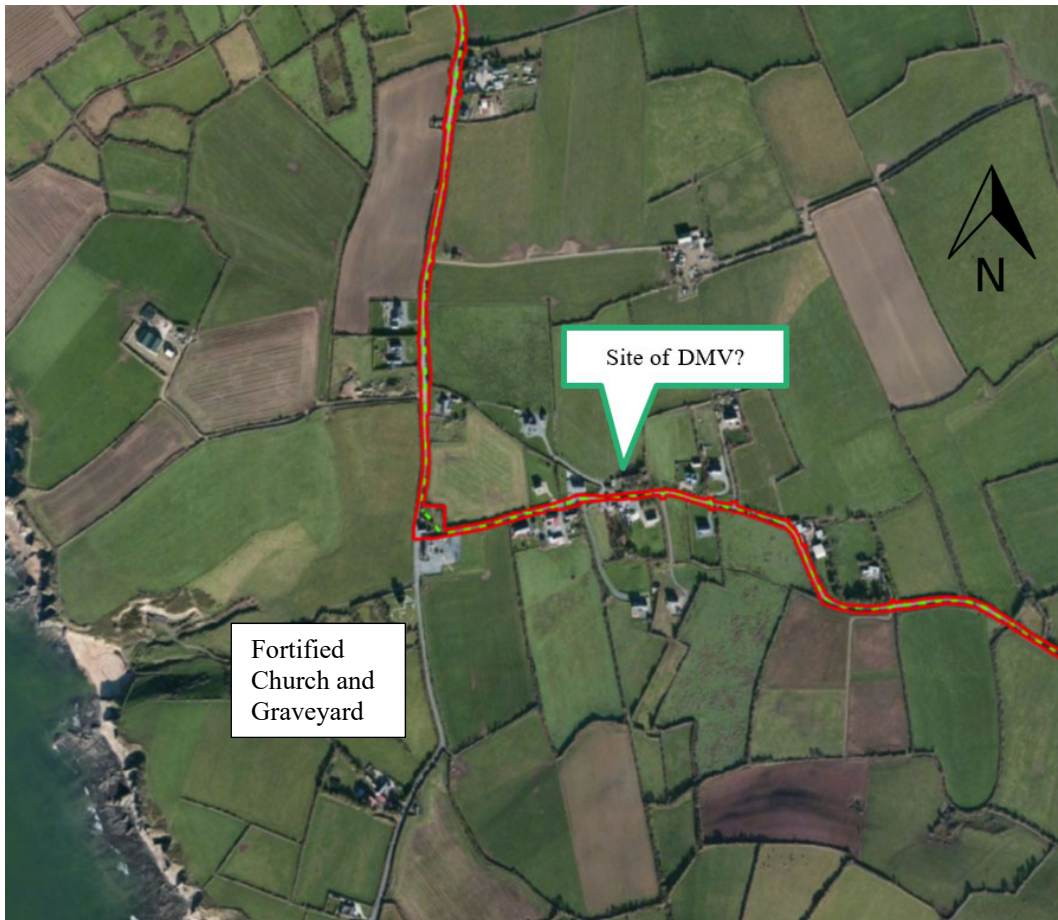


Figure 10.7: Templetown - Possible Site of a Deserted Medieval Village (DMV) | cable route to the south (mapping source: Bing Maps © Microsoft 2019 | not to scale)

10.4.2.3 Kilcloggan

Kilcloggan Castle (RMP WX 049-004) is set back to the east from the proposed development route (Figure 10.8) and is a fifteenth century tower house. The castle is said to have been part of the Knights Hospitallers estate and the present building may have replaced an earlier structure. The proposed cable route is along the road to the west of the castle. The archaeological constraint zone surrounding the castle extends to the road (Figure 10.9).



Figure 10.8: Kilcloggan Castle (RMP WX-049-004) and Archaeological Constraint Zone (foreground)

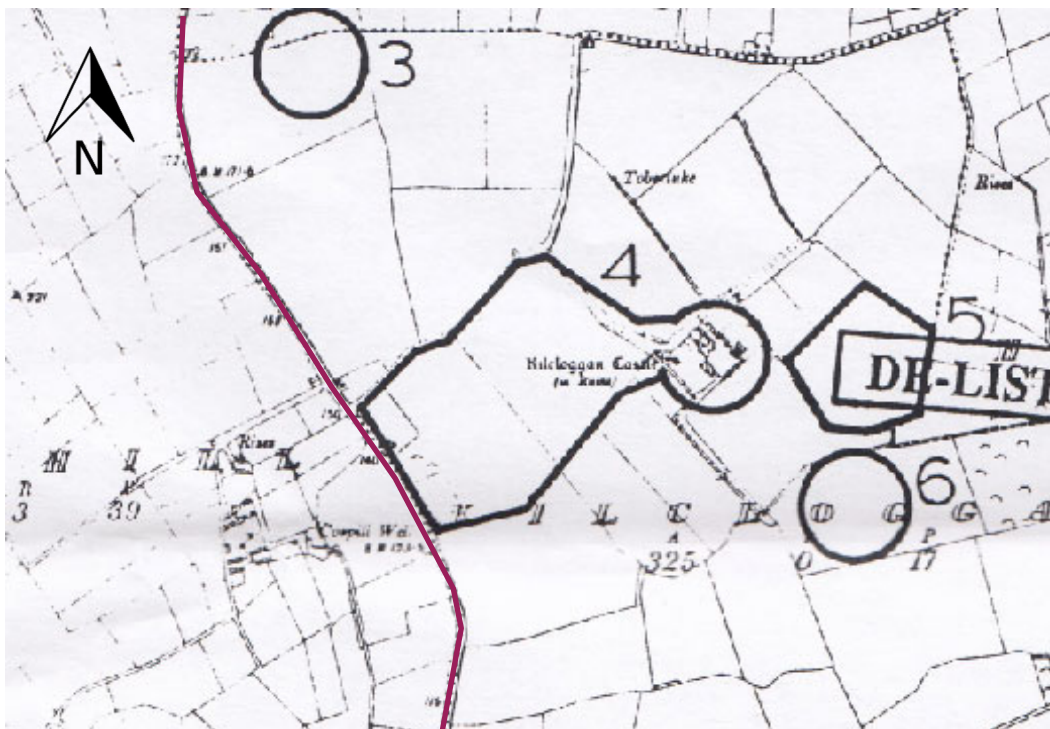


Figure 10.9: RMP Map Extract Sheet No. 49: Kilcloggan Castle and archaeological constraint zone (cable route shown in red)

10.4.2.4 Dunbrody

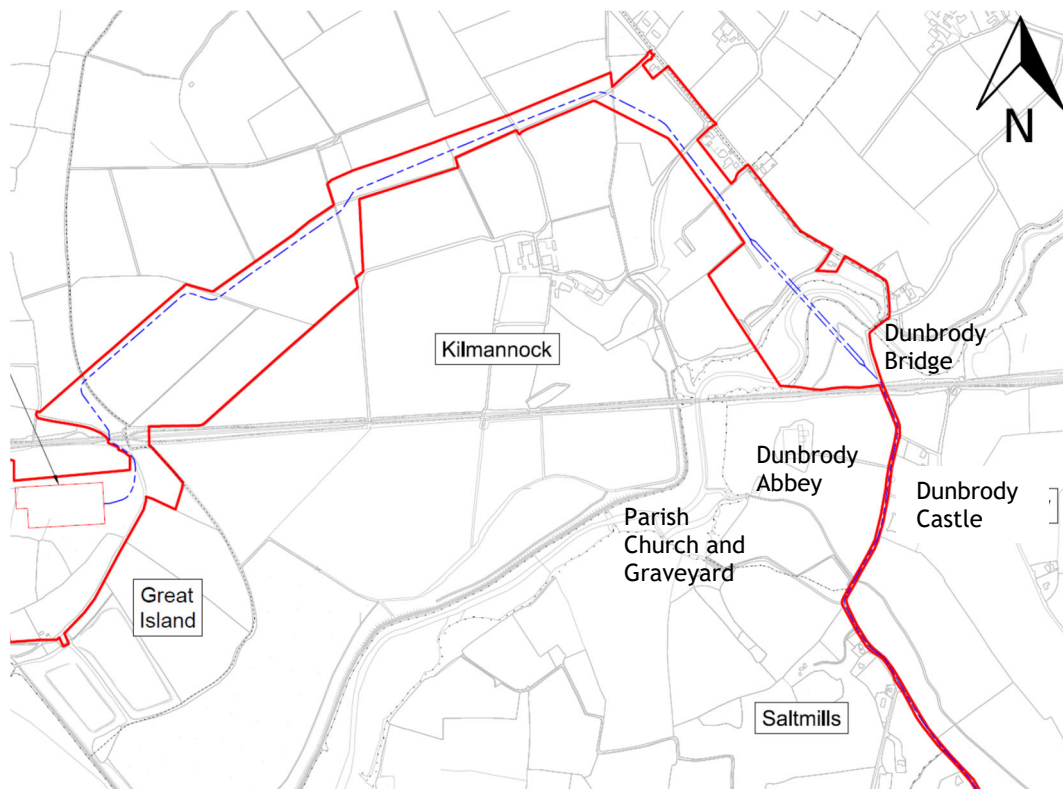


Figure 10.10 Cable route at Dunbrody (mapping source: Bing Maps © Microsoft 2020 | not to scale)

The cable route and HDD crossing point/compound will be in proximity to Dunbrody Abbey (RMP WX-039-030), medieval church and graveyard (RMP WX-039-029-001 and 002) and Dunbrody Castle (RMP WX 039-031) (**Figure 10.11**). The Cistercian abbey (**Figure 10.12**) is a National Monument in State Care. Dunbrody Castle (**Figure 10.13**) is a sixteenth-century fortified house enclosed by a bawn wall. The proposed cable route is routed along the exiting road between these sites. To the south there is a medieval parish church and graveyard (**Figure 10.14**) and the tidal mill (RMP WX-039-060) in Dunbrody/Saltmills. The proposed route has been reviewed by the National Monuments Service for a determination on the impacts. This determination requires that the excavation in the road between the Abbey and the Castle be archaeologically monitored during the construction phase under a standard excavation licence, in addition to the monitoring of all greenfield excavation. This will be agreed with the National Monuments Service as part of the licensing process.

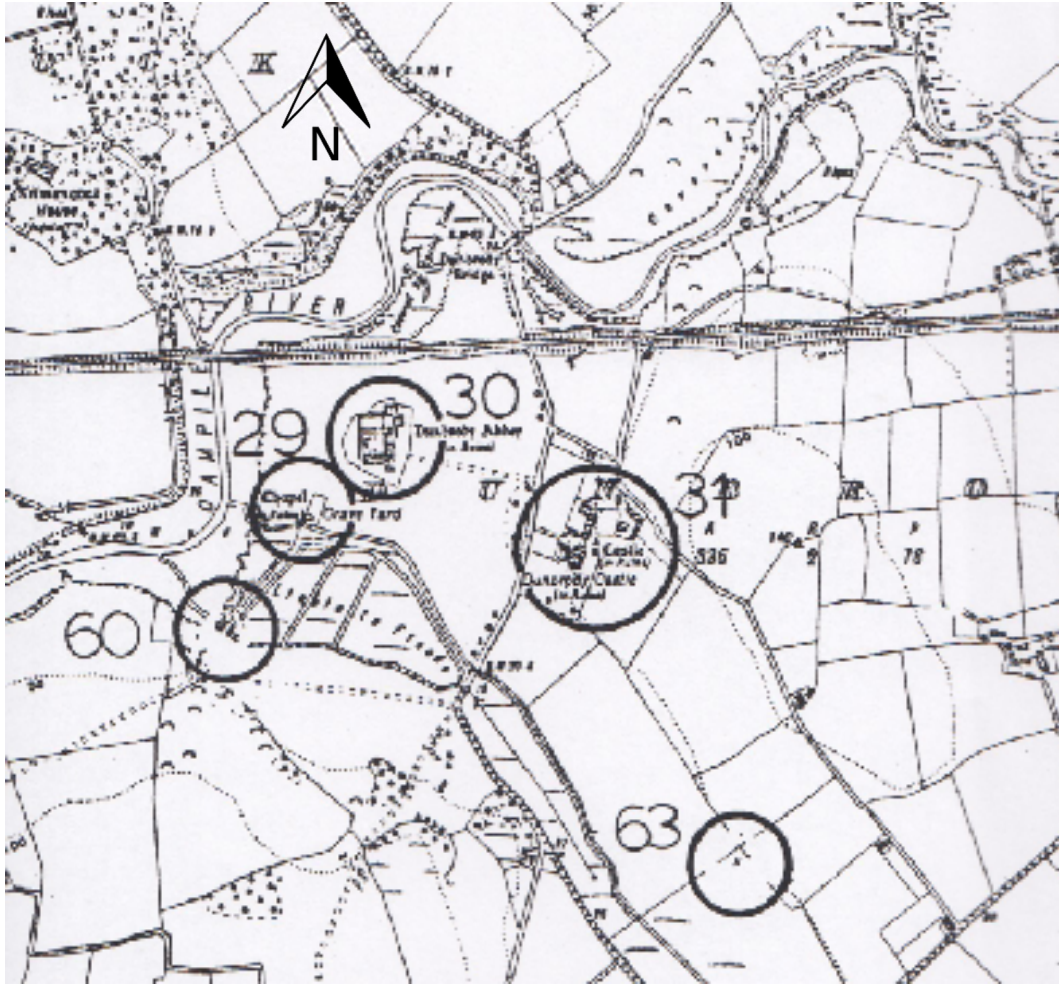


Figure 10.11 RMP Map Extract Sheet Number 39: Dunbrody (not to scale)



Figure 10.12 Dunbrody Abbey (RMP WX 039-030) from road (looking west)



Figure 10.13 Dunbrody Castle (Jacobean House) RMP WX 039-031



Figure 10.14 Medieval parish church and graveyard (RMP WX 039-029-001; 002) at Dunbrody

10.4.2.5 Greatisland

Greatisland⁴ includes two archaeological complexes but these will not be impacted by the development. The Greatisland Castles (site of) RMP WX 039-028-002 & 003; Ringwork RMP WX 039-028-001; Leper Hospital RMP WX 039-028-005; Enclosure RMP WX 039-028-004 are to the north of and outside the development zone. Kilmokea Church RMP WX 039-018-002; earthworks RMP WX 039-018-001; Water-powered mill RMP WX 039-018-003 are also on Greatisland but are outside the development area.

The proposed development includes the construction of a converter station, tail station, and cable trenching on Greatisland. A converter station construction compound and a cable contractor compound will also be installed. The proposed converter station and tail station will be located to the northeast of the existing power station on a greenfield location. The field was inspected in January 2019 and was under a low grass crop (**Figure 10.16**). There are no surface anomalies to suggest archaeological sites.

The proposed cable route will traverse fields to the north of the railway line (**Figures 10.17** and **10.18**), cross at a bridge beneath the railway (**Figure 10.19**) and thereafter connect across a greenfield site to a new converter station. The fields were inspected during the summer of 2018 when grass-growth was very low and conducive to site detection (including the land where the converter station construction compound and cable contractor compound will be). There are no surface indications of archaeological sites on any of the fields that will be crossed by the proposed cable trench.

⁴ In this chapter, “Greatisland” refers specifically to the townland, in contrast to the use elsewhere in this EIAR of “Great Island” as the general vicinity of the proposed converter station and tail station.



Figure 10.15 Proposed Cable Route and Converter station and tail station at Great Island (mapping source: Bing Maps © Microsoft 2020 | not to scale)



Figure 10.16 Greenfield site for cable route (looking south) connecting to converter station



Figure 10.17 Fields north of railway line



Figure 10.18 Fields north of railway line



Figure 10.19 Proposed crossing under railway via sub-railway-line bridge

10.4.3 Interaction between the Proposed Development and Architecture - Protected Structures

The proposed cable route will pass close to four protected structures:

- Ramsgrange Churches and Graveyard;
- Martello Tower Ramstown;
- Dunbrody Bridge; and
- Dunbrody Railway Bridge.

10.4.3.1 Ramsgrange Churches and Graveyard

The post-Penal church at Ramsgrange (RMP WX 044-036) is levelled. Memorial stones in the surrounding graveyard are a Protected Structure (Inventory No. 15617001). The Pugin-designed church to the north is also a Protected Structure (Inventory No. 15617002). The cable route will be approximately 30 metres from the site of the church.



Figure 10.20: Pugin-designed church at Ramsgrange

10.4.3.2 Martello Tower

The Martello Tower is on the promontory at Dundonnell (Baginbun Head) and is a protected structure (Inventory No. 15705009). Martello Towers were built in the period 1804-6 in response to a perceived threat on a Napoleonic Invasion. The tower is on a headland above the cable landfall location (close to Baginbun Beach). **Figure 10.4** is a map of the cultural heritage features close to Baginbun Beach.



Figure 10.21: Martello Tower Ramstown

10.4.3.3 Dunbrody Bridge

This is a three-arched bridge over the Campile River and construction pre-dates the First Edition Ordnance Survey mapping (1840). The bridge is listed in the Architectural Inventory (No. 15703915). **Figure 10.22** is a photograph of Dunbrody Bridge and **Figure 10.10** shows the location of this bridge. Dunbrody Bridge is located outside the redline boundary of the proposed development.

10.4.3.4 Dunbrody Railway Bridge

The bridge is a single-arched bridge, illustrated in **Figure 10.22**, over the road and was built in 1908. The bridge is listed in the Architectural Inventory (No. 15703916). The proposed cable route is in the road where it passes under Dunbrody Railway Bridge.



Figure 10.22: Dunbrody Bridge and Railway Bridge

10.4.4 Interaction between the Proposed Development and Underwater Archaeology

The proposed cable route will cross the Campile River Estuary. **Figure 10.10** is a map of the cable route at this location. The cables will be laid underground, a minimum of 10 metres below the riverbed, using horizontal directional drill technology (HDD). Ground disturbance will take place at the launch pit, the receptor pit and the HDD compound. The Campile River Estuary is tidal, as shown in the photograph **Figure 10.23**, taken at low tide, and some reclamation appears to have taken place along the river banks since the area was recorded in the 1840 Ordnance Survey mapping. The 1840 map is reproduced in **Figure 10.24**.

The underground cables will cross the Kilmannock Stream (also known as the Newtown River) via either an open cut or mini-HDD method. If an open cut method is used, the cable trenching detail at the stream crossing would not differ from the standard. However, the trench would be deeper to provide a one metre separation between the cable protective measures and the bed of the watercourse would be maintained to account for any future erosion. The river is approximately four metres wide and is a small, sluggish stream which is canalised and culverted further upstream.



Figure 10.23: Campile River Estuary

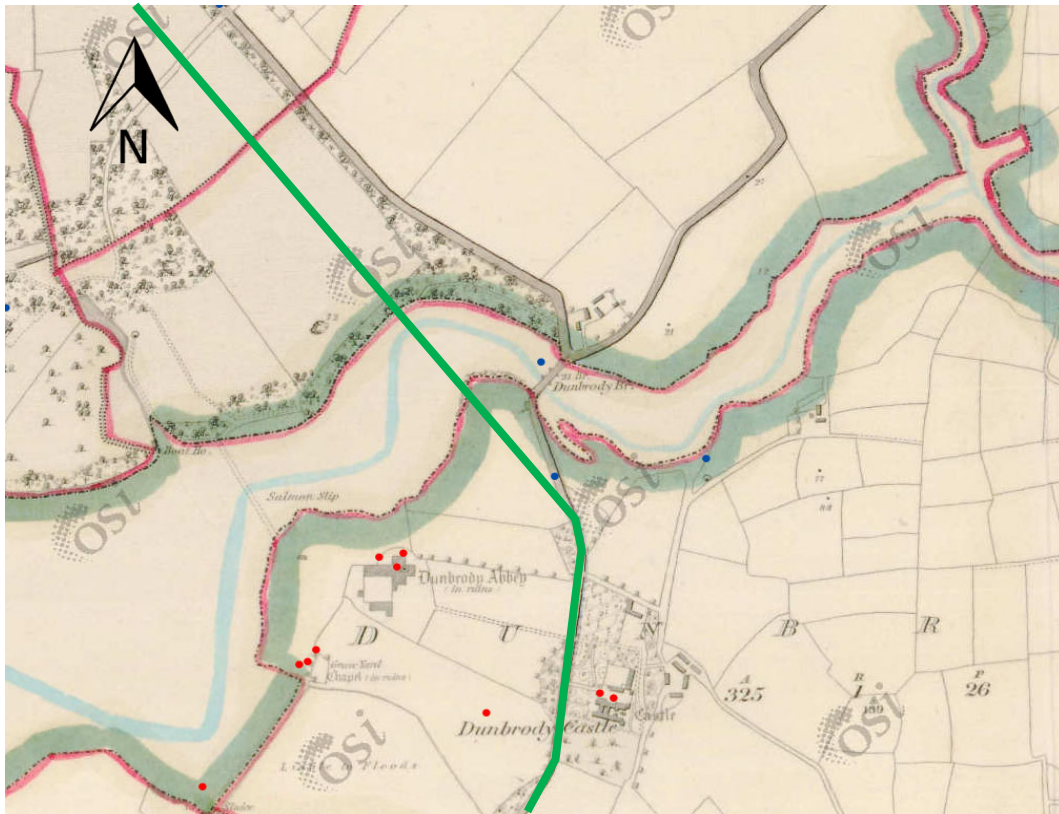


Figure 10.24: First Edition OS Map of Campile River at Dunbrody (not to scale | cable route indicated in green)

10.4.5 Cultural Heritage of a Social Type

The EPA (2003) suggests that cultural assets of a social type can include:

- language and dialects;
- folklore and tradition;
- religion and belief;
- literary and artistic association.

In the Wexford County Development Plan 2013 - 2019, which is the current plan, social heritage is addressed under the heading Arts and Cultural Heritage in Chapter 14, Section 14.7 of the Plan. The social heritage baseline is described as follows in the Plan:

“Wexford has a rich, diverse and distinctive cultural identity with a strong and internationally acclaimed creative and artistic base. The arts and culture of Wexford are a proud expression of our identity and play an important role in our social and economic well-being. Many people visit the county’s towns, monuments, festivals and historical sites each year to enjoy cultural experiences. Wexford’s long running internationally acclaimed Opera Festival has added not only to Wexford’s reputation but Ireland’s reputation for culture and creativity.”

“The county also contains many important historic landscapes and places such as Vinegar Hill, Carrigbyrne and Coolgreany, which together with prehistoric monuments, are important in defining our cultural identity.

“There has been significant investment in our cultural heritage in recent years with substantial investment in libraries, museums and theatre and centres for the arts. The Council has played an important role in providing and facilitating this development and in supporting the arts community.

The Plan supports the sustainable development of our cultural heritage and will encourage the development of cultural land uses and activities in order to support the arts and increase local awareness of our cultural heritage and identity. Further information on cultural heritage is included in Chapter 7.”

Chapter 7 of the Plan lists cultural events which are important tourist attractions in County Wexford. These include:

- Opera Festival
- Wexford Fringe Festival
- Wexford Food and Wine Festival
- Wexford Strawberry Festival; Strawberry half marathon
- Maritime Matter Music Festival
- Aims Choral Festival
- Agricultural shows
- Vintage tractor runs.

Under the heading “Arts and Cultural Tourism”, the plan states:

“Arts and culture is therefore an economic asset, which can be used to cultivate niche tourist markets and contribute to other tourist sectors. The Plan promotes the arts and cultural tourism industry and aims to encourage the further development of cultural land uses and activities in order to support of the arts, increase local awareness of heritage and cultural identity.”

The Wexford County Development plan does not mention language and dialect or religion and belief as forming part of the distinct cultural identity of County Wexford.

10.5 Potential Effects

10.5.1 Do- nothing Scenario

In the scenario where the proposed development does not proceed as planned, none of the effects as set out in this chapter would occur. Under the ‘do nothing’ scenario, the baseline environment as presented in **Section 10.4** would remain.

10.5.2 Construction Phase

10.5.2.1 Archaeological Landscape

There are four areas where the proposed cable route and associated working areas traverse the archaeological zone (zone of constraint) around known archaeological monuments. These are:

- Baginbun (Ramstown) Anglo-Norman Invasion landing site and earthworks.
- Templetown Possible Deserted Medieval Village;
- Kilcloggan Castle - adjacent to archaeological constraint zone;
- Dunbrody Cistercian Abbey, Parish Church and graveyard and Castle (Jacobean House);

Although the proposed development is not likely to have an effect on known archaeological features, any ground-breaking works for cable-trenches near these archaeological complexes may uncover previously unknown archaeological features and/or finds. Mitigation and monitoring measures have been proposed to deal with this and are discussed in further detail in **Section 10.6** below.

Visual Effects

The proposed development comprises undergrounded cables from Baginbun Beach to Greatisland, a converter station and a tail station adjacent to an existing industrial facility (power station and substation). There will be locally moderate negative temporary visual effects at the landfall site, where the HDD and contractors compounds will be on the setting of the heritage feature and the amenity/experience of the visitor. There are no upstanding archaeological sites near the proposed converter station and tail station, and therefore there will be no long-term significant visual effects on the known archaeological landscape.

Archaeological Effects

The proposed development area is close to four recorded clusters of archaeological sites as outlined in **Section 10.5.1**. It is possible that formerly unrecorded sites will be uncovered during the groundworks in greenfield areas. Buried archaeological sites may range from small-scale sites such as isolated burials to extensive evidence for habitation. These sites will only be detected by archaeological monitoring during ground disturbance. In order to prevent accidental damage to or loss of archaeological features, a series of mitigation measures is presented **Section 10.6**.

Construction of a converter station and tail station on Greatisland is in a greenfield area. Construction work may uncover previously unknown archaeological sites.

Construction of a temporary construction compound at Lewistown will be in a greenfield area which is illustrated in **Figure 10.24**. The site has no visible archaeological sites. Aerial photographic coverage does not record any anomalies to indicate low-visibility archaeological remains. Construction work may uncover previously unknown archaeological sites.

Mitigation and monitoring measures have been proposed to deal with this and are discussed in further detail in **Section 10.6** below.

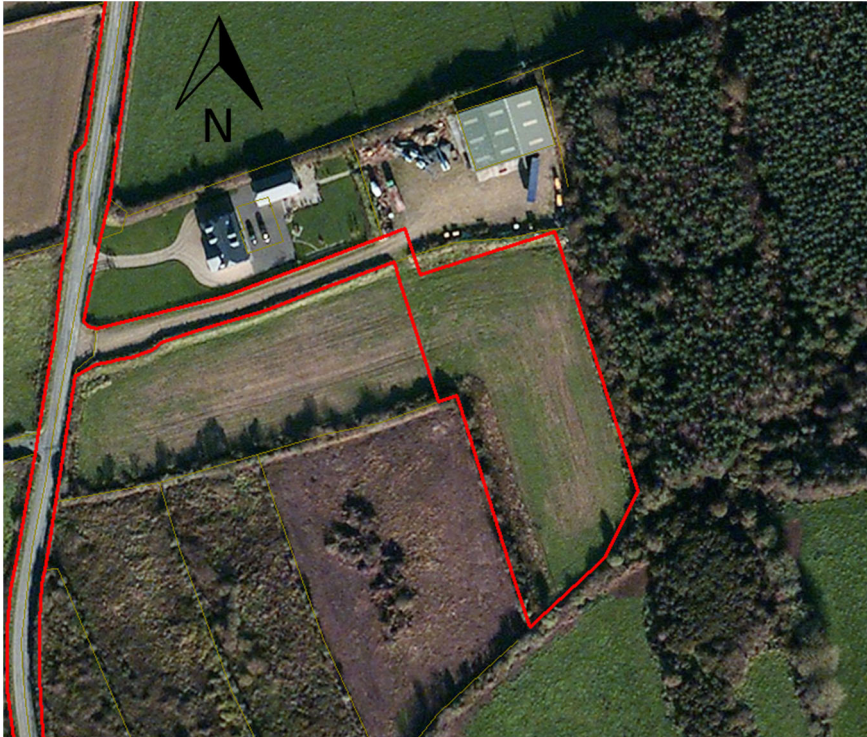


Figure 10.24 Temporary Construction Compound at Lewistown | not to scale

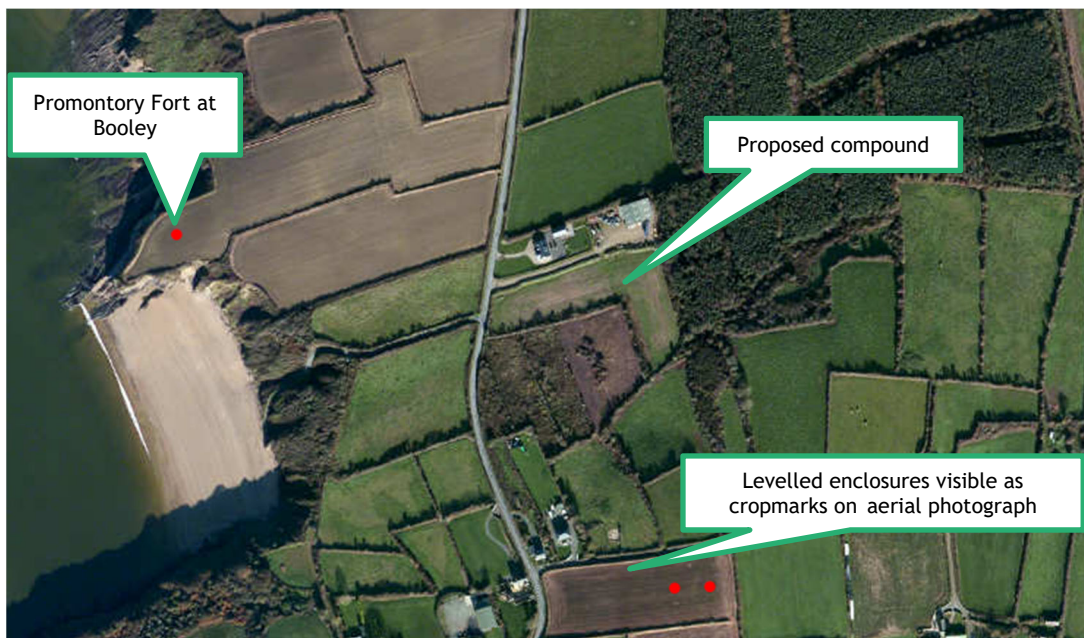
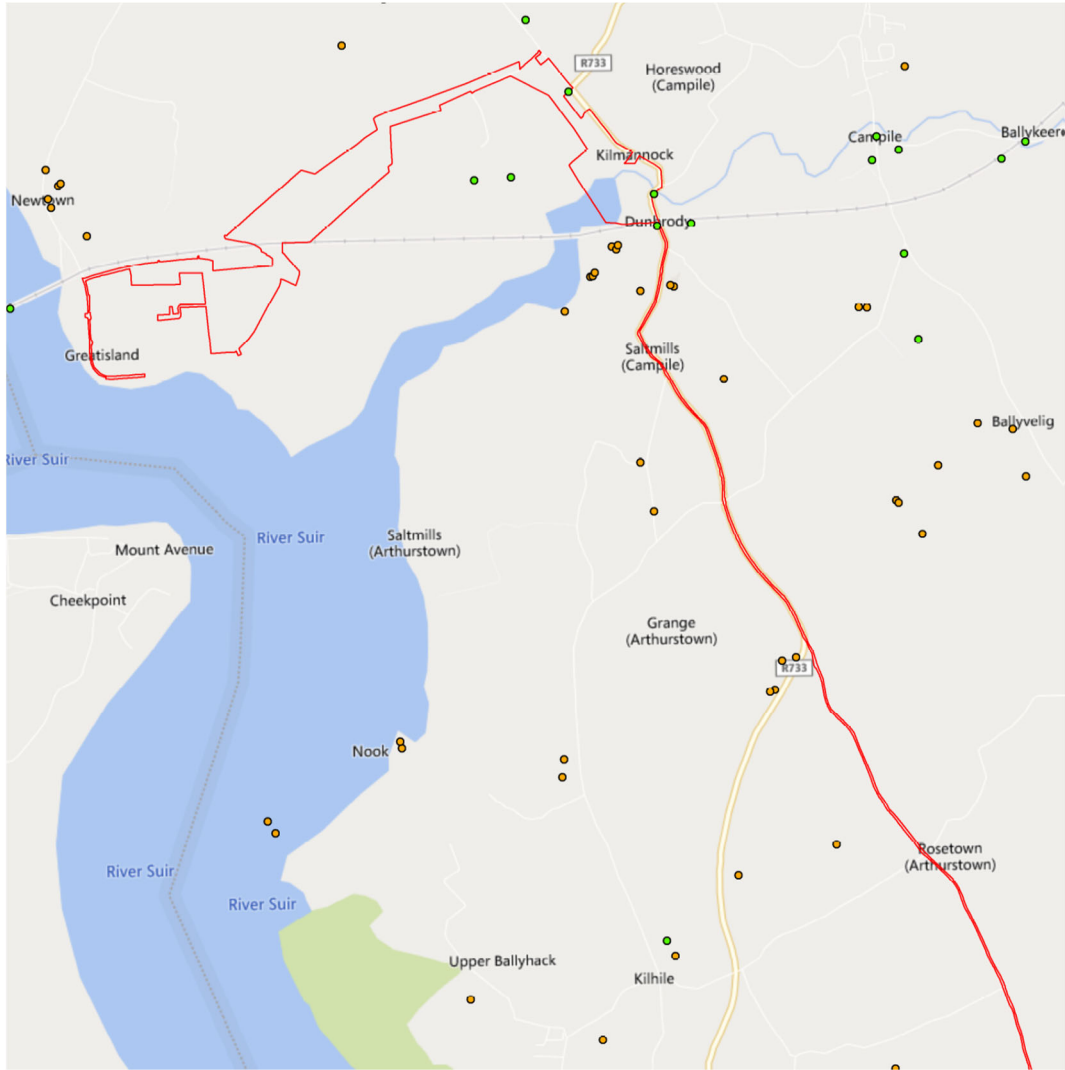


Figure 10.25 Archaeological Sites in Environs of Temporary Construction Compound at Lewistown | not to scale (note that red dots indicating levelled enclosures appear to have been incorrectly located in the same field)

Effects Summary

The effect of the proposed development on the archaeological landscape of the area was assessed using all of the available documentary and cartographic sources and by field inspection. There are four monument clusters within the proposed route as outlined in **Section 10.5.1**. Although the proposed development is not likely to have an effect on known archaeological features, it is possible however, that previously unrecorded archaeological remains may be uncovered during topsoil stripping in greenfield areas.

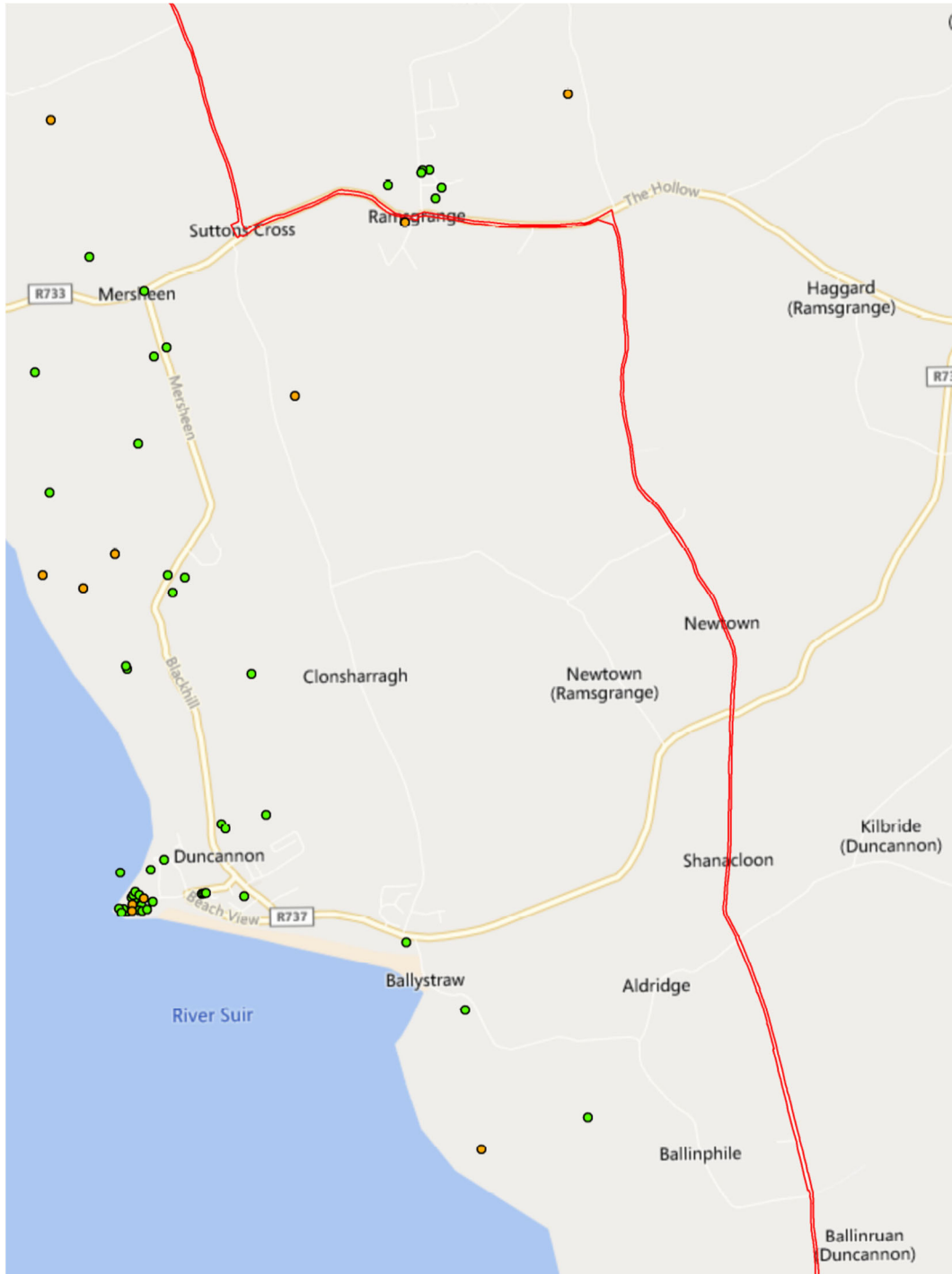
The archaeological and architectural heritage context is summarised in **Figures 10.26 to 10.28**.



Legend

- RMP Records
- NIAH Records
- Greenlink Red Line Boundary

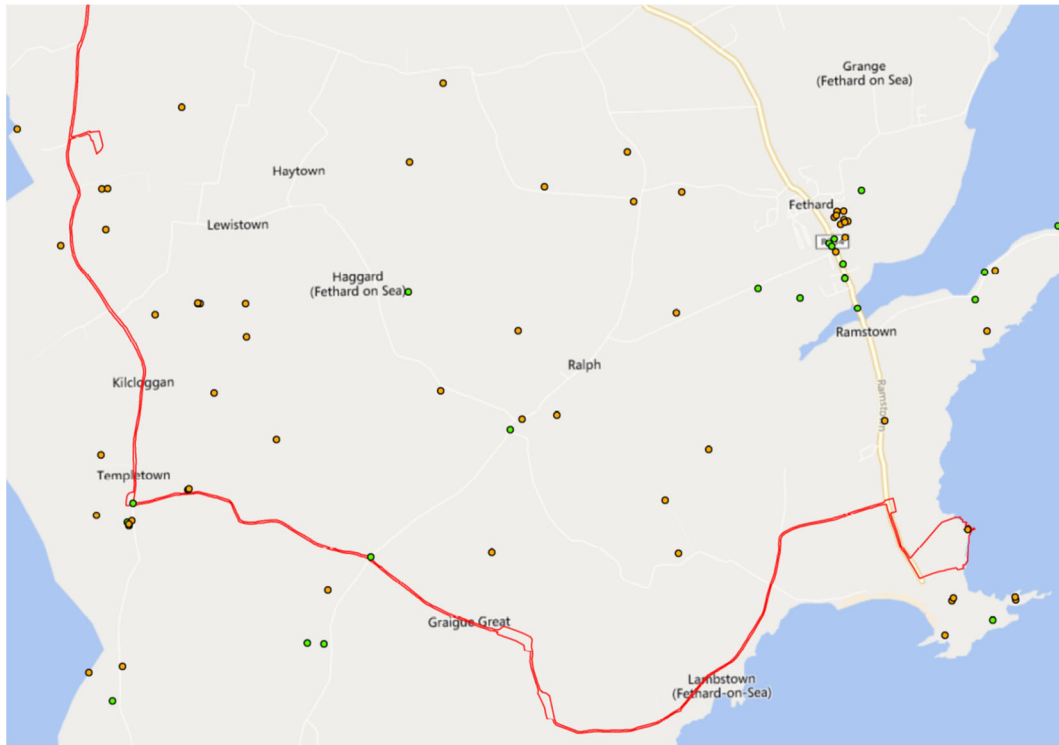
Figure 10.26 RMP and NIAH Records near the Proposed Development, map 1 of 3 | not to scale [mapping © Microsoft 2020]



Legend

- RMP Records
- NIAH Records
- Greenlink Red Line Boundary

Figure 10.27 RMP and NIAH Records near the Proposed Development, map 2 of 3 | not to scale [mapping © Microsoft 2020]



Legend

● RMP Records

● NIAH Records

□ Greenlink Red Line Boundary

Figure 10.28 RMP and NIAH Records near the Proposed Development, map 3 of 3 | not to scale [mapping © Microsoft 2020]

10.5.2.2 Architectural Heritage

The proposed development will have no effects on architectural heritage within the development area as the proposed cable route is not within the curtilage of any upstanding protected structure.

In addition, the converter station and tail station, which are adjacent to existing industrial facilities, are not close to any protected structures and will not have a visual effect on a protected structure.

10.5.2.3 Underwater Archaeology

The proposed development includes a landfall close to Baginbun Beach, a river crossing of the Campile River Estuary at Dunbrody and a crossing of the Newtown River. The methodology at the landfall site will be HDD with an on-shore reception pit. There will consequently be no significant effects in the context of marine or coastal archaeology. The crossing of Kilmannock Stream, to the north of the converter and tail station site will be undertaken by open cut or mini-HDD. If the crossing is done by open cut, it will be subject to surveying to ensure any unknown features are identified and avoided and archaeological monitoring as outlined in **Section 10.6** below, under licence.

The Campile River Estuary crossing will also be constructed using HDD and there will be no effects on the river course or banks. **Figure 4.3** in **Chapter 4 Construction Strategy** illustrates the HDD crossing alignment and HDD compounds.

10.5.2.4 Arts and Cultural Heritage

The social heritage baseline of the area, in which the proposed development will be located, is described in Section 10.4.5 above. The social heritage features include the creative and artistic base, the festivals and cultural heritage events, the historic towns and places, libraries, museums, theatres and centres for the arts, all of which create the cultural heritage and identity. There is no potential for these features to be affected by the construction of the proposed development.

10.5.3 Operational Phase

The operation of the proposed development will not have any adverse effects on archaeology, architectural or cultural heritage. There is no potential for the social heritage features to be affected by the operation of the proposed development.

10.5.4 Decommissioning

When it becomes appropriate to decommission the interconnector, each item of equipment in the converter station and tail station will be removed for appropriate management, based on the waste regulations at the time of decommissioning. All above ground civil works within the proposed converter station and tail station site will be removed and the site will be returned to its previous state.

The HVDC and HVAC cables will remain in-situ as there would be more environmental impact in removing the cables than can be justified by the recycle value of cable material.

Considering no intrusive works are associated with decommissioning, no significant effects on archaeology, architecture or cultural heritage are predicted during the decommissioning. There is no potential for the social heritage features to be affected by the decommissioning of the proposed development.

10.6 Mitigation Measures and Monitoring

10.6.1 Construction Phase

The proposed development site has a density of recorded archaeological sites. No other archaeological sites were detected during the field assessment. It is possible however that previously unrecorded subsurface archaeological features are present within the development area. The burial exposed at Churchtown is an example of accidental discovery during ground disturbance. Further information is provided in **Appendix 10.1**.

- All ground disturbance within the four complexes of archaeological monuments, all greenfield areas, including off-road locations of works and any ground disturbance associated with the excavation of launch and reception pits, the development of a converter station and tail station at Great Island including a converter station construction compound, the cable contractor compounds at Great Island, Lewistown and the landfall site and the HDD compounds at the Campile River Estuary and landfall site will be monitored by a suitably qualified archaeologist. Topsoil strip will be re-inspected after some days to locate any Stone Age (Mesolithic and Neolithic) lithic material that may not be apparent in freshly-turned soil. The archaeologist will secure an excavation licence for monitoring in the event of an archaeological discovery. The licence is issued by The Heritage Service, Department of Culture, Heritage and The Gaeltacht and approved by the National Museum of Ireland.
- The monitoring archaeologist will have the authority to halt the development if buried archaeological features or finds are uncovered. If archaeological remains are uncovered, these sites become an archaeological site and are protected by the National Monuments Acts 1930 - 2004, which give rise to the following obligations: Further work on the site will require consultation with the archaeological staff of The Heritage Service, Department of Culture, Heritage and The Gaeltacht. Any newly discovered site will be archaeologically resolved, for example by excavation and preservation by record under licence, or avoidance where feasible.
- At the site of the proposed converter station, tail station and converter station construction compound, where a number of archaeological sites are extant in the wider area, and where previous works during gas pipeline construction uncovered previously unknown archaeological sites, a geophysical survey will be undertaken, under licence. If potential archaeological material is detected, this will be archaeologically resolved prior to construction.
- Financial support and sufficient time within the construction programme will be provided at the outset of the proposed development to facilitate any excavation or recording of archaeological material that may be uncovered during the developmental works. The construction programme will be developed and implemented to reflect this provision, to ensure the preservation of such archaeological material.
- All test pits for engineering purposes will also be archaeologically monitored to prevent accidental damage to buried archaeological features and to record any accidental discovery of features and/or finds. Previous archaeological monitoring of test pits is discussed further in **Appendix 10.3**.
- As the proposed route for much of the cable route is along the existing road network it is not expected that any townland boundaries will be breached. If townland boundaries are impacted in greenfield areas, these will be archaeologically recorded.
- A 2.4m hoarding will be provided around contractors' compounds, which will mitigate temporary effects on visual receptors, in particular in the vicinity of the works near Baginbun Beach.

- If the preferred method for crossing the Newtown River is not used (mini-HDD), and open-cut techniques are used, a wade survey and metal detector survey of the crossing area will be carried out, under licence; and
- The contractor will ensure compliance with specific vibration limits at sensitive receptors, which includes Dunbrody Bridge.

10.6.2 Operation and Decommissioning Phases

No adverse effects on archaeology, architectural and cultural heritage are predicted for the operational or decommissioning phases of the proposed development.

10.7 Residual Effects

The proposed development site is located within an area that was easily accessible to prehistoric settlers. This type of landscape was attractive to nomadic hunter/gatherer groups or Mesolithic people as it offered food resources both from the land and sea. Scatters of flint tools of these population groups have been recovered in the Waterford Harbour area. The possibility is that remains of these early settlers remain undetected within the development area. Similarly, the first farmers or Neolithic populations found this type of landscape attractive because of the easily cultivated soil and the proximity of riverine and coastal areas to a settlement site. Settlement sites of this period have been discovered on infrastructural projects to the north of the development area. The landscape has several monuments from the Early and High Medieval periods and include the highly visible medieval landscapes at Dunbrody, Kilmokea, Greatisland and Templetown. The initial landing area of the Anglo-Norman invading armies is at Baginbun. These sites are indicative of past use and it must be assumed that there is a possibility of uncovering further sites when ground levels are disturbed during construction works.

With the implementation of the archaeological mitigation measures committed to in this chapter, no significant residual effects on archaeological, architectural and cultural heritage are predicted during the construction, operation and decommissioning phases.

10.8 Cumulative and Transboundary Effects

10.8.1 Cumulative Effects

The proposed development forms part of the Greenlink project, which also includes offshore elements, and works in the United Kingdom. The only potential for cumulative or interactive effects with the wider project occur at the landfall site near Baginbun Beach, and the potential effects at this location have been fully documented in this chapter.

The proposed development may also give rise to cumulative effects with regard to other proposed developments, either consented or currently under construction. Two projects have been identified which may give rise to cumulative effects -

- Great Island - Kilkenny 110kV Line Uprate Project
- Great Island Energy Storage System.

The Great Island - Kilkenny 110kV Line Uprate Project is the replacement of the conductors on an existing 110kV overhead powerline. The powerline upgrade project in combination with the proposed development is not expected to have an effect on known cultural heritage features.

The Great Island energy storage system will be located on a greenfield site adjacent to the converter station and tail station site, on its northern side. The energy storage project in combination with the proposed development is not expected to have an effect on known cultural heritage features. However, as both are greenfield sites, there is the potential for unknown archaeological features to be uncovered, as discussed above.

10.8.2 Transboundary Effects

The proposed development is not likely to have a significant effect on archaeological, architectural and cultural heritage in another state.

10.9 Impact Assessment Summary

Receptor	Potential Effects	Mitigation	Monitoring	Residual Effects
Visual Receptors in the vicinity of the landfall site and compounds	Locally moderate temporary negative effects	2.4m hoarding will be provided around the construction compounds, which will provide a visual screen.	None	Locally moderate temporary negative effects
Known archaeological sites and greenfield sites of archaeological potential	Significant	<p>The proposed development site has a density of recorded archaeological sites. No other archaeological sites were detected during the field assessment. It is possible however that previously unrecorded subsurface archaeological features are present within the development area. The burial exposed at Churchtown (further information is provided Appendix 10.1) is an example of accidental discovery during ground disturbance.</p> <p>All ground disturbance within the four complexes of archaeological monuments, all greenfield areas, including off-road locations of works and any ground disturbance associated with the excavation of launch and receptor pits, the development of a converter station and tail station at Greatisland and the temporary construction compound at Lewistown will be monitored by a suitably qualified archaeologist. Topsoil strip will be re-inspected after some days to locate any Stone Age (Mesolithic and Neolithic) lithic material that may not be apparent in freshly-turned soil. The</p>	See mitigation column.	No significant effects

Receptor	Potential Effects	Mitigation	Monitoring	Residual Effects
		<p>archaeologist will secure an excavation licence for monitoring in the event of an archaeological discovery. The licence is issued by The Heritage Service, Department of Culture, Heritage and The Gaeltacht and approved by the National Museum of Ireland. The monitoring archaeologist will be empowered to halt the development if buried archaeological features or finds are uncovered. If archaeological remains are uncovered, these sites become an archaeological site and are protected by the National Monuments legislation. Further work on the site will require consultation with the archaeological staff of The Heritage Service, Department of Culture, Heritage and The Gaeltacht. Any newly discovered site will be archaeologically resolved.</p> <p>At the site of the proposed converter station and tail station, where a number of archaeological sites are extant in the wider area, and where previous works during gas pipeline construction uncovered previously unknown archaeological sites, a geophysical survey will be undertaken. If potential archaeological material is detected, this will be archaeologically resolved prior to construction.</p> <p>Provisions, including financial and time will be made at the outset of the proposed development to facilitate any excavation or recording of archaeological material that may be uncovered during the developmental works.</p> <p>All test pits for engineering purposes will also be archaeologically monitored to prevent accidental damage to buried archaeological features and to record</p>		

Receptor	Potential Effects	Mitigation	Monitoring	Residual Effects
		any accidental discovery of features and/or finds. Previous archaeological monitoring of test pits is discussed further in Appendix 10.3 . As the proposed route for much of the cable is along the existing road network it is not expected that any townland boundaries will be breached. If townland boundaries are impacted in greenfield areas, these will be archaeologically recorded.		
Architectural Heritage	None	None	None	No significant effects
Underwater Archaeology	None	None	None	No significant effects

10.10 Conclusion

As stated above, with the implementation of the archaeological mitigation measures committed to in this chapter, no significant residual effects on archaeological, architectural and cultural heritage are predicted during the construction, operation and decommissioning phases.

10.11 References

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