

## 13 Archaeology and Cultural Heritage

### 13.1 Introduction

Moore Group was commissioned by ORS Ltd. to complete a Cultural Heritage Impact Assessment of a proposed Biogas project at Curragh, Carnaross, Co. Meath. The proposed development is in the north of County Meath at Carnaross, along the R147 between Kells and Virginia, County Cavan. The subject site is approximately 5 km west of Kells. There is one National Monument site located roughly 1 km south of the subject site – the sandstone high crosses at Castlekeeran (National Monument Number 107, SMR number ME016-006 and related sub numbers). There are no recorded monuments within 1 km of the subject site. There are a number of protected structures and NIAH sites in nearby Carnaross village.

The proposed development comprises a storage and processing plant to accommodate and process agricultural manures, slurries and grass silage and its conversion into a methane rich biogas that is a carbon negative alternative to natural gas, and a nutrient rich fertiliser, digestate. Carbon dioxide from the process will also be captured and converted into food grade CO<sub>2</sub>.

The proposed supporting infrastructure to be developed includes inter alia, 1 no. combined primary and secondary digestion tank; 1 no. enclosed feedstock storage building; 1 no. enclosed silage clamp, 1 no. enclosed digestate separation building, (housing 1 no. screw press separator, 1 no. centrifugal separator & a digestate pit); 1 no. digestate treatment building; 1 no. digestate storage tank; 2 no. CHP units (2 x 500kW), biogas upgrading unit, gas grid entry unit, carbon dioxide capture equipment, gas flare, all other on site processing plant above and below ground, facility office and administration building, weighbridge, roof mounted solar arrays / photovoltaic panels, all associated car & vehicle parking, internal road layouts, all supporting plant, process and storage facilities will be housed on hard surfaced and bunded areas, all other above and below ground services, landscaping and boundary treatments and a new access road from the R147 with an underground gas pipeline to the gas grid connection in the R147.

This study aims to assess the baseline archaeological, architectural, and cultural heritage environment, to evaluate the likely impacts that the proposed development will have on this environment and to suggest mitigation measures in accordance with the policies of the Department of Housing, Local Government and Heritage, Clare County Council, the National Monuments Acts (as amended) and best practice guidelines, and, where appropriate, recommend mitigation measures to ameliorate these impacts. Following on from this, the residual impact that the proposed scheme will have on the baseline environment is evaluated and identified. For the purposes of this report the definition of “cultural heritage” is taken broadly from the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972, which considers the following to be “cultural heritage”:

- Tangible cultural heritage:
- Movable cultural heritage (artefacts)

- Immovable cultural heritage (monuments, archaeological sites, and so on)
- Underwater cultural heritage (shipwrecks, underwater ruins, and cities)
- Intangible cultural heritage: oral traditions, folklore etc.

This Impact Assessment addresses Cultural Heritage under two headings: archaeology and architectural/built heritage.

### 13.2 Consultation

ORS have been commissioned to assess the potential impacts of the proposed development in terms of population and human health during the construction and operational phases.

The principal members of the ORS EIA team involved in this assessment include the following persons:

- **Consultant Archaeologist & Lead Author:** Declan Moore – B.A. Archaeology and English. Member of the Institute of Archaeologists of Ireland and the European Association of Archaeologists. Current Role: Archaeological Consultant. Experience ca. 30 years.
- **Project Scientist & Reviewer:** Ross Kearney – PgD Env. (Post Graduate Diploma in Environmental Protection), MCIWEM. Current Role: Senior Environmental Consultant. Experience ca. 7 years.
- **Project Lead & Reviewer:** Luke Martin - B.A. (MOD) (Natural Sciences), M.Sc. (Sustainable Energy and Green Technology), CEnv, MIEEnvSc. Current Role: Senior Environmental Consultant. Experience ca. 10 years.

Consultation between ORS and other members of the planning/design team was made in order to obtain information required to assess the potential construction and operational phase impacts on archaeology and architectural/built heritage.

## 13.3 Assessment Methodology & Significance Criteria

### 13.3.1 Desktop Study

The evaluation of impacts upon the archaeological, architectural, and cultural heritage resource is based on a desktop study of published and unpublished documentary and cartographic sources, followed by a field survey. Considering the legislative protection afforded to the cultural heritage resource this report evaluates the archaeological, architectural, cultural, and historical importance of the subject area and examines the potential impacts of the proposed development on both the local archaeological monuments and cultural heritage sites.

All known cultural heritage sites were mapped in GIS along with aerial photography and Ordnance Survey Ireland (OSI) First Edition Mapping (Circa 1830). Sites mapped included the following:

- UNESCO World Heritage Sites including the tentative list of candidate sites;
- National Monuments, be they in the ownership or guardianship of the State, in the ownership of a local authority or monuments under preservation orders.
- Record of Monuments & Places (RMP) and Sites and Monuments Record (SMR) from [www.archaeology.ie](http://www.archaeology.ie).
- Records of Protected Structures from Meath County Council.
- National Inventory of Architectural Heritage (NIAH) for County Meath.
- Demesnes Landscapes and Historic Gardens indicated on the OSI First Edition Mapping.

All townlands located within 2km of the proposed development site were listed and crossed referenced with:

- National Monuments, a list for County Meath available from [www.archaeology.ie](http://www.archaeology.ie).
- Preservation Orders, a list available from the National Monuments Service; and
- Lists contained in the Report of the Commissioners or Church Temporalities of Ireland (1879) which contain lists of Churches, School Houses and Graveyards that were vested in the Representative Church Body and the Burial Boards under The Irish Church Act, 1869.

This chapter was carried out in accordance with the following legislative and guideline documents and databases:

- The Planning and Development (Strategic Infrastructure) Act 2006
- The National Monuments Act 1930 to 2004
- The Planning and Development Act 2000
- The Architectural Heritage and Historic Properties Act, 1999
- The Archaeological Survey Database (ASD)
- The National Inventory of Architectural Heritage (NIAH)
- The Framework and Principles for the Protection of the Archaeological Heritage

- guidelines, 1999
- ICOMOS Xi'an Declaration, 2005
- EIA Directive 85/337/EEC as amended
- The European Landscape Convention 2000
- Valletta Convention, 1997
- Granada Convention, 1997
- UNESCO World Heritage Convention, 1972
- Department of the Communications, Climate Action, and Environment. 2000. Landscape and landscape assessment. Guidelines for planning authorities.
- Department of Culture, Heritage, and the Gaeltacht, 1999. Frameworks and Principles for the Protection of the Archaeological Heritage, Government publications, Dublin.
- Department of Culture, Heritage, and the Gaeltacht, 1999. Policy and Guidelines on Archaeological Excavation. Government Publications, Dublin.
- EPA, 1995. Advice notes on current practice in the preparation of Environmental Impact Statements. Dublin.
- EPA, 2022. Guidelines on the information to be contained in Environmental Impact Assessment Reports. Environmental Protection Agency, Ireland.
- Landscape Institute and Institute of Environmental Management & Assessment, 2013; Guidelines for Landscape and Visual Impact Assessment (third edition), Routledge, London.
- The Heritage Council, 2000. Archaeology & Development: Guidelines for Good Practice for Developers. The Heritage Council of Ireland Series.
- The Planning and Heritage Section of the Department of Communications, Climate Action, and Environment. Sites and Monuments Record, County Dublin.
- National Monuments Acts (as amended).
- National Museum of Ireland. Topographical files, County Dublin viewed at [www.heritagemaps.ie](http://www.heritagemaps.ie)).

### 13.3.2 Field Work

The project area was surveyed by Declan Moore in August 2022. The survey comprised a walkover survey of the subject site.

Archaeological and historic landscape features were documented through photography. The topography, views and ground conditions were assessed and recorded. Archaeological and architectural sites in the surrounding area were viewed or inspected to assess the potential impact on the setting of these sites after having been identified from the desktop review. Inspected locations were chosen based on their proximity to the development as well as the presence of upstanding features and the higher significance of the sites. The overall visual impact of the proposed development is addressed in the landscape and visual impact assessment (Hayes, 2022).

The subject site was accessed via a field gate to the west adjacent to a local road running north from Carnaross village.

The terrain comprises a NW-SE aligned roughly rectangular plot. The area of the subject site is located on a north facing gently sloping greenfield site in use as grazing. The plot is bordered by hedgerow on all sides.

There were no new features of archaeological or architectural significance noted at the subject site during the fieldwork. The photographs taken during this site inspection are available for review in **Appendix 13.1**.

### 13.3.3 Meath County Development Plan 2021-2027

The Meath County Development Plan (2021-2027 as revised) was reviewed to obtain a comprehensive understanding of the cultural heritage of the area. The development plans contain lists of cultural heritage sites including national monuments, recorded monuments, architectural conservation areas, protected structures, and protected views as well as baseline assessments of the landscape character of the county.

The plans also outline the county's heritage policies and objectives that aim to protect and promote the archaeological, architectural, and cultural heritage of the region. This evaluation was carried out with due regard to these policies and other relevant information contained within the plans.

This assessment was also cognisant of the objectives of section 5 of the Carnaross Village Development Policies and Objectives as follows:

**CARN OBJ 9:** To protect the setting and character of the protected structures within the Village Crossroads, and also traditional structures that contribute to the character of the area, including townhouses located at the village crossroads, cottage and farm buildings located to the east of the parochial house, and Lennox Brook House, attendant grounds and site boundaries which contribute to the character of the village.

**CARN OBJ 10:** To facilitate the provision of continuous pedestrian routes that incorporate the open character between the character areas, the mature trees, and hedgerows between the character areas, and at the entrances to the village.

**CARN OBJ 11:** To protect the mature trees to the rear of the Village Crossroads, visible on the approach to the village from the south and surrounding Lennox brook House to the east of the village core.

**CARN OBJ 12:** To preserve views identified on the land use zoning map from development which would adversely impact on the character and visual amenity of the landscape.

To assess the potential impact of the proposal the following sources were also consulted or reviewed:

- Excavations Bulletin.
- Topographical files of the National Museum of Ireland.
- Cartographic Sources.
- Toponyms.
- Aerial photographs.

- Published archaeological inventories; and
- Documentary Sources: several literary references were consulted.

## 13.4 Description of the Receiving Environment

### 13.4.1 Background

The proposed development is in the north of County Meath at Carnaross, along the R147 between Kells and Virginia, County Cavan. The subject site is approximately 5 km west of Kells. **Figure 13.1** below show the site location. The site details are summarised in **Table 13.1**.

Figure 13.1 Site Location Map, © OpenStreetMap contributors.

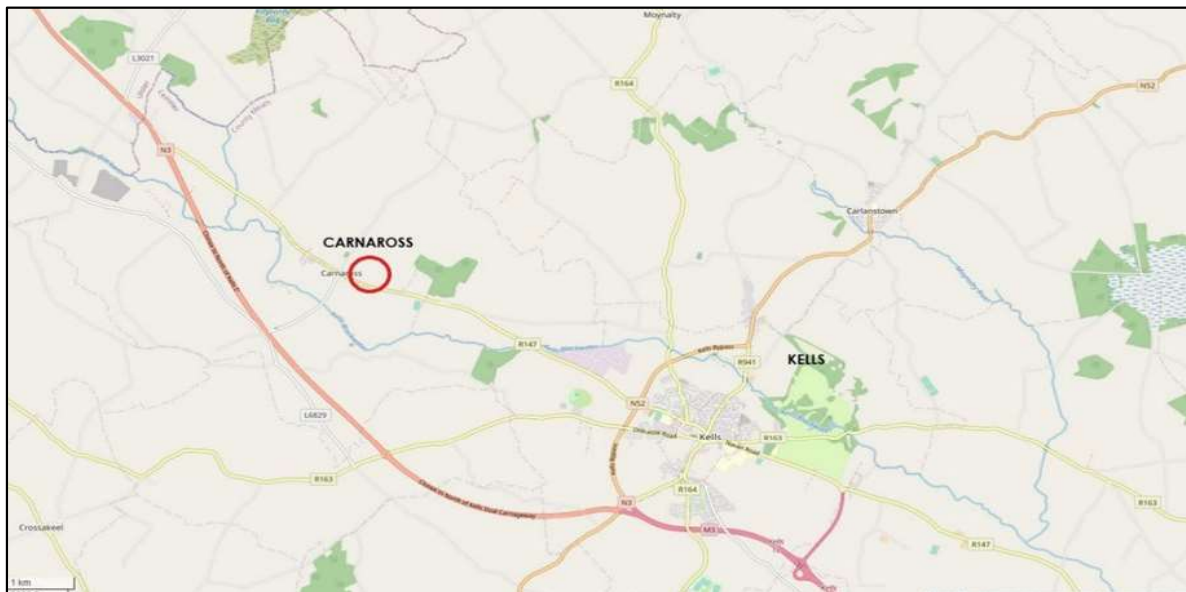


Table 13.1 Location and site details

<b>County</b>	Meath
<b>Barony</b>	Kells Upper
<b>Parish</b>	Loughan or Castlekeeran
<b>Town</b>	Vicinity of Carnaross
<b>Townland (s)</b>	Curragh
<b>Road</b>	R147
<b>RMP's / SMR's within 100m</b>	None (see also section 3.3.2)
<b>Architectural Conservation Area</b>	None.
<b>Recorded Architectural Sites within 100m of works</b>	None, 6 protected structures in nearby Carnaross (see section 3.4)
<b>ITM</b>	Centred on 669280/778581

### 13.4.2 Archaeological, Architectural and Historical Background

#### Carnaross/Curragh

The parish of Carnaross is composed of the three medieval parishes of Castle Kieran, Loughan and Dulane. Carnaross is not mentioned as a townland earlier than 1837, and O'Donovan in the Ordnance Survey Field Name Books, refers to it as "a group of houses (two of them public houses) called Carnaross". In Lewis' 1837 Topographical Dictionary of Ireland Carnaross is described as 'a parish, partly in the barony of Castlerahan, county of Cavan, and province of Ulster, but chiefly in the barony of Upper Kells, county of Meath, and province of Leinster, 4 miles (N. W.) from Kells, on the road from Dublin by Kells to Enniskillen; containing 3795 inhabitants, of which number, 339 are in the village of Loghan'. The townland of Curragh is described as a hamlet containing 78 inhabitants.

According to the Meath County Development Plan 'Carnaross benefits from an historic built heritage in the Village Crossroads cluster that contributes to its sense of place, which include protected structures, and traditional vernacular building forms, also traditional farm buildings and boundaries to the west at River View, and Lennox brook House, outhouses, and curtilage to the east of the village. There are no archaeological monuments in Carnaross recorded on the Record of Monuments and Places, although there are numerous monuments to the south of the village including church ruins, high crosses, and an ogham stone, located at St. Ciarán's Well'.

Castlekieran, located roughly 2 km south of the subject site, was historically called Bealaigh-duin, " the Road or Pass of the Fort". A monastery was founded here on the southern bank of the Blackwater, by St. Ciaran, which was called Disert Chiarain-Bealaigh-duin. The Annals of the Four Masters reference Castlekieran as follows:

- 770. Ciaran, the Pious, of Bealach-dain, died on the 14th of June.
- 855. Siadhal, Abbot of Disert-Chiarain (Castlekieran), died.
- 868. Comsudh, Abbot of Disert-Chiarain, of Bealach-duin, died.
- 949. Castlekieran was plundered by the Danes.
- 961. Dubhthach, Abbot of Castlekieran, died.
- 1170. Castlekieran was burned by Dermot Mac Murcha, king of Leinster, and the foreigners.

The old church is described as 'quadrangular, measuring forty-five feet six inches by twenty feet. Most of the stones have been carried away, and the whole presents a melancholy picture of desolation. There are interesting remains of five Term on crosses, between four of which the church is situated; and one of those on the north side is placed in the Blackwater'.

Cogans 'The diocese of Meath: ancient and modern (Volume 2)' notes the following with reference to the general area:

Loghan. The old church has been torn down and up- rooted. There was a holy well here dedicated to St. Anne. The ruins of the abbey-church of Castle-Kieran are situated in the

parish of Loghan. (See vol. i. pp. 124, 125). Convenient to the termon-cross, on the south-side, there is a green grave, marking the resting-place of a priest, name now unknown, on which, at interments, the coffin is deposited, while the De Profundis is being entoned.

Dulane. This old church presents every appearance of antiquity. The chancel has been torn down. The nave measures thirty feet by twenty-one. There is a plain doorway on the west end, surmounted by an immense block of stone; another entrance on the south side seems to have been more modern. The baptismal font lies to the north of the church. It is a large stone with sides inclining, about three feet in height, and measures internally one foot ten inches by ten inches. Here stood the ancient abbey of Tuilen, or Tulan, founded by St. Cair-nigh in the sixth century. The grey walls of the venerable sanctuary, in the last stage of desolation, encompassed by a rich and beautiful country, cannot fail to speak to the heart of the pilgrim, and remind him of the once happy days of Ireland.

### **Historic Kells**

The nearby town of Kells rose to prominence in the early medieval period, when it was located on important routes from Drogheda and from Dublin, and it became the site of a monastery founded at the beginning of the ninth century. Kells remained an important religious centre before and after the Norman invasion: it was a royal stronghold of Irish kings and was a Norman manor and later a walled town. The site of Kells is mentioned in numerous written sources of the pre-Norman period, and from the late seventh century the place was referred to as Cenannus, deriving from the Irish 'white-headed or white-faced' (Simms 1990).

The earliest mention of the monastery at Kells dates from 807 when the new Columban monastery was being built to house the community who had fled from the island of Iona after Viking raids. There might already have been a church located at Kells prior to this, but the arrival of the community from Iona, along with treasures including the gospel book known as the Book of Kells, as well as relics of St Columba (brought to Ireland in 877), raised the importance of the place, which by the mid-10th century had become the head of all Columban foundations in Ireland.

Charters are recorded on blank pages in the Book of Kells, recording grants and purchases of land between 1033 and 1161, showing that the monastery was endowed with land across Ireland. The monastery was a centre for arts, including for the masons who carved the town's four high crosses and the silversmith who made the shrine of the Cathach of St Columba at the end of the 11th century. Kells was also a market town, and the charters refer to the sale of cattle, granaries of the town's residents and transactions involving property. The monastery was the core around which the town took shape, and the curved streets surrounding the raised ground appear to preserve the line of the ecclesiastical enclosure. The town's medieval layout, with its inner and outer enclosures, has been reconstructed based on historical references and on the existing streetscape (Simms 1990).

Although Kells was not established as a bishopric at the Synod of Rathbreasail in 1111, it was the venue for another synod held in 1152, when it became a bishopric. An Augustinian monastery was founded at Kells in the mid-12th century. The site is not known with certainty,

but it is said to have been located outside Cannon Gate, in an area known as Abbey Field, southwest of the ecclesiastical enclosure. The site is listed as a RMP (ME017-044039-), and part of the listing's entry reads as follows: 'A house of Augustinians was established in 1140-1148, at the suggestion of St Malachy, and it may have been a double monastery of canons and nuns since it was described as a dependency of the Arroasian house at Clonard in 1195. The abbey may have been destroyed by campaigns by Dermot MacMurrough in 1171 or the Anglo-Normans in 1176 since it was re-founded by Hugh de Lacy before 1186 and its charter was confirmed by Richard II at Drogheda in 1395'.

The arrival of the Normans led to significant changes to the ecclesiastical/political organization in Kells and to the town's physical layout. Its strategic location meant that it became more militarily significant. Hugh de Lacy established a manor at Kells, but its castle was abandoned by 1176, perhaps to prevent its capture. However, a castle is mentioned again in 1212: there appears to have been two castles situated in the town. A description of the town dating from 1663 describes a stone and lime walled castle at the south end of what was called Maudlin Street (now Castle Street); it was again mentioned in a description of 1740, and the castle is depicted on Headford estate maps opposite the Market Cross. The castle had been dismantled by the time the first Ordnance Survey was carried out in 1836. The castle is listed on the RMP (ME017-044003-) which plots its location at the south end of Castle Street, very close to where the monitored trenches run.

The borough may also have been established by Hugh de Lacy, or perhaps his son Walter, as the earliest evidence for its incorporation is a charter granted by Walter after 1194. In the high medieval period, Kells was exposed to attack from the native Irish. It was burnt in 1203 and again in 1315 when Edward Bruce defeated an army under Roger de Mortimer outside the town. In the 15th and 16th centuries it was on the edge of the Pale and a portion of the pale ditch still survives one mill to the north-west.

The town was encircled by a wall by the 14th century, as indicated by a reference to the town walls in a murage grant of 1326. The cost of maintaining the wall was unpopular among the townspeople, as recorded in a petition of 1472, which notes that people were deserting the town due to high taxes. The town defenses are not intact, and apart from a short stretch of wall and mural tower (ME017-044005-) there are no other standing remains of the medieval wall.

In 1598 Kells was listed among the walled towns of Meath and it appears to have prospered into the seventeenth century: in 1642 the Catholic bishops and vicars of the province of Armagh convened a synod. However, the confederate wars had a devastating effect on Kells, as indicated by the 1663 valuation of premises in the town, an outcome of the Cromwellian settlement. The Cromwellian Colonel Richard Stephens took possession of Kells in 1654, and he petitioned the government to confirm his possession of the town, emphasizing it as being a poor and ruinous place until his plantation and restoration in the following years.

### 13.4.3 Archaeological Heritage

#### **World Heritage Sites**

Although not formally recognised in Irish legislation, impacts on World Heritage Sites will nonetheless be a material consideration for developments in their wider vicinity.

There are no UNESCO World Heritage Site or Candidate Sites within 5km of the study area. The nearest WHS is Brú na Bóinne – the Archaeological Ensemble of the Bend of the Boyne which is located roughly 36 km to the east. The nearest site listed as Tentative is Tara, located 31 km to the south.

#### **National Monuments**

On a national level, the highest degree of protection granted to archaeological monuments are those afforded National Monument status which are protected under the National Monuments Act of 1930 and its various amendments. These are the pre-eminent archaeological sites in Ireland. These sites are either in State ownership or guardianship or are the subject to preservation orders and include walled towns. Generally National Monuments in state care are numbered amongst the best preserved and most impressive monuments in the country

There is one National Monument site located roughly 1 km south of the subject site – the sandstone high crosses at Castlekeeran (National Monument Number 107, SMR number ME016-006 and related sub numbers). These sites are described in section 3.3.3 below. Two national monuments are in Kells – the Round Tower and High Crosses (National Monument Number 158; ME017-044013-) and the small, double vaulted church or oratory known as St Columb’s House or St Columcille’s House, dated c. AD 1100 (National Monument Number 108; ME017-044011-). In addition, the medieval walled town and town defenses are ‘monuments’ as defined in the National Monuments Acts 1930-2004 and are protected under the provisions of this legislation.

There are no sites subject to preservation orders or walled towns within 2km of the subject area.

#### **Record of Monuments and Places (RMP), Archaeological Survey Database (ASD)**

The legislation that affords protection to the archaeology of Ireland has seen several amendments since the first National Monuments Act of 1930 and there is a legacy of several different registers and associated terminology. The following sections contain information relative to the Register of Historic Monuments (RHM), the Record of Monuments and Places (RMP) and the Archaeological Survey Database (ASD).

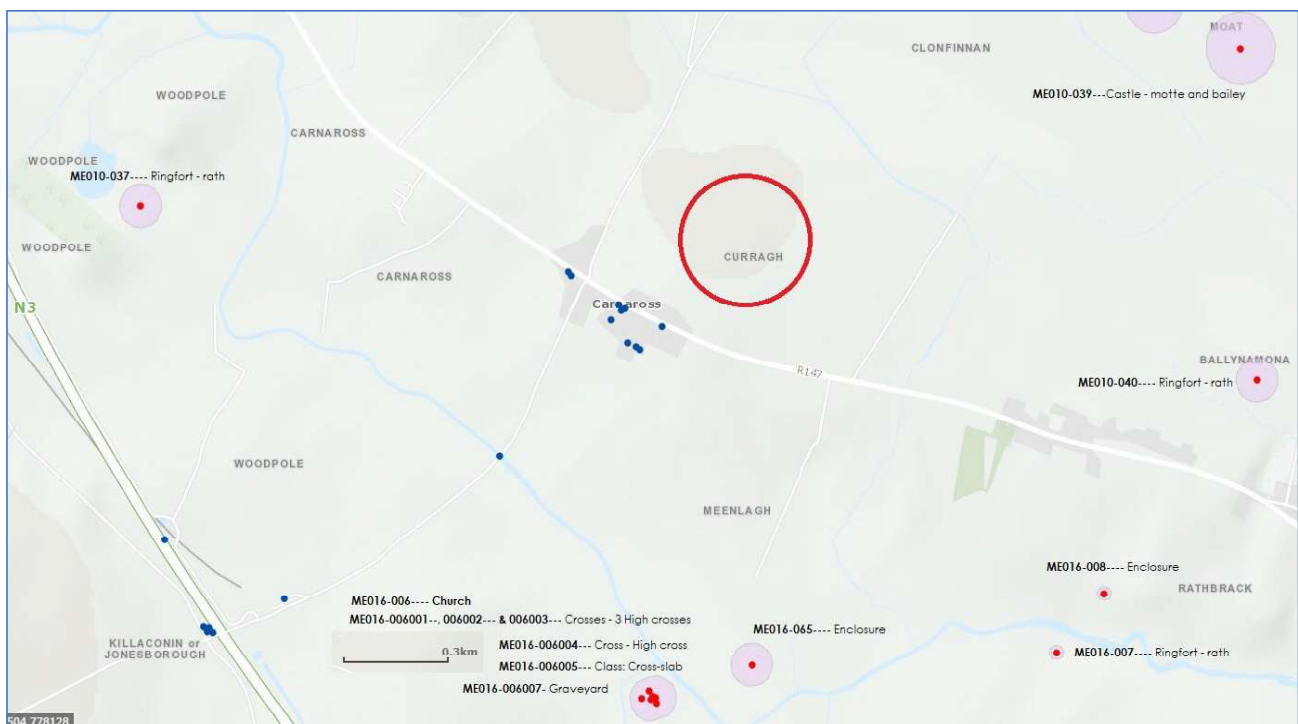
Sites that are not in state care are listed in the Record of Monuments and Places. This inventory consists of nationwide set of 6” maps with an accompanying index which shows all the sites, monuments, and zones of archaeological potential, recorded to date. The inventory concentrates on pre-1700 AD sites. Monuments and places included in the record are protected as follows:

“When the owner or occupier (not being the commissioners) of a monument or place which have been recorded under subsection (1) of this section or any person proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such monument or place, he shall give notice in writing of his proposal to carry out the work to the Commissioners, commence the work for a period of two months after having given the notice”.

The most up-to-date record of archaeological monuments, the Archaeological Survey of Ireland (ASI), is available for viewing and download on the [www.archaeology.ie](http://www.archaeology.ie) website. This record is continually revised and indicates a number of additional sites that do not feature on the printed maps.

A search indicates that there no recorded monuments within 1 km of the subject site. There are several recorded archaeological sites within 2 km of the subject site. These are listed below in **Figure 13.2**. Sites ME016 006001---, ME016---, 006002---, ME016-006003--- and ME016-006004--- are in the Guardianship of the State and are accorded National Monument status (National Monument Number 107)

Figure 13.2 Extract from ASD map showing local archaeological resource.



**ME010-037----**

Class: Ringfort - rath

Townland: WOODPOLE

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Situated in a col between slightly higher ground c. 100m to the N and c. 50m to the SW with lower ground to the NW and SE. It is depicted as a small, embanked enclosure (ext. diam. c. 30m) on the 1836 edition of the OS 6-inch map and as a D-shaped hachured feature (dims c. 45m N-S; c. 25m E-W) truncated by a N-S field bank at E on the 1912 edition of the OS 6-inch map. It was recorded in 1968 (SMR file) as a subcircular overgrown area (dims c. 30m N-S; c. 23m E-W) defined by a scarp (at W: Wth 1.8m; H 0.5m). The visible monument had been removed by 2000 (OSAP).

**ME010-039----**

Class: Castle - motte and bailey

Townland: MOAT (Kells Upper By.)

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Situated on a slight rise in a level landscape. The motte is a circular flat-topped and grass-covered earthen mound (diam. of top 5m; diam. of base 39m NNE-SSW; H 4.5m at S) defined by fosse (at NNE: Wth of top 10m; ext. D 0.5m) SSW-N-E and with a subrectangular, grass-covered bailey (dims 40m NNE-SSW; 40m WNW-ESE) defined by a fosse or scarp (at SSW: Wth 5m; H 0.8m) attached E-SSW. There is an entrance (Wth 6.5m) to the bailey at the SE corner.

**ME010-040----**

Class: Ringfort - rath

Townland: BALLYNAMONA (Kells Upper By.)

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Located in a low-lying and fairly level landscape. This feature is not depicted on any map. The cropmark of a circular enclosure (diam. c. 30-35m) defined by a single fosse feature with an entrance gap at S is visible on an oblique aerial photograph (CUCAP: AYS, 37), but it has not become visible on other aerial images.

**ME016-008----**

Class: Enclosure

Townland: RATHBRACK (Kells Upper By., Dulane Par.)

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Situated at the S edge of a plain and overlooking the N bank of a W-E section of the River Blackwater, with the stream c. 55m to the S. It is depicted as a rectangular embanked enclosure (ext. dims c. 35m NNE-SSW; c. 25-30m) with some bushes only on the 1836 edition of the OS 6-inch map where it is described as a 'Fort'. It was visible in 1969 as a rectangular area (dims 29.5m N-S; 18m E-W) defined by a low earthen bank (at E: Wth of base c. 5m). It could be a moated site, although it is not visible on any available aerial images.

**ME016-007----**

Class: Ringfort - rath

Townland: CASTLEPOLE

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Located at the N edge of a plain and on the S bank of a W-E section of the Blackwater River, with the stream c. 40m to the N. This is an oval grass-covered area (dims 42m WNW-ESE: 33m; NNE-SSW) defined by an earthen bank (at SSW: Wth of base 9m; int. H 0.8m; ext. H 1.2m) and hedge, with an outer fosse (at SSW: Wth of top 10m; Wth of base 2m; ext. D 0.4m) SSE-W. The bank is reduced to a scarp (at NNW: Wth 6m; H 2.8m) and hedge NW-E that melds into the natural slope at N. The original entrance (Wth of base 1.3m) is at E.

**ME016-065----**

Class: Enclosure

Townland: MEENLAGH

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Located on a slight rise on the NW bank of the NW-SE River Blackwater, at a point where it changes direction from NW-SE to WSW-ENE. The stream is c. 110-135m distant SE-WSW and it is also just across the river from the early church site of Castlekeeran (ME016-006----). The parchmark in grass of a circular area (int. diam. c. 53m E-W; c. 50m N-S) defined by what is probably a continuous fosse (Wth c. m) is visible on Apple Maps (2018). It is also less clearly visible on OSI images (1995) and Google Earth (02/07/2018), and it was first reported by Jean Charles Caillere.

**ME016-006----**

Class: Church

Townland: CASTLEKEERAN

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Ciarán of Castlekeeran, then known as Bealach Dúin – pass of the fort – was descended from the Fiacha Araidhe of NE Ulster, and his death is recorded in 775. Very little is known of his life, although it is thought that he wrote about St. Patrick, and his feastday is

14 June (Ó Rian 2011, 168-9). The deaths of some abbots of Disert Chiarain are recorded, including Siadhál (855), Consudh (868) and Dubhthach (961). The monastery was plundered by Godfrey, son of Sitric, and the Dublin Vikings in 949, together with other monasteries, and in 1170 Diarmuid Mac Murrough attacked it. It soon became a dependency of the Crutched Friars of St. John the Baptist at Kells (O'Connell 1957, 19) as a parish church, and it is listed amongst its possessions at the Suppression in 1540 (White 1943, 265). Although it is not mentioned by Ussher (1622) (Erlington 1847-64, 1, lxxxvii-xc), according to Dopping's Visitation (1682-5) the church of Tristlekieran was ruined 'since time out of mind', although it was enclosed (Ellison 1973, 9).

It is located in the shallow valley of the NW-SE River Blackwater, originally called Sele (O'Connell 1957, 17), with the stream c. 50m to the NE. The grass-grown remains of a structure (ext. dims 14.5m E-W; 7.5m N-S) are in a rectangular graveyard (dims c. 65m E-W; c. 45m N-S) defined by earthen banks and hedges. Three sandstone high crosses that are rather plain apart from roll mouldings, the base of another, a cross-slab and an ogham stone are displayed in the graveyard.

The large sandstone cross-slab has a cross with expanded terminals defined by two incised double-lines within a frame (ibid. 25). The ogham stone (H c. 0.6m) was unearthed in the graveyard in 1898 and it is set up incorrectly with the top below. It is just N of the church remains and has been read as: COVAGNI MAGI MUCOI LUGUNI (O'Connell 1957, 26; Macalister 1945, vol. 1, 46). However, a more recent interpretation (Herity and Newman Maguire 2012) has identified further letters and provides the reading: T\_COVAGNI MAQI MUCOI LUGUNI ITI, which they translate as: 'Of Thy Cuan son of the sons of Luigne'.

The north cross (H 2.62m; Wth 1.1m) is ringed and has a shaft (0.53m x 0.47m) on a pyramidal base (dims at base 1.04m x 1m; H 0.75m). There is interlace at the ends of the arms and on the E face of the ring. The south cross (H 2.97m; Wth 1.3m) has a shaft (0.49m x 0.37m) on a base (dims at base 1.27m x 0.87m; H c. 0.9m). One end panel, a boss and part of the ring is decorated with interlace. The west cross (H 2.08m) has a broken S arm and the shaft (dims 0.37m x 0.24m) is on a plain base (dims at base 0.91m x 0.75m; H c. 0.56m). The cross is completely undecorated. (Harbison 1992, vol. 1, 41-2).

### **ME016-006001-**

Class: Cross - High cross

Townland: CASTLEKEERAN

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Three sandstone high crosses that are rather plain apart from roll mouldings, the base of another, a cross-slab and an ogham stone are displayed in the graveyard (ME016-006007-) of the early monastery of Disert Chiaran (ME016-006----) (O'Connell 1957). The north cross (H 2.62m; Wth 1.1m) is ringed and has a shaft (0.53m x 0.47m) on a pyramidal base (dims at base 1.04m x 1m; H 0.75m). There is interlace at the ends of the arms and on the E face of the ring. (Harbison 1992, vol. 1, 41-2).

**ME016-006002-**

Class: Cross - High cross

Townland: CASTLEKEERAN

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Three sandstone high crosses that are rather plain apart from roll mouldings, the base of another, a cross-slab and an ogham stone are displayed in the graveyard (ME016-006007-) of the early monastery of Disert Chiaran (ME016-006----) (O'Connell 1957). The south cross (H 2.97m; Wth 1.3m) has a shaft (0.49m x 0.37m) on a base (dims at base 1.27m x 0.87m; H c. 0.9m). One end panel, a boss and part of the ring is decorated with interlace. (Harbison 1992, 42)

**ME016-006003-**

Class: Cross - High cross

Townland: CASTLEKEERAN

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Three sandstone high crosses that are rather plain apart from roll mouldings, the base of another, a cross-slab and an ogham stone are displayed in the graveyard (ME016-006007-) of the early monastery of Disert Chiaran (ME016-006----) (O'Connell 1957). The west cross (H 2.08m) has a broken S arm and the shaft (dims 0.37m x 0.24m) is on a plain base (dims at base 0.91m x 0.75m; H c. 0.56m). The cross is completely undecorated (Harbison 1992, vol. 1, 42).

**ME016-006004-**

Class: Cross - High cross

Townland: CASTLEKEERAN

Scheduled for inclusion in the next revision of the RMP: Yes

Description: The base of a high cross is within the graveyard (ME016-006007-) at the site of the early monastery of Disert Chiarin (ME016-006----) (O'Connell 1957, 24).

**ME016-006005-**

Class: Cross-slab

Townland: CASTLEKEERAN

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Within the graveyard (ME016-006007-) of Disert Chiaran church site (ME016-006----). A large sandstone cross-slab has a cross with expanded terminals defined by two

incised double-lines within an incised frame (O'Connell 1957, 25). One end of the slab is missing (max. surviving H 1.27m; Wth 0.55-0.61m; T 6-7cm).

### **ME016-006007-**

Class: Graveyard

Townland: CASTLEKEERAN

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Situated in the valley of the NW-SE River Blackwater with the NW-SE stream c. 50m to the NE. An early monastery (ME016-006----) was plundered by Vikings in AD 949 and by Dermot MacMurrough in 1170. The grass-grown remains of a structure (ext. dims 14.5m E-W; 7.5m N-S) are in a rectangular graveyard (dims c. 65m E-W; c. 45m N-S) defined by earthen banks and hedges. Three high crosses, the base of another, a cross slab and an ogham stone are displayed in the graveyard. (Harbison 1970, 180-1).

### **ME016-006006-**

Class: Ogham stone

Townland: CASTLEKEERAN

Scheduled for inclusion in the next revision of the RMP: Yes

Description: An ogham stone (H c. 0.6m) was unearthed in the graveyard (ME016-006007-) of the early monastery of Disert Chiarain (ME016-006----) in 1898 and it is set up incorrectly with the top below. It is just N of the church remains and has been read as: COVAGNI MAGI MUCOI LUGUNI (O'Connell 1957, 26; Macalister 1945, vol. 1, 46). However, a more recent interpretation (Heery and Newman Maguire 2012) has identified further letters and provides the reading: T\_COVAGNI MAQI MUCOI LUGUNI ITI, and they suggest that the person commemorated is Segéne of Clara whose death is recorded in the Annals of Tigernach in 784.

### **Topographical Files of the National Museum of Ireland**

The topographical files of the NMI identify all recorded finds held in the NMI archive that have been donated to the state in accordance with national monuments legislation. A review of [www.heritagemaps.ie](http://www.heritagemaps.ie) was completed.

There are no recorded finds within 1 km of the scheme area. The nearest find spots are at Cornasaus townland roughly 1.4 km north of the subject site, where a copper sestertius of Nero (ref: 2009:19) was found and a Human Skeleton (ref: 1988:189) at Drumbarragh 2.9 km to the south.

### **Toponym Analysis**

Townland names are a rich source of information for the land use, history, archaeology, and folklore of an area. The placename can have a variety of language origins such as, Irish, Viking, Anglo-Norman and English. The names can provide information on families, topographical features, and historical incidents. In terms of the built environment many names

reference churches, fords, castles, raths, graveyards, roads and passes etc. In compiling the following data, a number of resources were consulted including the Placenames Database of Ireland [www.logainm.ie](http://www.logainm.ie) and Irish Names of Places by P.W. Joyce (Joyce, 1913).

**Table 13.2 Townland Names**

Townland Name/ Name	Irish Genitive	Translation
Curragh	<i>An Currach</i>	Meaning 'Marsh'.
Carnaross	<i>Charn na Ros</i>	<i>Carn</i> meaning cairn, pile of rocks and <i>ros</i> meaning (wooded) height; wood; promontory

### **Previous Archaeological Fieldwork**

The Excavation Bulletin is both a published annual directory and an online database that provides summary accounts of all the excavations carried out in Ireland and Northern Ireland from 1970 to 2012. The database gives access to almost 15,000 reports and can be browsed or searched using multiple fields, including Year, County, Site Name, Site Type, Grid Reference, Licence No., Sites and Monuments Record No. and Author. In general, the database contains information on sites for which final excavation reports have been received. There are numerous records relating to construction of the nearby M3 Clonee to North of Kells motorway scheme in recent years. The three nearest excavated sites are listed below.

**Licence number:** A043/007; E3641

**County:** Meath

**Site name:** Woodpole

**Sites and Monuments Record No.:** N/A

**Author:** Stuart Rathbone, Archaeological Consultancy Services Ltd.

**Site type:** Burnt-mound activity

**ITM:** E 667598m, N 778229m.

Test-trenching was undertaken in the area of a proposed borrow pit in the townland of Woodpole, Co. Meath, adjacent to the M3 Clonee to North of Kells motorway scheme. Twenty trenches were excavated over two fields at 20m intervals, and 10m intervals where archaeological features were discovered, with a combined length of 1507m. Three features of archaeological interest were discovered: a spread of burnt-mound material (8m diameter by 0.2m depth), a pit (1.1m diameter) and a gully (10m by 0.3m by 0.07m) filled with burnt-mound material. A large area inside the extraction zone was stripped of topsoil in this corner in order to clarify whether further associated features were present. None were exposed. The archaeological deposits were covered and preserved in situ and the borrow pit limited in size to avoid the archaeological material.

**Licence number:** A043/006; E3640

**County:** Meath Site name: Woodpole

**Sites and Monuments Record No.:** N/A

**Author:** Stuart Rathbone, Archaeological Consultancy Services Ltd, Unit 21, Boyne Business Park, Greenhills, Drogheda.

**Site type:** No archaeological significance

**ITM:** E 667417m, N 778425m

Test-trenching was undertaken in the area of a proposed borrow pit in the townland of Woodpole, Co. Meath, adjacent to the M3 Clonee to North of Kells motorway scheme. Twelve trenches were excavated over two fields at 20m intervals with a combined length of 929m. Nothing of archaeological significance was discovered.

**Licence number:** A030/015; E3177

**County:** Meath Site name: Castlekeeran 2

**Author:** Stuart Reilly, Gahan & Long Ltd, 7–9 Castlereagh St, Belfast, BT5 4NE for Archaeological Consultancy Services Ltd, 21 Boyne Business Park, Greenhills,

**Site type:** Possible cremation pit, pits

**ITM:** E 668626m, N 776849m

This site was located within Contract 5 (Kells–North of Kells) of the proposed M3 Clonee to North of Kells motorway, was identified during testing by Gillian McLoughlin of IAC in 2004 (Excavations 2004, No. 1200, 04E1056) and was excavated in April 2007. A possible cremation pit (0.23m diameter by 0.07m depth) was identified alongside a further seven pits and spreads of charcoal-rich hillwash. The area had been disturbed by quarrying which had occurred previously. Cremated bone, animal bone and slag were recovered from the excavations.

### **Cartographic Research**

Analysis of historic mapping shows how the landscape has changed over time. The comparison of editions of historic maps can show how some landscape features have been created, altered or removed over a period of time. Sometimes features that appear on these early maps are found to be of potential archaeological significance during fieldwork.

Historical maps were consulted to assess the historic landscape since the 19th century. The following maps were consulted: First Edition 6-inch maps prepared for the study area were published in 1836, based on surveys undertaken in 1834. Second Edition 25-inch maps, dating from the late 19th and early 20th century.

The subject site comprises enclosed farmland throughout this period. No structures or identifiable features were noted. No potential unlisted archaeological sites were identified from the analysis of historic maps.

### **Aerial Photography**

The usefulness of aerial photography is that it allows for a different perspective, 'the distant view'. Archaeological sites may show up on the ground surface, depending on their state of preservation, by light and shadow contrasts (shadow marks), tonal differences in the soil (soil marks) or differences in height and colour of the cultivated cereal (crop marks). It is also a useful aid in pinpointing existing features and can assist in ascertaining their extent and degree of preservation.

A review of aerial photography was undertaken to identify previously unrecorded archaeological or architectural heritage sites, structures, monuments, or features that may be affected by the proposed development. Sources reviewed included aerial photography on the Heritage Map viewer ([www.heritagemaps.ie](http://www.heritagemaps.ie)), Bing, and Google platforms.

No previously unknown cultural heritage sites or aerial anomalies were identified.

### **13.4.4 Architectural Heritage**

#### **Architectural Conservation Areas**

The Planning and Development Act 2000, as amended, provides that all Development Plans must now include objectives for preserving the character of Architectural Conservation Areas (ACAs). An ACA is a place, area, group of structures or townscape of special architectural, historical, archaeological, artistic, cultural, scientific, social, or technical interest, or which contribute to the appreciation of protected structures. In these areas, the protection of the architectural heritage is best achieved by controlling and guiding change on a wider scale than the individual structure, to retain the overall architectural or historic character of an area.

There are no ACAs in the vicinity.

#### **Record of Protected Structures (RPS) & National Inventory of Architectural Heritage (NIAH)**

The importance of our built heritage is enshrined in the Planning and Development Act, 2000 (Part II, Section 10) which places a statutory obligation on local authorities to include in their Development Plans objectives for the protection of structures, or parts of structures, which are of special interest. The principal mechanism for the protection of these structures is through their inclusion on the Record of Protected Structures (RPS). This list provides recognition of the structure's importance, protection from adverse impacts and potential access to grant aid for conservation works. The record of Protected Structures is an ongoing process and can be reviewed and added to. In considering additions to the Record of Protected Structures local authorities have recourse to the National Inventory of Architectural Heritage (NIAH) which provides a source of guidance on the significance of buildings in their respective areas.

The NIAH County surveys, established on a statutory basis under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999 provides an index of structures deemed to be of architectural, historical, archaeological, artistic, cultural, social, scientific, or technical interest. The NIAH inventory also provides valuable information to local authorities on the rich heritage of the country's demesnes, parks, gardens, and designed landscapes. The results of the NIAH surveys are available on the [www.buildingsofireland.ie](http://www.buildingsofireland.ie) website. Each entry comprises a site description and appraisal providing a qualitative account of why the building is an important part of Irish architectural heritage justifying its inclusion. The inventory also rates the structures on a scale ranging from local, regional, national to international.

There is a considerable degree of overlap between the RPS, and the NIAH sites as evidenced in the following entry.

Relevant sites in the vicinity are listed in **Table 13.3** below.

**Table 13.3 List of Protected Structures/NIAH sites in the vicinity**

RPS	Townland	Structure Name	Building Type	Description	NIAH
90327	POTTLEREAGH	Virginia Road Station	Warehouse	Detached gable-fronted former railway warehouse, built c.1840, now disused. Snecked stone walls with ashlar limestone quoins. Red brick dressings to segmental-arched opening. Replacement corrugated-iron roof.	14401003
90328	POTTLEREAGH	Virginia Road Station	Railway Station	Detached five-bay single- and two-storey over basement former railway station, built c.1850, now disused.	14401002
90329	POTTLEREAGH	Post Box	Post Box	Cast-iron post box, c.1905, set in rubble stone wall with crown and E R VII insignia.	14401004
90330	POTTLEREAGH	Bridge	Bridge (railway)	Single-arch rock-faced limestone railway bridge with brick dressings to the arch, built c.1850. The bridge carries the road over the former railway track which is now disused.	14401001
90331	CARNAROS	Bridge	Bridge (road)	Triple-arch Road bridge-built c.1760. Rubble limestone walls with roughly dressed limestone voussoirs and cast-iron tie-plates. Triangular	14307007

				cutwaters to upstream elevation. Terminating arch to the south-west now disused.	
90332	RATHINREE LOWER	Cherrymount	Country House	Detached five-bay two-storey house, built c.1740, with two-stage castellated tower to north-west corner. Dower house to Kingsfort. Incl Out buildings.	14401005
90333	CARNAROS	Houses	House	One of a pair of semi-detached three-bay single-storey houses, built c.1879, now vacant. Rubble limestone walls with dressed limestone quoins and angled brick eaves course.	14307005
90334	CARNAROS	Houses	House	One of a pair of semi-detached three-bay single-storey houses, built c.1879, now vacant. Rubble limestone walls with dressed limestone quoins and angled brick eaves course.	14307005
90335	CARNAROS	Forge	Forge	Detached gable-fronted single-storey forge, built 1871Horseshoe-shaped opening with battened timber door.	14307004
90336	MEENLAGH	Saint Kieran's Roman Catholic Church	RC Church	Detached cruciform-plan Roman Catholic Church, built 1825. Freestanding cast-iron belfry with cast-iron bell to east	14307003
90337	MEENLAGH	Water Pump	Water Pump	Cast-iron water pump, erected c.1870, with banded shaft, having finial and fluting to cap, and with curved pumping arm. Set within recessed rendered walls with wrought-iron gate.	14307002
90338	MEENLAGH	Carnaross Parochial House	Parochial House	Detached three-bay two-storey parochial house, built c.1880. Rendered walls. Hipped tile roof with cast-iron rainwater goods and rendered chimneystacks	14307001

### **Designed Landscapes-Demesnes, Historic Gardens & Country Estates**

The Architectural Section of the DHLGH is in the process of a multi-phase study looking at Designed Landscapes and Historic Gardens that appear as shaded areas on the First Edition Ordnance Survey Maps, circa. 1830.

'The objective of this survey is to begin a process of understanding of the extent of Ireland's historic gardens and designed landscape. Sites were identified using the 1st edition Ordnance Survey maps. These were compared with current aerial photography to assess the level of survival and change.'

This data has been digitised from the [www.buildingsofireland.ie](http://www.buildingsofireland.ie) website along with a Statement of Condition regarding the integrity of each historic garden and designed landscape based on the Phase 1 and 2 assessments. The NIAH inventory classifies historic gardens and designed landscapes into five possible options referred to as a 'Statement of Condition'. This statement provides a general overview of a sites status but as noted in their Project Methodology the findings are 'not an indication of a site's heritage importance and should not be used to justify statements about the site's importance or merit'.

The nearest Designed Landscapes-Demesnes, Historic Gardens or Country Estates is Lennoxbrook House and Demesne, located roughly 500m to the southeast of the subject site.

**Garden Survey Site ID:** 5107

**Name and Location:** Lennoxbrook, Upper Kells, Loughan or Castlekeeran, Meenlagh.

Principle buildings, Parkland and Formal Garden survive.

## 13.5 Likely Significant Effects

### 13.5.1 Potential Direct Impacts

Potential construction impacts may be direct, physical impacts on known and previously unrecorded archaeological, architectural, or cultural heritage sites, structures, monuments, or features. In relation to the proposed development, direct, physical impacts on the archaeological, architectural, and cultural heritage can manifest themselves in the following ways:

- Where an archaeological, architectural, or cultural heritage site, structure, monument or feature is located within an area where works takes place and the works either intentionally or unintentionally entail the alteration or removal of all or part of the site, structure, monument or feature a direct, physical impact will occur.
- Direct, physical impacts can also occur in gaining access to the site. Where archaeological, architectural, or cultural heritage sites, structures, monuments, or features are intentionally or unintentionally removed or altered when transporting and/or facilitating access for machinery, equipment and/or materials to or from site a direct physical impact will occur; and
- There is the potential for direct, physical impacts on previously unrecorded archaeological and architectural sites, structures, monuments, or features.

If these impacts cannot be remediated, for example if archaeological deposits are destroyed during excavations, then the impacts will be permanent.

#### **Potential direct Impacts on Recorded Archaeological Monuments**

There is one National Monument site located roughly 1 km south of the subject site – the sandstone high crosses at Castlekeeran (National Monument Number 107, SMR number ME016-006 and related sub numbers). There are no recorded monuments within 1 km of the subject site. The proposed development will not directly impact on the site of any recorded archaeological monuments.

#### **Potential direct Impacts on unrecorded Archaeological Monuments**

The potential for direct impacts on previously unrecorded archaeological material was assessed as low to moderate.

#### **Potential direct Impacts Architectural Sites**

There are a number of protected structures and NIAH sites in nearby Carnaross village. There will be no direct impacts on any of the architectural sites in the vicinity.

#### **Potential direct Impacts on Unrecorded Architectural Features**

There were no previously unrecorded features of architectural significance noted during fieldwork. There are no predicted impacts on previously unrecorded features of architectural heritage importance.

### **Operational Phase**

There are no predicted impacts on the local archaeological or architectural resource that will arise during the operational phase of the proposed development.

### **'Do Nothing scenario'**

In this instance, there would be no impact on any potential unrecorded sub surface deposits.

### **13.5.2 Potential Impacts on setting**

Impacts on setting can be reduced with sensitive site development and screening. The impact of the development is usually proportional to the extent to which that development is visible to and from the recorded monuments and features.

### **Archaeology Sites**

There are no previously recorded archaeological monuments located within the visual zone of influence of the proposed development. The subject site is well screened by intervening hedgerow and trees, and at a distance from the National Monument at Castlekeeran (National Monument Number 107, SMR number ME016-006 and related sub numbers).

### **Architectural Sites**

There are several protected structures, most of which are also recorded on the NIAH within the vicinity of the subject site. For the most part these sites are well screened by intervening buildings etc. The subject site is located on a north facing slope to the rear of a low hill. The proposed development will not impact the visual amenity of any of these structures or other vernacular features.

### 13.6 Mitigation Measures

The works do not intersect with the 'zone of notification' for any recorded monument/s and will not directly impact any architectural heritage sites.

Nonetheless, given the results of recent work on the M3/N3 Clonee to North of Kells Road to the south of the subject site and the concentration of archaeological monuments in the surrounding area it is recommended that a programme of archaeological testing be carried out at the subject site in advance of works proceeding. Best practice in areas of moderate archaeological potential demands caution, to ensure that archaeological deposits are identified as early as possible, thereby ensuring that any loss from the archaeological record is minimised.

During archaeological testing a suitably qualified archaeologist will supervise excavations of pre-determined trenches undertaken with a toothless grading bucket, under licence to the National Monuments Service of the DHLGH. Undertaking this confirmatory surveying in advance will ensure that sufficient time can be allowed within the construction schedule for the excavation of any archaeological deposits discovered.

Should archaeological material be uncovered during this testing, the feature will be troweled back to determine its form, age, nature and extent then photographed and recorded to best professional standards and adhering to the Department's Policy and Guidelines on Archaeological Excavation (1999). Based on information gathered from archaeological testing, and in consultation with the National Museum and the National Monuments Section of the DCHG, further mitigation such as excavation may be required.

**The above recommendations are subject to the approval of the relevant authorities.**

### 13.7 Cumulative Impact

Within the European Commission - Guidelines for the Assessment of Indirect and Cumulative effects as well as Impact Interactions, dated May 1999, cumulative effects are described as "effects" that result from incremental changes caused by other development, plans or projects together with the proposed development or developments".

The cumulative effects of the proposed construction and operation of a biogas facility near Carnaross with other developments in the area is reviewed in this section with specific regard to the Archaeology and Cultural Heritage. The project will have no cumulative impact to other sites in the region from an Archaeology and Cultural Heritage perspective. Any potential impacts can be managed using the mitigation measures discussed in **Section 13.5**.

### 13.8 Residual Impacts

According to Environmental Protection Agency guidelines, Residual Impact is described as 'the degree of environmental change that will occur after the proposed mitigation measures have taken place.' The mitigation strategy above recommends actions which can be taken to reduce or offset the scale, significance, and duration of the effects on the surrounding Archaeology and Cultural Heritage.

The purpose of this assessment is to specify mitigation measures where appropriate to minimise the 'risk factor' to all aspects of the Archaeology and Cultural Heritage environment such as to minimise the potential for significant effects to Archaeology and Cultural Heritage and reduce the risk of damage, loss, etc. This 'risk factor' is reduced or offset by recommending the implementation of a mitigation strategy in each area of the study. On the implementation of this mitigation strategy, the potential for impact will be lessened.

A site-specific Construction Environmental Management Plan (CEMP) will be devised and implemented throughout the duration of the construction phase. This document will contain all the necessary procedures required to prevent and minimise any environmental risks posed by the project on the surrounding environment.

#### 13.8.1 Construction Phase .

The overall impact anticipated by the construction phase of the project following the implementation of suitable mitigation measures is considered to be negative but not significant.

#### 13.8.2 Operational Phase

The overall impact anticipated by the operational phase of the project following the implementation of suitable mitigation measures is considered to be negligible.

### 13.9 Monitoring

The Construction Environmental Management Plan (CEMP), Environmental Operating Plan (EOP) and the Industrial Emissions Licence (IEL) will include provision for the monitoring of construction related activities.

The site will be subject to annual inspection by the Environmental Protection Agency who will critically assess the site's compliance with the conditions of its IEL.

### 13.10 Summary of Significant Effects

The receptors for this assessment are considered to be local Archaeology and Cultural Heritage sites and monuments. Whilst the development proposals have the potential to cause effects to other sensitive receptors identified there are no Archaeology and Cultural Heritage sites within the immediate site boundaries, however the recommended mitigation measures will ensure that the risk of any potential effects are reduced to negligible.

### 13.11 Statement of Significance

The significance of Archaeology and Cultural Heritage have been assessed. Where a potential impact has been identified, the significance of impact upon these receptors ranges from minor to moderate.

Where a potential impact has been identified, mitigation measures have been provided which if implemented reduces the impact of significance to 'negligible'. The mitigation steps are presented in **Section 13.5** of this chapter.