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SECTION C – ARCHAEOLOGICAL, ARCHITECTURAL AND CULTURAL HERITAGE

This section of the EIAR examines the impacts of the proposed development, comprising of the refurbishment and extension of the existing abattoir on the site, at Meenwaun/Boheradurrow, Banagher, Co. Offaly on archaeology, architecture and cultural heritage.

Archeologically important sites, buildings of historic, artistic or architectural interest and sites of cultural heritage form part of the landscape of County Offaly. As part of the scope and examination of alternatives phases of this development, every effort has been made to avoid known Archaeological, Architectural and Cultural Heritage sites.

This section of the Environmental Impact Assessment Report examines the impacts of the development on known sites (which could not be avoided) or potential sites which have come to light during the field survey of the proposed development.

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12.0 ARCHAEOLOGICAL, ARCHITECTURAL AND CULTURAL HERITAGE

12.1 INTRODUCTION

This chapter of the Environmental Impact Assessment Report (EIAR) assesses the archaeological, architectural and cultural heritage effects of the proposal to extend an existing abattoir, with associated development, in Meenwaun and Boheradurrow townlands, Banagher, Co. Offaly.

The purpose of the chapter is to provide an archaeological, architectural and cultural heritage assessment of the receiving environment, to identify the likely and significant effects on the receiving environment and to propose ameliorative measures to mitigate these effects.

The assessment has been carried out by Edel Barry MPhil, Marion Sutton MSc and Seán Shanahan MSc MIAI MIASP, of Shanarc Archaeology Ltd, on behalf of Banagher Chilling Limited and Panther Solutions Ltd., in support of a planning application to Offaly County Council.

12.1.1 DEFINITION OF ARCHAEOLOGICAL, ARCHITECTURAL AND CULTURAL HERITAGE

The term 'cultural heritage' is broadly used to describe any combination of archaeological, architectural and cultural heritage features.

- Archaeological heritage comprises objects, monuments, buildings or landscapes that generally pre-date AD1700.
- Architectural heritage, also referred to as built heritage, comprises structures, buildings, their settings and contents that generally post-date AD1700.
- Cultural heritage also comprises less tangible aspects of heritage such as folklore and cultural associations.

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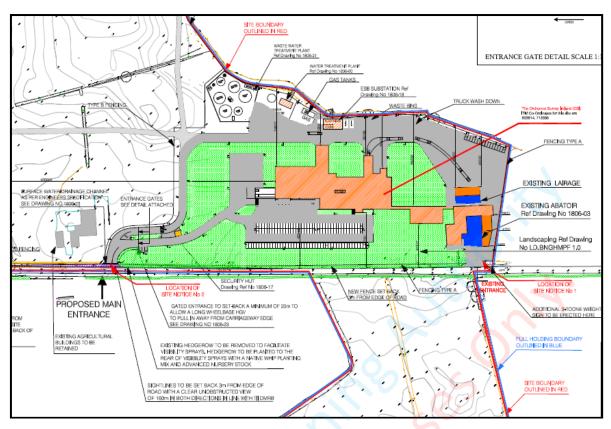


Figure 12.1: Plan of proposed abattoir extension, with associated development

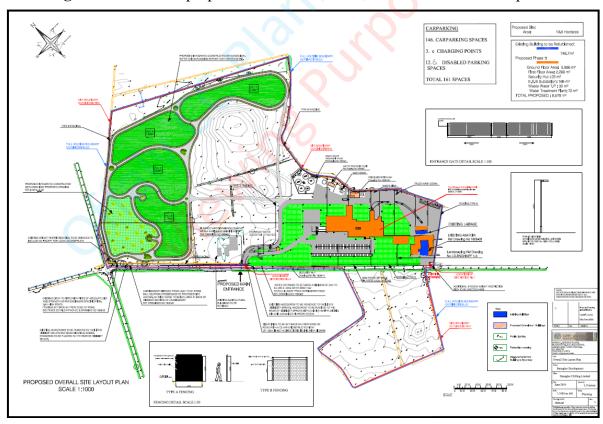


Figure 12.2: Proposed overall site layout plan showing location of abattoir extension relative to integrated constructed wetlands

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12.2 LEGISLATIVE FRAMEWORK AND PLANNING POLICY

12.2.1 LEGISLATIVE CONTEXT

Ireland has ratified several international and European conventions on the protection of cultural heritage, principally:

- UNESCO World Heritage Convention 1972;
- Charter for the Conservation and Restoration of Monuments ad Sites (Venice) 1964;
- European Convention on the Protection of the Archaeological Heritage (Valetta Convention) 1992;
- European Convention on the Protection of the Architectural Heritage (Grenada Convention) 1985;
- European Council Directive on Environmental Impact Assessment (85/337/EEC) 1985, amended by Directive (97/11/EC) 1997, Directive (2003/35/EC) 2003, Directive (2011/92/EU) 2011, amended by Directive (2014/52/EU) 2014.

National legislation protecting cultural heritage sites comprises:

- National Monuments Act 1930, amended 1954, 1987, 1994 and 2004;
- Heritage Act 1995;
- Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999; and
- Planning and Development Acts 2000 2014.

The following standards and guidelines were also consulted as part of this assessment:

- Frameworks and Principles for the Protection of the Archaeological Heritage (1999), Department of Arts, Heritage, Gaeltacht & the Islands;
- Policy and Guidelines on Archaeological Excavation (1999), Department of Arts, Heritage, Gaeltacht & the Islands;
- The Heritage Council, 2000. Archaeology & Development: Guidelines for Good Practice for Developers (2000), The Heritage Council;
- Guidance on the preparation of the EIA Report, 2017, European Commission;
- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018;
- Guidelines on the information to be contained in Environmental Impact Assessment Reports (Draft) (August 2017), Environmental Protection Agency;
- Advice notes on current practice in the preparation of Environmental Impact Statements (2003), Environmental Protection Agency;
- Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Scheme (2005), National Roads Authority; and

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• Guidelines for the Assessment of Architectural Heritage Impacts of National Roads Schemes (2005), National Roads Authority.

12.2.2 PLANNING POLICIES

The Offaly County Development Plan 2014-2020 contains a number of policies of relevance to archaeological and architectural heritage. The relevant policies in respect of this assessment are, as follows:

- **AAHP-04** It is council policy to apply the following principles to the archaeological heritage:
 - To facilitate appropriate guidance in relation to the protection of the county's archaeological heritage.
 - To promote public awareness of the rich archaeological heritage in this area.
 - To protect and enhance archaeological monuments and their settings and Zones of Archaeological potential.
- **AAHP-07** It is policy of the Council to promote awareness of, and access to, the archaeological inheritance of Offaly.
- **AAHP-08** It is Council policy to ensure that development in the immediate vicinity of a recorded monument is sensitively sited and designed so that it does not significantly detract from the monument. Where upstanding remains exist, a visual impact assessment may be required.
- AAHP-09 It is Council policy to inform and seek guidance from the National Museum of Ireland if an unrecorded archaeological object is discovered, or the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht in the case of the discovery of an unrecorded archaeological site, in accordance with National Monuments legislation.
- AAHP-10 It is Council policy to ensure that full consideration is given to the protection of archaeological heritage when undertaking, approving or authorising development in order to avoid unnecessary conflict between development and the protection of the archaeological heritage.
- AAHP-11 It is Council policy to ensure that all development proposals affecting sites specified in the Record of Monuments and Places or Zones of Archaeological Potential are referred to in the prescribed bodies (as set out in the Planning and Development Act 2000, as amended) and to have regard to the advice and recommendations of the prescribed bodies in relation to undertaking, approving or authorising development.
- **AAHP-12** It is Council Policy to ensure that when an unrecorded archaeological object or site is discovered, any works that threaten the object or site are immediately suspended and that the appropriate Government agency is informed.
- AAHP-17 It is Council Policy to protect archaeological sites and monuments, underwater archaeology, and archaeological objects, which are listed in the Record of Monuments and Places, and to seek their preservation *in-situ* (or at a minimum, preservation by record) through the planning process. It is Council policy to seek to protect important archaeological landscapes from inappropriate development.

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12.3 METHODOLOGY

The assessment of archaeological, architectural, and cultural heritage effects was based on a desk study of relevant archaeological, architectural and cultural heritage sources, supported by a field inspection. The following were the principal desk-based sources consulted:

National Monuments

Under the National Monuments Act 1930 - 2004, archaeological sites in the ownership or guardianship of the State or a local Authority and sites under Preservation Orders are designated as National Monuments. Such sites are offered the highest level of protection under Irish legislation.

Record of Monuments & Places and Sites & Monuments Record

The Record of Monuments and Places (RMP) was established under Section 12 of the 1994 National Monuments (Amendment) Act. The statutory RMP is a list of archaeological monuments known to the National Monuments Service, and is based on the earlier Sites and Monuments Record (SMR) files housed at the National Monuments Service. The record is updated on a constant basis.

Topographical Files

The topographical files of the National Museum of Ireland (NMI) are the national archive of all known antiquities recorded by the NMI. These files relate primarily to artefacts but also include references to monuments and contain a unique archive of records of previous excavations. The NMI's files present a catalogue of objects reported to the institution from 1928-95. The find-spots of artefacts can be an important indication of the archaeological potential of an area.

Archaeological Inventory of County Offaly

The Archaeological Survey of Ireland was initiated after the National Monuments Act 1930 and remains ongoing. The inventory for Co. Offaly was compiled by Caimin O'Brien and P. David Sweetman and was published by the Dublin Stationery Office in 1997.

Offaly County Development Plan 2014-2020

Each City and County Development Plan is compiled in accordance with the requirements of the Planning and Development Act 2000 (as amended) and contains lists of national monuments, recorded monuments, a Record of Protected Structures (a list of buildings which cannot be materially altered or demolished without grant of permission under the Act) and Conservation Areas and Architectural Conservation Areas (to protect and enhance the special character of an area). Local Area Plans (LAPs) compiled under the City/County Development Plan are also consulted.

Offaly Heritage Plan 2017-2021

The fourth Heritage Plan for County Offaly, guiding the work of the Offaly Heritage Forum and Heritage Office, was adopted at the March 2017 meeting for Offaly County Council.

National Inventory of Architectural Heritage

The National Inventory of Architectural Heritage (NIAH) is an ongoing survey within the Department of Culture, Heritage and the Gaeltacht. The work of the NIAH involves identifying and recording the architectural heritage of Ireland, from AD1700 to the present day and includes country houses, churches, mills, bridges and other structures of note. The

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NIAH survey of County Offaly was carried out in 2004 and is a representative sample of the post-1700 architectural heritage of the county.

Documentary Sources

Documentary sources are a valuable means of completing the written archaeological, architectural and cultural heritage record of an area, and of gaining insight into the history of the receiving environment. A list of all consulted documentary sources is provided in bibliographic form.

Cartographic Sources

Information gathered from cartographic sources is fundamental to the identification of archaeological and architectural heritage sites and demesne landscapes, which are often now located from cartographic records alone. For example, the earliest Ordnance Survey maps date to the late 1830s and 1840s, but much change has occurred in the use and treatment of the landscape in the intervening years, particularly during the second half of the 20th century.

Toponomy Sources

A townland name may preserve information relating to its archaeology, history, folklore, ownership, topography or land use. Most placenames were anglicised by the Ordnance Survey, which begun in the 1830's. Despite some inaccuracies in translation, the Gaelic, Viking, Anglo-Norman and English origins of placenames are generally recognisable. The Placenames Database of Ireland website (wwww.logainm.ie) hosts online bi-lingual placename research and archival records for townlands.

Previous Archaeological Investigations

The Excavations Bulletin is a published annual directory and an on-line database (www.excavations.ie) that provides summary accounts of all the excavations carried out in Ireland – north and south – from 1969 to 2018. The on-line database has been compiled from the published Excavations Bulletins from the years 1970-2010, with additional online-only material from 2011 onwards. The database provides access to summary descriptions of almost 24,000 reports.

12.4 DESCRIPTION OF EXISTING ENVIRONMENT

12.4.1 SITE DESCRIPTION

The 19.6 hectare site at the centre of this impact assessment is rural and predominantly agricultural in nature, with a large harvested bog to the immediate north and plantation forest to the immediate south. It is located approximately 2.4km southeast of Banagher, and is accessed via the L3010, a local road linking to the R438. The latter connects to the N65 21.5km to the southwest and the N62 7km to the northeast (Figure 12.3). An existing abattoir facility is situated to the southeast corner of the site, in Meenwaun townland, directly east of the townland boundary between Meenwaun and Boheradurrow. An established farmyard complex is situated within the site, to the northwest of the existing abattoir facility. The location of the farmyard has been occupied from at least the early 19th century.

The bulk of the 19.6 hectare site comprises farmed pasture, sited in Boheradurrow townland, bounded to the west by the Feeghroe Stream, and generally by mature hedgerows containing mature native trees on all other sides. The site straddles the L3010 local road, incorporating

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two fields on the south side of the road. Hedgerow field boundaries follow approximately straight lines, with the exception of the hedgerow on the northeast boundary, which functions as the townland boundary between Boheradurrow and Clongawny Beg. This boundary has a noticeably tortuous profile.

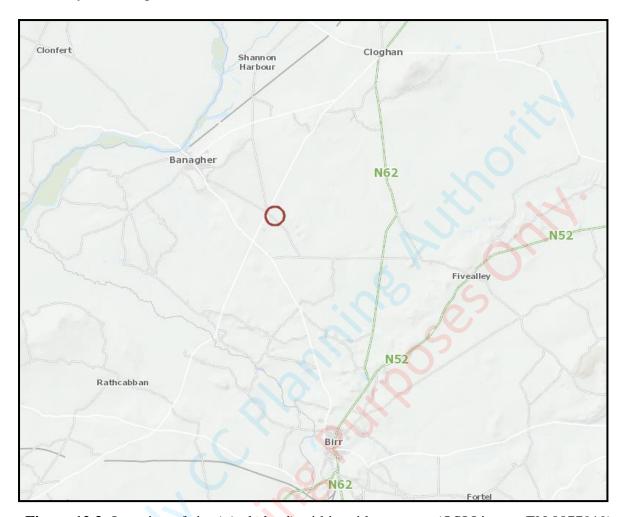


Figure 12.3: Location of site (*circled* red) within wider context (OSI Licence EN 0077919)

12.4.2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Introduction

Archaeological evidence from the wider vicinity indicates that there has been sporadic settlement activity in this area since the prehistoric period, with continuing intermittent settlement in the early medieval and medieval periods. It is likely that Banagher would have been attractive through time as a fording point on the River Shannon, using the ridge of higher ground to approach from the southeast, but it was not until the 17th century that Banagher became a centre of population.

The River Shannon is the major waterway and artery throughout the centre of Ireland and is used for communication, transport, trade, food, water and defence purposes. There is evidence of man's intervention on the river from the Mesolithic period onwards, with records of the presence of fish traps, fording points and implements from this era.

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The ford at Keelogue and Meelick (south of Banagher) was the main passage from County Galway providing access into northern County Clare and counties Tipperary and Offaly. Hence, the ford of Keelogue, which was the shallowest point in the river, was the principal point of communication for territories that aligned the River Shannon. The presence and recovery of prehistoric finds including stone axes, bronze swords and spears indicates that this ford has been in use since the Neolithic period onwards.

Prehistoric Period (7000BC-500AD)

The Mesolithic settlement at Lough Boora lies approximately 13km east-northeast of the proposed development site. One of the earliest known settlements in Ireland, dating from 7000-6500 BC, it was located on the former lake shore at pre-peat levels, and subsequently inundated. The site was discovered when Lough Boora was drained, and it was excavated in 1977 by Michael Ryan, revealing a fossil shore of an early lake, which was bigger than the modern one. A settlement or hunting camp was discovered on what would have been a peninsula jutting out into the earlier lake. Hearths containing animal bone were found, along with a very large quantity of stone tools. Tools were being manufactures at the site from chert, and included a large number of microliths, blades, cores, a small number of poorly made scrapers and ground pebble axes.

A burnt mound (OF029-027) situated in the townland of Kylebeg or Banagher was excavated in 2006 (Licence No. 06E0301). The mound, composed largely of fire-cracked limestone, overlain by a layer of soot and thirteen spreads of ash, was positioned on a steep slope, and covered ten pits or troughs, largely circular in plan and concave in profile. The soot and ash layers were identified as evidence of fires associated with vegetation clearance to facilitate the construction of the road and field boundary which truncate the site.

A number of toghers¹ have been identified to the northeast of the proposed development site (OF030-070 to -079), indicating traffic across the bog. Two of these wooden trackways are of Mid-Bronze Age date (OF030-076: 1734-1440 cal. BC and OF030-079: 1734-1449 cal. BC). The Late Bronze Age Dowris Hoard, an exceptional hoard of bronze objects that gave its name to the final phase of the Late Bronze Age, was recovered from a bog c.5km east of the proposed development site. The hoard contained 218 objects, including swords, spearheads, gouges, knives, razors, cauldrons, buckets, horns and crotals. The Banagher Hoard also dates to this period, and is likely to have been found in Meenwaun townland (Fehily Timoney & Co. 2015, 14). The hoard comprised a bronze pennanular bracelet, a gold dress fastner, two solid bronze rings and 125 amber beads. The presence of jewellery in hoards such as these is a good indication of the wealth of the period. The find spot for this was recorded as 'near Banagher, Kings County' in the files of the National Museum, but recent research has shown that it is likely to have come from Meenwaun townland.

Further evidence of prehistoric activity is represented by a ring barrow (OF030-012) and a mound (OF030-014), 3.7km and 3.9km south-southwest respectively, of the proposed development site. An enclosure (OF030-002), identified as a cropmark, approximately 53m east of the proposed development site may also be of prehistoric date. A further seven enclosures located within a 5km radius of the proposed development site may date from the prehistoric period onwards.

¹ Toghers comprise a short stretch of peatland trackway, constructed of wood, up to 15m in length with a discernible orientation, laid down to cross a small area of bog. These may date from the Neolithic (*c*.4000-2400 BC) to the medieval period (5th-16th centuries AD).

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Historic Period (500AD onwards)

Early Medieval Period (c.500AD-1100AD)

Much of the archaeological evidence in the wider area dates to the early medieval period. The Barony of Garrycastle is situated in what was the territory of the *Delbna Ethra MacCochláín*, a branch of the *Deabhna* tribe claiming descent from the Dál gCais (Duffy 1997, 31).

Seven ringforts are located in close proximity to the proposed development site, including a possible ringfort (OF030-003) situated approximately 2km to the southeast. Ringforts are the most numerous and widely distributed monuments in the Irish landscape. These enclosed medieval homesteads generally date from *c*.500-1200AD.

The shaft of a high cross of 9th century date (OF021-0030040-) was removed from the grounds of a late medieval church to the southeast of Banagher, and is indicative of the foundation of an Early Christian settlement at the site. A possible holy well (OF021-003005), which later became the town well, was also located on the site. Another ecclesiastical foundation at Garrycastle (OF029-015), a short distance to the southwest, is associated with a holy tree, holy wells, and a former ecclesiastical enclosure. The numerous wells are described on the first edition Ordnance Survey map as 'All Saints' Well', 'Lady's Well' and 'Eye Wells or Tobernasool'. There are the ruins of two buildings at the site thought to date to the 17th/18th century, but there is a suggestion that one of the buildings may be more ancient and it is possible that there may have been an earlier foundation on the site. While it is possible that these churches may be early medieval in date, neither of the sites have an association with a saint's name. However, O'Donovan describes in the Ordnance Survey letters that a patron was held at this church site on SS. Peter and Paul's day, and on the Sunday previous to the 1st of August. This practice was discontinued around 1835.

Approximately 4.16km northeast of the proposed development site is an ecclesiastical complex comprising a church, graveyard, bullaun stone and holy well (OF022-02001, -02002, -021, -022), which may be of early medieval date.

While Mid-Bronze Age dates have been returned for two toghers in the bog to the northeast of the Meenwaun Windfarm, to the east of the proposed development site, it is possible that some of the other toghers identified could date to the early medieval or medieval periods. With two ecclesiastical sites located on the northeast and southwest fringes of the bog it is possible that there could have been routeways across the bog connecting the two sites.

Medieval Period to Late Medieval (c.1100AD-1650AD)

The Anglo-Norman invasion from 1169AD had a huge impact on the landscape of the region. In the following centuries, castles were built at Garrycastle (OF029-006001), located 1.6km to the southwest, and at Streamstown (OF022-019), 2.64km to the northwest. Classified as tower houses, such defended residences of the rural gentry generally date from the fifteenth to seventeenth centuries. They are usually rectangular in plan, several stories in height and contain a number of defensive features, including wall-walks, at floor level, and murder holes.

In the thirteenth century, Richard Tuite is thought to have built an Anglo-Norman castle on what later became the site of Fort Falkland.

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Garrycastle tower house (OF029-006001-), from which the barony derives its name, is situated a short distance southwest of the proposed development site. It comprised a roughly coursed limestone rubble four storey tower, of which the north wall and part of the west wall remain, having a bartizan with a Sheela-na-gig (OF029-0060040-), a mural passage at first floor level, a pair of garderobes, and evidence of a destroyed fireplace. A bawn wall (OF029-006002-) is attached to the tower house via a circular tower at the west side, and runs south from the tower. It originally would have returned to rejoin the tower house at the east. A larger bawn that remains extant is part of a building phase that comprised a fortified house in the 16th/17th century.

In the mid-16th century, Banagher (*Beannchor*) was in the possession of the native Irish, and its ownership was contested between the families of the MacCoghlans, the O'Maddens and the O'Carrolls. The MacCoghlans had built numerous castles in what is now west Offaly, due to strategic requirements to protect their large territory (Loeber 2001, 307). The O'Maddens, whose territory included land on both sides of the river and thus required them to secure fording points over the Shannon, built castles at Meelick and Banagher, the strategic importance of which were confirmed by the government later seizing them (*ibid*, 210). The MacCoghlans also built castles at Banagher and Raghra, despite not having territory west of the Shannon (*ibid*). Feilim MacCoghlan was slain in 1540 by the O'Maddens, and Teige Caech O'Carroll rebuilt the castle in 1544 in a bid to claim the settlement (AFM AD 1455, AD1489). There is a 16th century graveslab located inside the church in Banagher (OF021-003003) dedicated to John Coghlan, who died in 1590.

A market was granted to Sir John MacCoghlan, chief of Delvin in 1610.

The construction of Fort Falkland (OF021-003007-) by Sir Arthur Blundell in 1624 marked the commencement of the establishment of a plantation town. The fort may have been built on the site of the 16th century Banagher Castle, and was probably reinforced in the Commonwealth era (Hartnett McEnery 2006, 19). A linear earthwork (OF021-003008-), with a projecting bulwark to the northeast corner was constructed to defend the town on three sides.

By 1628, Banagher had received a charter that established it as a borough town with rights to a weekly market and two annual fairs.

Early Modern Period (c.1650AD-c.1850AD)

The bridge crossing the Shannon (OF021-003009) is recorded by 1690. The site of a 17th century Huguenot glassworks (OF029-024) is recorded in Glaster townland, representing early industry in the wider area of the proposed development site.

A Martello tower located on the Galway side of the River Shannon at Banagher (GA109-010) was strategically sited to protect the river crossing at Banagher and is known as Cromwell's Castle. Built in the mid-17th century, it was later converted for use as a battery and formed part of the late 18th and early 19th century defences to guard against the threat of Napoleonic invasion. There are also two batteries or artillery fortifications dated to the 18th century, one on each side of the River Shannon (OF021-002; GA109-014).

The town of Banagher is associated with Charlotte Bronte, who spent her 1854 honeymoon at Cuba Court (OF021-008--), an early 18th century house then in use as a Royal School, under

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the headmastership of Reverend Alan Bell, the uncle of Bronte's husband, Arthur Bell Nicholl. Bell Nicholl returned to live at Banagher following Charlotte's death in 1855. Cuba Court was built to designs by Sir Edward Lovett Pearce.

Garrycastle House (NIAH Ref. 14929004) was built within the bawn of Garrycastle tower house, in c.1740.

Lewis (1837) describes Banagher Bridge as being 'one of the oldest across the Shannon: it consists of several small arches with projecting piers, and is very narrow and inconvenient, but of great strength and solidity'. A canal with a swing-bridge had been constructed on the Galway side of the bridge, as its arches were too small to allow navigation. The streets of the town, he notes, were 'Macadamised'. The present Shannon Bridge dates from the 1840s and was built on the site of its predecessor.

12.4.3 CARTOGRAPHIC ANALYSIS

Analysis of historic mapping shows how landscapes evolve. Comparing successive historic maps can show how archaeological and architectural sites have been created, altered or removed over a period of time. A wide range of historic maps was consulted, a full list of which is provided in the bibliography. Relevant extracts are presented from the following historic maps:

- Down Survey map of Co. Offaly (Kings County), 1656-58 (Figure 12.4);
- Down Survey map of Barony of Garricastle, 1655 (Figure 12.5);
- Taylor & Skinner's Map 87, 1777 (Figure 12.6);
- First edition Ordnance Survey 6" map, 1837-43 (Figure 12.7); and
- Revised Ordnance Survey 25" map, 1912 (Figure 12.8)

Sir William Petty's Down Survey map of County Offaly (then *King's County*) (Figure 12.4) and map of the barony of Garricastle (Figure 12.5) illustrate a settlement at *Bannahar*, the later including a detailed depiction of its fort. *Garrie Caftle* is depicted on the former map, and the townland of *Garricaftle* on the latter map, with a large house likely to correspond with the castle, bawn and fortified house still present on that site (OF029-006). The area containing the proposed development site is situated within land marked '*Red bog belonging to ye forfeited Lands in Garricaffle*'. '*Fortefacla*' is marked on the barony map, possibly in reference to Fort Falkland.

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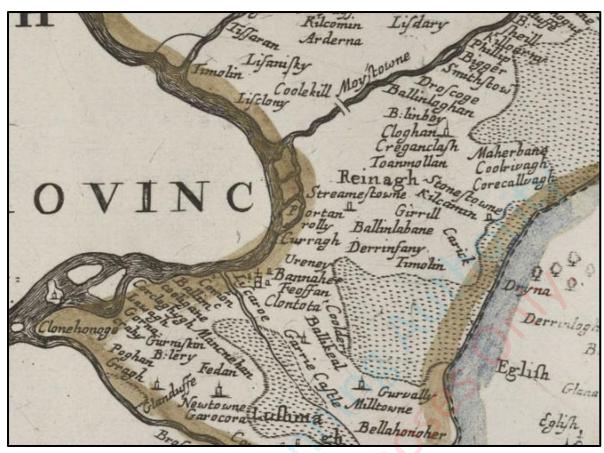


Figure 12.4: Down Survey map of County Offaly (King's County)



Figure 12.5: Down Survey map of Barony of Garricastle

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Taylor & Skinner's 1777 Map of the 'Road from Dublin to Galway and Ouchterard by Banagher and from Dublin to Birr by Frankford' depicts a sizeable settlement at Banagher, as well as a number of country seats to the south, including 'Garry' (property of 'McCoglan Esq.') and Cubo (that of 'Fraser Esq.') (Figure 13.6). The area of bogland that lies north of the proposed development site is also shown.

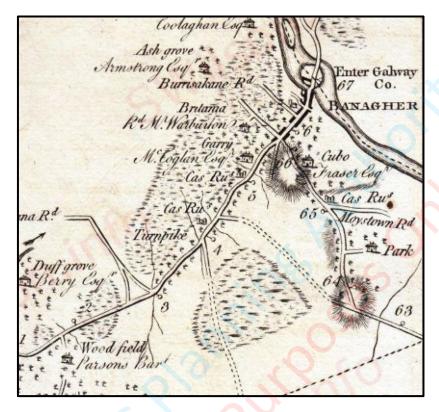


Figure 12.6: Taylor & Skinner's 1777 Map 87

On the first edition 6-inch Ordnance Survey map (1837-43) much of the landscape around the proposed development site is shown divided into small to medium sized fields on the edge of bogland (Figure 12.7). The proposed development site on the north side of the local road is divided into three large fields, on the edge of bogland, with smaller fields to the southeast, straddling Meenwaun and Boheradurrow. On the south side of the local road, one field has been reclaimed from the adjacent bog. Two buildings, with associated yards, small adjacent field and laneway are depicted on the site of the present farmyard in Boheradurrow, within the proposed development site.

The land to the north of the proposed development site, within the townlands of Boheradurrow and the adjacent Ballyeighter, is predominantly bog, traversed by the Feeghroe Stream and several curving drains, including a linear feature marked 'canal', which runs through Boheradurrow in a northwest to southeast direction. Clongawney Beg townland, to the east, is mostly unenclosed.

There is little change to the landscape on the revised 25-inch Ordnance Survey map (Figure 12.8), with the exception of some field boundary and drainage changes, including the subdivision of land around the farm buildings fronting the local road in Boheradurrow. The two buildings at this site remain unaltered, and a well in annotated between the buildings and the road. The road network at the northwestern edge of the proposed development site, meeting on the Feeghroe Stream, is labelled 'Five Roads Cross.

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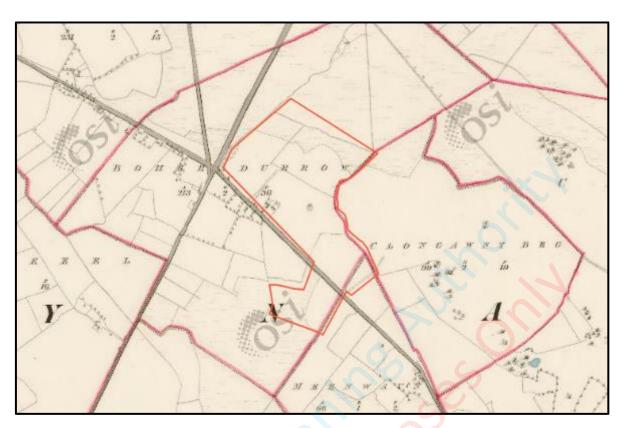


Figure 12.7: First edition 6-inch Ordnance Survey Map of Ireland (OSI Licence EN 0077919)

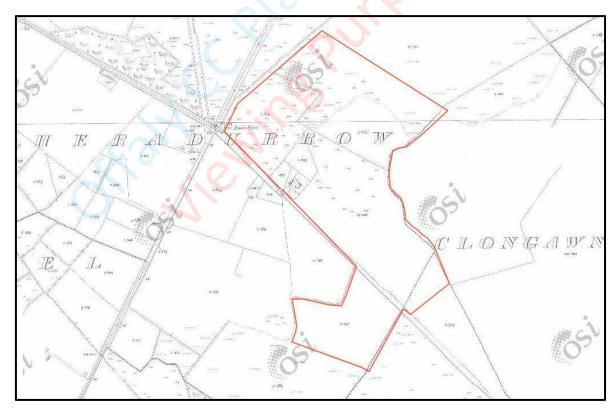


Figure 12.8: Revised 25-inch Ordnance Survey Map of Ireland, 1913 (OSI Licence EN 0077919)

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12.4.4 TOPONOMY

The townland name of Boheradurrow derives from *Bóthar an Doire*, the road of the oakwood. It has been mentioned under a range of spellings, from the first mention of *Bauraderry* in 1738 and *Bauradirra* in 1825, to *Boheradurrow* on the first and revised edition Ordnance Survey maps. It is situated in the civil parish of Reynagh, the Barony of Garrycastle and the county of Offaly (www.logainm.ie/en/41154).

A small area of the proposed development site to the southeast is contained within the townland of Meenwaun. Also situated within the parish of Reynagh and Barony of Garrycastle, this derives from *An Mhóin Bhán*, a white or grassy bogland. The earliest recorded reference to *Monewawn* is in the Registry of Deeds dating to 1805 and *Mín Bhán*, or *Meenwan* is first referenced in 1837 (https://www.logainm.ie/en/41526).

12.4.5 Previous Archaeological Investigations

A search of the online Excavations Bulletin for previous archaeological investigations in the proposed development area produced no results. Several investigations have taken place in the wider vicinity, with those that have been undertaken in the Banagher area summarised in Table 13.1.

Monitoring and testing carried out in advance of construction works at Meenwaun Windfarm (Excavation No. 2017:299, Licence No. 17E0026) to the east uncovered a Neolithic stone axe, two oval pits filled with burnt mound-like material, several stake-holes and spreads of burnt material. A radiocarbon date from one of the pits placed it within an Early Bronze Age context.

Monitoring of topsoil stripping was undertaken as part of ongoing restoration and extension of the Georgian dwelling-house situated inside the late medieval bawn of Garrycastle tower house (Excavation No. 1997:450). Two wall foundations were encountered on the south side of the dwelling-house, attributed to a demolished structure which abutted the south gable of the latter. A brick-arched doorway, now blocked, in the bawn wall immediately southeast of the house provided access to the structure. No deposits or features pre-dating the Georgian house were encountered.

Table 12.1: Previous excavations in the wider vicinity of the proposed development site

LICENCE No.	EXCAVATION No.	LOCATION	SITE TYPE	AUTHOR
-	1990:098	'Banagher Fort', Kylebeg or Banagher	Military Fort – post-medieval	Beth Cassidy
03E1538	2003:1524	Banagher, Offaly No archaeological significance		Brian O
03E1915	2003:1525	Cuba Avenue, Banagher, Offaly	No archaeological significance	Daniel Noonan
03E1541	2003:1526	Shannon Hotel, Banagher	No archaeological significance	Daniel Noonan
04E0854	2004:1379	Church Street, Banagher	Post-medieval pottery kiln	Kieran Campbell
-	1992:156	Harbour Street,	Plantation	Heather A.

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LICENCE No.	EXCAVATION No.	LOCATION	SITE TYPE	AUTHOR
		Banagher	town/early monastic site	King
05E0282	2005:1290	Kylebeg, Banagher	No archaeological significance	Ellen O'Carroll
05E1212	2005:1291	Main Street, Banagher	Urban post- medieval	Kieran Campbell
05E0559	2005:1292	The Marina, Banagher	Riverbank monitoring	Kieran Campbell
05D032, 05R036	2005:1293	River Shannon, Banagher	Riverine	Rex Bangerter
06E0301	2006:1685	Site 1, Inner Relief Road, Banagher	Burt mound and pits	Paul Stevens
06E0346	2006:1686	Main Street, Banagher	Urban post- medieval	Kieran Campbell
-	1994:195	Banagher	Urban	Heather A. King
07E0853	2007:1440	Banagher	Urban	Tamás Petérváry
07E0196	2007:1441	Harbour Road, Banagher	No archaeological significance	John Purcell
17E0023	2017:299	Meenwaun Windfarm	Meenwaun Windfarm Early Bronze Age pits and a stone axe	
97E0444	1997:441	Banagher	Monitoring of sewerage scheme	Jacinta Kiely
-	1997:450	Garrycastle	Archaeological complex	Dominic Delaney
97E0444 ext	1998:544	Banagher	Urban	Jacinta Kiely
98E0097	1998:545	Kylebeg, Banagher Seventeenth century and later military fortification		Jim Higgins
98E0301	1998:546	Main Street, Banagher	Urban	Martin Fitzpatrick.
01E0143	2001:1086	Main Street, Banagher	Urban	Billy Quinn
02E1867	2002:1553	Church Street, Banagher	No archaeological significance	Martin E Byrne
02E0250	2002:1552	Banagher	Urban	Stuart Elder

12.4.6 PREVIOUS ARCHAEOLOGICAL FINDS

While the topographical files of the National Museum of Ireland do not contain any records of stray finds for Boheradurrow townland, a number of redundant records in the Record of Monuments and Places indicate finds of worked wood previously recovered from Clongawny More (OF030-072 and OF030-078). Within the wider study area, objects recovered from a bog to the north comprise cut logs and a goblet (NMI 1980:124). A range of wooden objects were found in bogs 4-5km to the east, including the lid of a wooden vessel (NMI 1980:124),

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wooden objects (NMI 1977:2178-2181), a wooden stool and wooden beetle (NMI 1988:127-128) and two wooden boards (NMI 1998:128-129).

12.4.7 ARCHAEOLOGICAL HERITAGE

To follow is a schedule of recorded archaeological monuments, national monuments and areas of archaeological potential that were examined for a potential impact.

Record of Monuments and Places (RMP)

The Record of Monuments and Places lists 17 sites within a 2km radius of the proposed abattoir extension developments (Figure 12.9, Table 12.2). None of these monuments are located within the proposed development boundary, and none will be visually impacted by the proposal. One monument, an enclosure in the adjacent townland of Clongawny Beg (OF030-002-), is situated within 1km of the proposed development. This is known from cropmark evidence and is not visible at ground level.

Table 12.2: RMP sites in the wider vicinity of the proposed development site

RMP No.	SITE TYPE	TOWNLAND	ITM REFERENCE	PROX. (KM)
OF030-002	Enclosure	Clongawny Beg	604690, 713301	0.53
OF030-070	Road-class 3 togher	Clongawny	605270, 713860	1.27
OF030-071	Road-class 3 togher	Clongawny	605239, 713824	1.25
OF030-072	Redundant record	Clongawny	605158, 713674	1.05
OF030-073	Road-class 3 togher	Clongawny	605201, 713623	1.09
OF030-074	Road-class 3 togher	Clongawny	605322, 713663	1.21
OF030-075	Road-class 3 togher	Clongawny	605332, 713816	1.33
OF030-076	Road-class 3 togher	Clongawny	605392, 713889	1.31
OF030-077	Road-class 2 togher	Clongawny	605310, 713900	1.33
OF030-078	Redundant record	Clongawny	605426, 713978	1.47
OF030-079	Road-class 3 togher	Clongawny	605329, 713674	1.25
OF029-006004-	Sheela-na-gig	Garrycastle	602055, 713763	1.62
OF029-006001-	Castle-tower House	Garrycastle	602055, 713763	1.62
OF029-006002-	Bawn	Garrycastle	602055, 713763	1.62
OF029-006003-	Fortified House	Garrycastle	602055, 713763	1.62
OF029-015006-	Ritual Site-Holy Well	Garrycastle	602677, 711778	1.92
OF029-015007-	Ritual site–Holy Well	Garrycastle	602677, 711778	1.92

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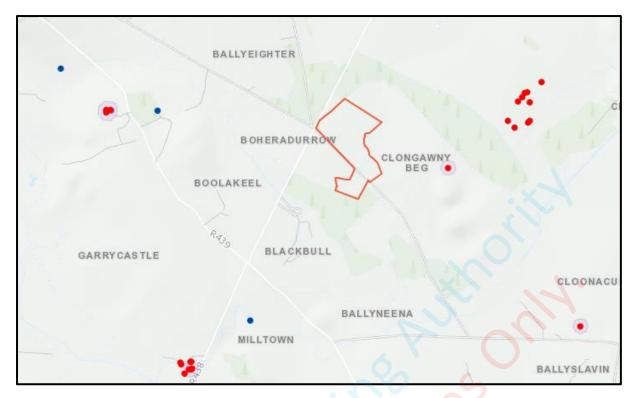


Figure 12.9: RMP sites (*red dots*) and NIAH heritage sites (*blue dots*) in relation to proposed development site (*outlined in red*)

<u>National Monuments</u>

There are no National Monuments in close proximity to the proposed development. The closest National Monument is Gallen Priory (OF014-029, NM 504), located approximately 13km to the northeast, and southeast of Ferbane. The proposal will have no effect on this site.

Areas of Archaeological Potential

The townland boundary between Boheradurrow and Clongawny Beg (to the east) forms the eastern boundary of the proposed development site. Additionally, part of the townland boundary between Boheradurrow and Meenwaun is included within the proposed development area to the southeast, bordering the west boundary of the existing abattoir facility.

An earth-cut ditch was noted marking the boundary between Boheradurrow and Clongawny Beg, while there is no surface trace of the townland boundary on the west of the existing abattoir facility. However, sub-surface traces of an earth-cut ditch, or similar earthwork marking this boundary, may survive. Townland boundaries are considered to be areas of Archaeological Potential (AP), as they may potentially preserve Gaelic *tuath* boundaries. A *tuath* was a basic territorial unit associated with kingship. Their boundaries cannot be related to modern political divisions making the identification of such early boundaries difficult.

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12.4.8 ARCHITECTURAL AND CULTURAL HERITAGE

Offaly County Development Plan 2014-2020

The Offaly County Development Plan 2014-2020, which provides a landuse plan and an overall strategy or the development of County Offaly over that period, was adopted on 15 September 2014.

It lists three protected structures within 2km of the proposed abattoir extension developments (Table 12.3):

Table 12.3: RPS sites in the vicinity of the proposed development site

RPS No.	Name	Address	PROXIMITY (KM)
39-39	Claremount House	Banagher, Birr	1.22
39-45	Garrycastle	Banagher, Birr	1.62
39-40	Castle Garden House	Banagher, Birr	2

The proposed abattoir extension developments are not located within an Architectural Conservation Area (ACA).

The Town Plan for Banagher, deemed a Local Service Town, contained within Offaly County Council Development Plan 2014-2020 Volume 2: Settlement Plans was also consulted for the purposes of this report.

It identified three areas of archaeological potential in the town of Banagher and in the immediate vicinity thereof (Figure 12.10). No areas of archaeological potential were identified within or in close proximity to the proposed development site.

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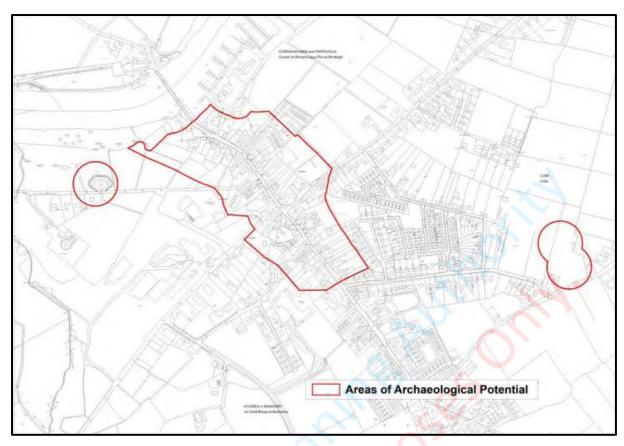


Figure 12.10: Areas of Archaeological Potential in Banagher area (After Banagher Town Plan, Map 8.1)

National Inventory of Architectural Heritage

The Building survey of the NIAH lists four entries within 2km of the proposed abattoir extension developments (Table 12.4), and lists a single entry in the Garden Survey (Table 12.5). The latter is a desk-based assessment of the condition and survival of the listed sites, based on aerial photography, and as such limited details are available.

Table 12.4: NIAH sites in the vicinity of the proposed development site

NIAH REG	Name	RATING	PROXIMITY (KM)
14929002	Claremont House	Regional	1.22
14930010	Milltown (Ga. By.)	Regional	1.43
14929004	Garrycastle	Regional	1.62
14929003	Castle Garden House	Regional	2

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Table 12.5: NIAH Garden Survey sites in the vicinity of the proposed development site

NIAH REG	PROPERTY	SITE CONDITION	PROXIMITY (KM)
OF-53-N- 024137	Claremount	Main features substantially present – peripheral features unrecognisable	1.38

The proposed development site is not situated within 500m of any of the above named sites and therefore, will have no direct impact on any Record of Protected Structures (RPS), National Inventory of Architectural Heritage (NIAH) sites or on any Architectural Conservation Areas (ACA). Similarly, no structures of architectural significance were identified during the field inspection or in the documentary, cartographic and aerial photographic sources.

The character of the surrounding built heritage landscape is rural, with fragmented remains of former demesnes surviving in places. Claremount House, which dates from c.1790 and is listed on the NIAH and RPS, is located 1.22km from the proposed development site.

12.4.9 FIELD INSPECTION

A visual inspection of the proposed development site was carried out by Edel Barry of Shanarc Archaeology Ltd. on 22 October 2018. The purpose of the inspection was to assess current and previous land use, access to the site, local topography and any additional environmental information relevant to the site's appraisal. The inspection also sought to identify and assess cultural heritage sites that might be subject to direct or indirect as a result of the proposal. Weather conditions were cool, clear and bright.

The area to the southeast of the proposed development site, upon which the existing abattoir facility is sited, is sub-triangular, fronting onto the L3010 to the southwest, and enclosed by mature hedgerows, as well as concrete post and wire fencing to the northwest boundary. This northwest boundary is the townland boundary between Boheradurrow and Meenwaun. Approximately 40% of the sub-triangular area (to the front) is occupied by concrete block and steel structures that make up the existing abattoir and concrete hardstanding areas. The ground to the rear thereof, is of relatively level topography, but very overgrown and interspersed with piles of demolition debris, predominantly rubble concrete and stone.

Field 1 to the northwest is sub-rectangular and of very gently undulating topography. It has been recently used for pasture and is enclosed by mature hedgerows and native trees. The boundary to the northeast is the townland boundary between Boheradurrow and Clongawny, and comprises a ditch of approximately 1.3m in width and 0.4m in depth, with a gently concave base. This widens to approximately 3m in width and 0.8m-1.10m in depth at the boundary with Field 2, and the boundary turns in a tortuous fashion in a northwesterly direction and then sharply in a northeasterly direction. In the northernmost corner of Field 1, there is a pile of concrete debris. A native hedgerow and a recent ditch form the northwest boundary of Field 1.

Field 2 is of level topography to the northwest and southeast boundaries, but to its centre and north the topography begins to slope upwards, becoming undulating and rising to a gentle

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height towards the north. It has also most recently been used as pasture and has a cover of fresh short grass.

Recent or younger hedgerows form field boundaries within the northernmost part of the proposed development site. The topography to the east of this area is undulating, with a long hillock to the northeast. Some bedrock protrudes through the soil incidentally. The soil in this area, in proximity to bog, is black and peaty, and some recent drains have been excavated. The pasture ground to the west of the farmyard fronting the L3010 is of level topography. Cabbages appear to have been sown in a field to the west of the site.

A roughly L-plan parcel of land of approximately 3.3ha to the south of the L3010 also forms part of the proposed development site. The southeastern field boundary thereof, forms the continuation of the townland boundary between Boheradurrow, to the northwest, and Meenwaun, to the southeast. A modern field drain, with native hedgerow, runs parallel to this boundary, down the centre of the field. Some demolition rubble (concrete and stone) is evident at the southwestern extent. This land has been in use as pasture, and is predominantly level, with a gentle rise to the southwest.

No features of archaeological, architectural or cultural heritage interest were noted during the site inspection.

A series of images depicting the application area is presented in Attachment 12.2.

12.5 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

A full description of the proposed abattoir extension, with associated development, is presented in Chapter 2 of this EIAR, and the plans and supporting documents included with the application should be read in conjunction with this chapter.

The proposed development comprises extensions to an existing abattoir facility, sited in Meenwaun townland, and the construction of a new meat processing factory to the west of the existing facility in greenfield, sited in Boheradurrow townland (Figure 12.1; 12.2). The new extensions will extend between the existing abattoir to the southeast and the existing farm buildings to the northwest. The development will include a staff carpark, service yards, new public road entrance, effluent treatment compound, water and gas storage tanks, truck wash bay, integrated constructed wetlands, security hut, water and effluent treatment buildings and all associated site works and landscaping.

It is proposed to widen part of the existing L3010, to construct the integrated wetlands to the northwest of the existing farm buildings, and to discharge final treated effluent to the Feeghroe Stream, on the western boundary of the proposed development site.

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12.5.1 INVENTORY OF ARCHAEOLOGICAL SITES AND AREAS OF ARCHAEOLOGICAL POTENTIAL



Figure 12.11: Location of archaeological site (A1, in red) and areas of archaeological potential (AP1, dotted orange line, AP2, dotted green line) in relation to proposed abattoir extension footprint (outlined in red)

The following inventory details all identified sites of heritage significance both within and in direct proximity to the proposed abattoir extension and associated developments. It consists of one archaeological site (A1) and two areas of archaeological potential (AP1 and AP2). Entries provide location information and a description of each site.

There are no protected structures, recorded in the NIAH, the RPS or otherwise within the proposed development site. Similarly, no structures of architectural or industrial heritage significance will be directly impacted, and no additional features of merits were identified during the field inspection or in the documentary or cartographic sources.

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A1	Figures 12.9, 12.11
TOWNLAND	Clongawny Beg
COUNTY	Offaly
GRID REFERENCE	604690,713301
IDENTIFICATION	Aerial Photography
SITE TYPE	Enclosure
SITE NAME	-
RMP Ref. NO.	OF030-002
REFERENCES	Archaeological Inventory of County Offaly'
	(Dublin: Stationery Office, 1997)
PROXIMITY	0.53km

DESCRIPTION: Not visible at ground level. Aerial photographs (GSI, N 163/4) show a cropmark of a possible circular enclosure. This limited description is derived from the published 'Archaeological Inventory of County Offaly' (Dublin: Stationery Office, 1997).

AP1	Figures 12.7, 12.8, 12.11
TOWNLAND	Boheradurrow, Clongawny Beg
COUNTY	Offaly
GRID REFERENCE	604022, 713556
IDENTIFICATION	Cartography, field inspection
SITE TYPE	Townland Boundary
SITE NAME	
RMP Ref. NO.	-
REFERENCES	-
PROXIMITY	Within

DESCRIPTION: The townland boundary between Boheradurrow and Clongawny Beg (both in the Civil Parish of Reynagh) runs along the northeast boundary of the site: it runs in a northwesterly direction before turning in a tortuous fashion first towards the north and then in a northeasterly direction.

AP2	Figures 12.7, 12.8, 12.11
TOWNLAND	Boheradurrow, Meenwaun
COUNTY	Offaly
GRID REFERENCE	604055, 713237
IDENTIFICATION	Cartography, field inspection
SITE TYPE	Townland Boundary
SITE NAME	-
RMP Ref. NO.	-
REFERENCES	-
PROXIMITY	Within

DESCRIPTION: The townland boundary between Boheradurrow and Meenwaun (both in the Civil Parish of Reynagh) runs southwest-northeast, dividing the site between the area currently occupied by the abattoir buildings to the southeast (in the townland of Meenwaun) and the farmland to be developed to the northwest (in the townland of Boheradurrow). There are no extant remains of a ditch or other boundary, with the division now partially marked by a recent concrete post and wire fence and partly by a hedgerow.

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12.6 POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT

12.6.1 CONSTRUCTION PHASE

12.6.1.1 Potential Direct Impacts

Following an assessment of readily available archaeological and architectural records, cartographic and documentary sources, and a visual inspection of the site, it is concluded that the proposed development will not directly impact any known Recorded Monuments, National Monuments, Protected Structures, or NIAH heritage sites.

The construction phase of the proposed development will have a likely direct and negative impact on two townland boundaries (AP1 and AP2), that between Boheradurrow and Clongawny Beg, and that between Boheradurrow and Meenwaun, which may preserve Gaelic *tuath* boundaries.

12.6.1.2 Potential Indirect Impacts

During construction, there are no anticipated potential indirect impacts on any architectural or cultural heritage features.

There is a potential indirect impact on a recorded monument (A1), a cropmark of a possible circular enclosure, which is situated 0.53km northeast of the proposed development site. This monument has not been investigated but there is a potential for hitherto unknown sub-surface remains to exist in the vicinity thereof, which would be negatively impacted by the excavation and construction work associated with the proposed abattoir extension.

12.6.2 OPERATIONAL PHASE

12.6.2.1 Potential Direct Impacts

It is anticipated that all archaeological heritage issues will be resolved to the satisfaction of the Department of Culture, Heritage and the Gaeltacht at the pre-construction phase of development and therefore, there will be no potential direct impacts at the operation stage of the development.

12.6.2.2 Potential Indirect Impacts

Potential indirect impacts in relation to the proposed development relate to its setting in the immediate and wider cultural and historic environment. Potential indirect impacts include an impact upon the setting of a monument or architectural structure or an impact that may detract from how the monument is appreciated and viewed within a given landscape. These impacts will exist for the lifetime of the development and will not cease after decommissioning, unless the buildings are demolished at that point. They are considered to be long-term but non-permanent in duration. The landscape and visual impacts associated with the proposed development are examined in the Chapter 7 Landscape and Visual, and should be read in conjunction with this chapter.

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12.6.3 CUMULATIVE IMPACT

The current assessment assesses the impact to archaeological, architectural and cultural heritage arising from the proposed development as a whole. No future phases are currently proposed and consequently it is not considered that any additional mitigation measures above those already provided are required.

12.6.4 "DO-NOTHING" IMPACT

There will be no adverse impact on archaeological, architectural and cultural heritage if the site is not developed. If the current buildings were to be reoccupied, there would be no change.

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 Table 12.6: Summary of Impacts

IMPACT PHASE	FEATURE/SITE/ STRUCTURE	Likelihood	Імраст	QUALITY	SIGNIFICANC E	EXTENT	DURATION	MITIGATION	RESIDUAL IMPACT*
	A1 Enclosure	Low Likelihood	Indirect (sub- surface remains)	Negative	Potentially significant	Local	Permanent	Pre-construction test trenching and construction phase monitoring	Significance of impact reduced to imperceptible
Construction	AP1 Possible townland boundary marker	High likelihood	Direct	Negative	Potentially significant	Local	Permanent	Pre-construction test trenching and construction phase monitoring	Significance of impact reduced to imperceptible
	AP2 Possible townland boundary marker	Low likelihood (due to no visible extant remains)	Direct	Negative	Moderate	Local	Permanent	Pre-construction test trenching and construction phase monitoring	Significance of impact reduced to imperceptible
ation	A1 Enclosure	Unlikely	Direct	Neutral	Imperceptible	Local	-	None proposed	No impact
Operation	AP1-2	Unlikely	Direct	Neutral	Imperceptible	Local	-	None proposed	No impact

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12.7 MITIGATION MEASURES

Mitigation measures, both at pre-construction, construction and operation phases, are required to be undertaken in compliance with national policy guidelines and statutory provisions for the protection of archaeological and architectural heritage, including the National Monuments Acts 1930-2004, the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999 and the Planning and Development Acts 2000 (as amended).

12.7.1 PRE-CONSTRUCTION PHASE

12.7.1.1 Avoidance of Impact

Avoidance of direct and indirect impacts upon all archaeological, architectural and cultural heritage sites is the preferred mitigation option with regards to the proposed abattoir extension and associated developments. As this is not always feasible, pre-construction and construction-phase recommendations are offered to provide ameliorative measures when avoidance and preservation *in situ* are not possible.

12.7.1.2 Archaeological Investigations

Groundworks associated with a development of this kind have the ability to uncover and disturb hitherto unrecorded sub-surface features, deposits, structures and finds of archaeological interest. Besides two historic townland boundaries (AP1 & AP2; Table 13.6), no known archaeologically significant sites or features are located within the proposed development site, and no new features of archaeological potential were noted from a study of cartographic and aerial photographic sources or during an on-site inspection.

However, there remains the possibility that subsurface archaeological features or material may exist within the proposed development area. The townland name, Boheradurrow, suggests the presence of a road, and numerous *togher* are recorded in bogland to the north and east of the proposed development site, including a large number in Clongawny More townland to the northeast. The site incorporates a watercourse, the Feeghroe Stream, and areas of higher ground that would have formerly overlooked bog, a combination of topographical features that may have been attractive to early settlers.

Due to the sub-surface archaeological potential, to the scale of the overall proposed development, and to the proliferation of monuments in the wider vicinity of the site, archaeological investigations in the form of targeted test trenching is recommended to assess the likelihood of archaeological remains at the site.

Archaeological investigations should be carried out under licence in accordance with Section 26 of the National Monuments Acts 1930 - 2014, and with a method statement agreed in advance with the National Monuments Service (Department of Culture, Heritage and the Gaeltacht) and the National Museum of Ireland. The results of this investigation will determine whether

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redesign to allow for preservation *in situ*, full archaeological excavation and/or monitoring are required. The investigation report will include mitigation proposals for dealing with the discovery of archaeological deposits and material during development at the site. This work should be conducted by a suitably qualified archaeologist.

It is envisaged that the following will apply:

- i. Should investigation yield evidence of archaeologically significant material or structures, preservation *in situ* may be recommended. Strategies for the *in situ* preservation of archaeological remains are conducted in consultation with the statutory authorities, and may include avoidance, if possible, of the remains during construction.
- ii. Should investigation yield evidence of archaeologically significant material or structures that cannot be preserved *in situ*, archaeological excavation and recording, to full resolution, is recommended.
- iii. Where less substantial archaeology is anticipated, it is proposed that groundworks are monitored by a suitably qualified archaeologist, with the provision for full excavation of any archaeologically significant material uncovered at this time (if an impact cannot be avoided) (see chapter 13.8.2.1 on Archaeological Monitoring below).
- iv. Should archaeological features or material be uncovered, adequate funds to cover excavation, fencing (if required), post-excavation analysis and reporting, and conservation work should be made available.

12.7.2 CONSTRUCTION PHASE

12.7.2.1 Archaeological Monitoring

Given the rich archaeological assemblage in the surrounding area, it is recommended that all groundworks for the proposed development be archaeologically monitored with provision made to deal with any archaeological features that may be uncovered. This will ensure the full recognition of, and proper excavation and recording of all archaeological features, finds and deposits that may be disturbed below the ground surface. Archaeological monitoring at the construction phase will be informed by the results of pre-construction archaeological investigations.

It is envisaged that the following will apply:

- i. In the event of archaeological features or material being uncovered during the construction phase, it is crucial that machine work cease in the immediate area to allow the archaeologist to assess, excavate and record any such material.
- ii. Should archaeological features or material be uncovered during the construction phase, adequate funds to cover excavation, fencing (if required), post-excavation analysis and reporting, and conservation work should be made available.
- iii. This work should be done under licence in accordance with Section 26 of the National Monuments Acts 1930 2014, and with a method statement agreed in advance with the

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National Monuments Service (Department of Arts, Heritage and the Gaeltacht) and the National Museum of Ireland.

The monitoring of groundworks reduces the level or significance of impact on the archaeological heritage within and in close proximity to the site from potentially significant and moderate to imperceptible.

12.7.3 OPERATIONAL PHASE

There are no direct physical archaeological, architectural and cultural heritage impacts to recorded heritage assets to be resolved at the operational phase of the development. Once the development has been completed, including the resolution of any archaeological material that may have been exposed, there is no need for further monitoring of the project.

12.8 RESIDUAL IMPACTS

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

12.9 DIFFICULTIES ENCOUNTERED IN COMPILING INFORMATION

No difficulties were encountered in compiling information for this report.

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