

14. Archaeological, Architectural and Cultural Heritage

14.1 Introduction

This chapter presents an evaluation of the potential effects of the proposed development on the archaeological, architectural and cultural heritage environment. The purpose of this assessment is to identify and evaluate any potential impacts the proposed development may have on the heritage of the proposed development site and its surrounding landscape. The assessment was carried out by Lane Purcell Archaeology. Relevant mapping is provided in **Figures 14.1–14.7**, with photographic documentation presented in **Figures 14.8–14.20**, all included in **Volume 3 Figures**.

The proposed development site is located on the Ringaskiddy Peninsula, overlooking the lower reaches of Cork Harbour, approximately 800m east of the village of Ringaskiddy, County Cork. The site is currently greenfield, measuring approximately 13.5 hectares and is situated on a north-facing slope at the eastern end of the peninsula. Site location details are shown in **Figure 1.1**, with additional context provided in **Figure 14.1 and Plate 1 - Figure 14.8 – Volume 3**.

The proposed development primarily involves the construction of a waste-to-energy facility (waste incinerator) for the treatment of residual household, commercial, and industrial non-hazardous and hazardous waste. Associated works will include:

- Upgrading a section of the L2545 road
- Connecting to the national electrical grid
- Raising ground levels in parts of the site
- Implementing coastal protection measures above the foreshore at Gobby Beach
- Providing an amenity walkway linking to the Ringaskiddy Martello Tower

A detailed description of the proposed development site is provided in **Chapter 4 Description of the Proposed Development**, of this EIS.

There are no recorded archaeological monuments within the proposed development site, including the area designated for coastal protection and the section of the L2545 road to be upgraded (**Figure 14.1**). Similarly, there are no Protected Structures (PS) within the proposed development site as listed in the Cork County Development Plan 2022-2028 (CCDP), nor are there any structures listed in the National Inventory of Architectural Heritage (NIAH) for County Cork (**Figure 14.2**). Furthermore, no cultural heritage sites have been identified within the boundary of the proposed development site.

A Martello tower, listed in the Record of Monuments and Places (RMP) (RMP No. CO087-053---) is located approximately 70m south of the proposed development site. A portion of the proposed development site falls into the Zone of Archaeological Potential (ZAP) or Zone of Notification (ZON), for this recorded monument. Historical Ordnance Survey (OS) mapping indicates that at one time a path extended northeast through the proposed development site, linking the Martello Tower to the shoreline at the eastern tip of the Ringaskiddy Peninsula (**Figures 14.3–14.5**). The Martello tower is included in the Record of Protected Structures (RPS) (RPS No. 575) in the CCDP and is recorded in the NIAH under Registration No. 20987047. The path associated with the tower is considered to form part of the curtilage of the Protected Structure.

A total of 50 recorded archaeological sites are located within an approximate 2km radius of the proposed development site. These are listed in the RMP for County Cork and the Sites and Monuments Record (SMR) Database of the Archaeological Survey of Ireland (ASI) (**Figure 14.1**). These monuments illustrate the archaeological background of the wider area and the potential for previously unrecorded archaeology within the proposed development site.

Some terms used in this chapter are explained hereunder:

14.1.1 Archaeological Heritage

Archaeological heritage can be described as the study of past human societies through their material remains and artefactual assemblages. The Valetta Treaty (or the European Convention on the Protection of the Archaeological Heritage, 1992) defines archaeological heritage as “*all remains and objects and any other traces of humankind from past times*” this includes “*structures, constructions, groups of buildings, developed sites, moveable objects, monuments of other kinds as well as their context, whether situated on land or under water*”.

14.1.2 Architectural Heritage

Architectural heritage is defined in the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 1999 as structures and buildings together with their settings and attendant grounds, fixtures and fittings, groups of such structures and buildings, and sites, which are of architectural, historic, archaeological, artistic, cultural, scientific, social or technical interest.

14.1.3 Cultural Heritage

Cultural Heritage is an expression of the ways of living developed by a community and passed on from generation to generation, including customs, practices, places, objects, artistic expressions and values. Cultural Heritage is often expressed as either Intangible or Tangible Cultural Heritage (ICOMOS, 2002). Environmental Protection Agency (EPA) Guidelines (2003), define cultural heritage as including archaeological heritage, architecture, history, landscape and garden design, folklore and tradition, geological features, language and dialect, religion, settlements, inland waterways (rivers), and place names. The more recent EPA Guidelines (2022) includes archaeology, architectural heritage and folklore and history under the broad category of cultural heritage.

14.1.4 Study Area

To obtain a comprehensive assessment of the archaeological, architectural and cultural heritage environment, a Study Area with a minimum 2 km around the proposed development site was selected. While this radius served as a baseline, sites and features located slightly beyond this area were also considered where relevant to the assessment.

14.2 Assessment Methodology

14.2.1 General

The methodology for the archaeological, architectural and cultural heritage section of this EIS comprises the following steps:

- A review of the relevant legislation and guidelines
- A desktop assessment of the proposed development site and wider Study Area
- Walkover surveys of the proposed development site
- An evaluation of the likely effects of the proposed development on the archaeological, architectural and cultural heritage of the proposed development site and Study Area. Effects are assessed in accordance with *Guidelines on the Information to be contained in Environmental Impact Assessment Reports* (EPA, 2022)
- Proposed mitigation measures to be undertaken to prevent or reduce any potential effects on the archaeological, architectural and cultural heritage

14.2.2 Guidance and Legislation

In Ireland, the principal legislative measures protecting cultural heritage assets are the National Monument (Amendments) Acts 1930 to 2014, the Heritage Act 1995, the relevant provisions of the National Cultural Institutions Act 1997, the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999 and the Planning and Development Act 2000.

On October 13th, 2023, a new piece of legislation – the **Historical and Archaeological Heritage and Miscellaneous Provisions Act 2023** was enacted by both Seanad Éireann and Dáil Éireann. This Act is set to replace the National Monuments Acts 1930 to 2014 and other related legislation, modernising the legal frameworks for the preservation, protection and management of archaeological and historical heritage in Ireland.

Key provisions of the 2023 Act include the establishment of a single Register of Monuments, a statutory reporting scheme for newly discovered monuments, and measures to prevent the illicit import and possession of stolen cultural property. The Act also strengthens the framework for the licensing of archaeological works, site protection and heritage management planning. While the new Act is being implemented through a series of phased commencements, the existing legislation will remain in effect during the transition period.

This chapter is prepared having regard to the following guidelines:

- Guidelines on the information to be contained in Environmental Impact Assessment Reports, (Environmental Protection Agency, 2022)
- Advice Notes for Preparing Environmental Impact Statements, (Environmental Protection Agency, 2003)
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, 2018)
- Framework & Principles for the Protection of the Archaeological Heritage, (Department of Arts, Heritage, Gaeltacht & the Islands, 1999)
- Policy & Guidelines on Archaeological Excavation, (Department of Arts, Heritage, Gaeltacht & the Islands, 1999)
- Architectural Heritage Protection, Guidelines for Planning Authorities, (Department of the Environment, Heritage and Local Government, 2004)

14.2.3 Consultations

During the preparation of the EIS, the following was consulted:

- County Archaeologist, Ms. Annette Quinn, Cork County Council. Mitigation measures agreed with Ms. Quinn are detailed in **Section 14.6**
- County Conservation Officer, Ms. Elena Turk, Cork County Council. Mitigation measures agreed with Ms. Turk are also detailed in **Section 14.6**
- National Monuments Service Archaeologist for County Cork (no response received)
- Underwater Archaeology Unit, National Monuments Service (no response received)
- Details of correspondence are included in **Appendix 14.1**

14.2.4 Desktop Study

The desktop study aims to provide a comprehensive understanding of the archaeological, architectural, and cultural heritage environment of the proposed development site and Study Area by utilising the sources outlined below.

14.2.4.1 Review of Previous EIS and EIARs

Two previous Environmental Impact Statements (EISs) for the Indaver Waste-to-Energy Facility at Ringaskiddy, prepared by Arup in 2008 and 2016, were reviewed, and the more recent 2019 environmental impact assessment report (EIAR) prepared for the current application for an Industrial Emissions licence was also reviewed. Each of these included dedicated chapters on archaeological, architectural, and cultural heritage.

The assessments in both reports concluded that, subject to the implementation of recommended mitigation measures, the proposed development would not result in any significant adverse effects on the archaeological, architectural, or cultural heritage assets within the site or its surrounding area.

14.2.4.2 Record of Monuments and Places (RMP)

This record was established under Section 12 (1) of the National Monuments (Amendment) Act 1994. It lists all monuments and places considered to be of archaeological importance in the County. The numbering system consists of two parts: the first part is the county code (CO for Cork) followed by the Ordnance Survey map number (six inch to the mile scale); the second part is the number of a circle surrounding the site on the RMP map, e.g. CO087-053 refers to circle 053 on OS sheet 87 for County Cork. The area within the circle is referred to as the *Zone of Notification (ZON)*. Under the National Monuments Acts, any person proposing to carry out work that might disturb the ground or affect the monument within this zone is required to notify the Minister in advance. In practice, such notifications are made to the National Monuments Service (NMS), which operates on the Minister's behalf. The diameter of the ZON varies depending on the nature of the monument but typically averages approximately 180m. The RMP for County Cork was published in 1998.

14.2.4.3 Archaeological Survey of Ireland (ASI) Database

The purpose of the ASI is to compile a baseline inventory of the known archaeological monuments in the State. It contains details of all monuments and places or sites known to the ASI which pre-date AD 1700, and a selection of monuments which post-date 1700. The large record archive and databases resulting from the survey are continually updated. Archaeological sites which are added to the database are proposed to be included in the next published edition of the RMP and will then be afforded its protection. This database, complete with maps, is available for consultation via the NMS website at www.archaeology.ie.

14.2.4.4 Archaeological Inventory

The inventories for each county are follow-ons by the Archaeological Survey of Ireland, to the RMPs. They give a written description of each archaeological site in the county. The archaeological inventory for East and South Cork, Volume 2 (Power, Byrne, Egan, Lane & Sleeman) was published in 1994 and a follow up volume, Volume 5 (Ronan, Egan & Byrne), was published in 2009.

14.2.4.5 Files of the National Monuments Service (NMS), Department of Housing, Local Government and Heritage

The files of the NMS were consulted to retrieve information on lists of RMP sites that have been afforded added protection such as:

- National Monuments in the ownership or guardianship of the state – None in the Study Area
- National Monuments in the ownership or guardianship of the local authority – One in the Study Area - Spike Island fortification (CO087-065003-)
- Monuments subject to Preservation Orders and Temporary Preservation Orders – None in the Study Area
- Monuments listed in the Register of Historic Monuments – One in the Study Area - Barnahely ringfort (CO087-048)

14.2.4.6 Files of the National Museum of Ireland (NMI)

The topographic files of the NMI were consulted for the townlands within the Study Area. The files primarily document artefacts reported to the Museum, including stray finds and excavation assemblages. The records include material from the 1932 excavation of a cairn (CO099-023) at Curraghbinny Hill by O'Riordáin, which is located 2.1km to the south. No other stray finds are recorded from any of the townlands within the Study Area.

14.2.4.7 Cork County Development Plan (2022-2028) (CCDP)– Local Policies with regards to Heritage

The CCDP outlines Cork County Council’s objectives/policies regarding the preservation of the archaeological, architectural, and cultural heritage of the county. The Plan *‘recognises the importance of identifying, valuing and safeguarding our archaeological, architectural and cultural heritage for future generations through appropriate protection, management and enhancement measures or via the sensitive development of this resource’* (CCDP, Vol. 1, Chapter 16, 353).

Volume 2 of the CCDP provides detailed listings of Protected Structures (PS) and Architectural Conservation Areas (ACA) across County Cork.

The protection and management of heritage assets are set out through twenty-six specific objectives (HE 16-1 to HE 16-26), addressing various aspects of the county’s heritage. Objectives relating to heritage which are of relevance to the proposed development include the following:

Archaeological Heritage Objectives

HE 16-2: Protection of Archaeological Sites and Monuments

Preserve archaeological sites and monuments, either in situ or by record in exceptional cases, as listed in the SMR and the RMP. Developments should consider recommendations from the Development Applications Unit.

HE 16-5: Zones of Archaeological Potential

Protect ZAPs around historic towns and archaeological monuments. Any development in these zones must account for both surface and subsurface archaeology through appropriate assessments.

HE 16-6: Industrial and Post-Medieval Archaeology

Preserve and manage industrial and post-medieval heritage features like mills, limekilns, bridges, and military installations. Proposals for redevelopment should undergo specialist assessment and documentation.

HE 16-7: Battlefield, Ambush, and Siege Sites

Protect defensive archaeological sites, such as battlefields, ambush sites, and coastal fortifications, due to their historical and cultural significance. Development in these areas must undergo a historic assessment to avoid negative effects.

HE 16-12: Raising Archaeological Awareness

Develop a management plan for the archaeology of County Cork, promoting tourism, strategic research, and best practices in archaeology. Encourage the publication and interpretation of archaeological findings from development projects.

HE 16-13: Previously Unidentified Archaeological Sites

If previously unidentified archaeological sites are uncovered during construction, they must be investigated and recorded. Preservation *in situ* is preferred, with preservation by record only considered in exceptional cases.

Architectural Heritage Objectives

HE 16-14: Record of Protected Structures (RPS)

Identify and protect structures of architectural, historical, and cultural importance. This includes updating the RPS and ensuring development respects the character and integrity of these structures and their curtilage.

HE 16-15: Protection of Structures on the NIAH

Protect structures included in the NIAH that are not yet in the RPS from negative impacts during development.

HE 16-16: Protection of Non-Structural Elements of Built Heritage

Protect non-structural elements of built heritage, including gardens, walls, railings, gates, and street furniture. Raise awareness of their importance and best practices for preservation.

HE 16-21: Design and Landscaping of New Buildings

Encourage new buildings that respect the traditional character, materials, and forms of existing places. Promote energy-efficient design and appropriate landscaping using indigenous species. Protect existing hedgerows and historic boundaries in rural areas.

Cultural Heritage Objectives

HE 16-23: Cultural Heritage Protection

Protect and promote the cultural heritage of County Cork as an economic asset and key element of local identity and well-being.

HE 16-24: Promotion of Local Place Names and Heritage

Promote the use of local place names, reflecting the history and landscape of the area, in new developments. This ensures that new residential and other developments preserve the local heritage and cultural identity.

14.2.4.8 National Inventory of Architectural Heritage (NIAH)

The NIAH was established under Section 2 of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999, following the Convention for the Protection of the Architectural Heritage of Europe (the Granada Convention) of 1985. The NIAH is tasked with systematically and consistently identifying and recording Ireland's architectural heritage from 1700 to the present day. It is divided into two main components: The Building Survey and Historic Garden Survey (www.buildingsofireland.ie). The primary function of these surveys is to identify and evaluate the State's architectural heritage in a uniform manner to aid its protection and conservation.

A survey of the buildings in County Cork was conducted by the NIAH between 2006 and 2011. Under Section 53 of the Planning and Development Act 2000, structures of regional, national, or international importance identified in the survey are recommended for inclusion in the RPS by the Minister for Arts, Heritage and the Gaeltacht. If the local authority does not adopt the recommendation, the reasons must be communicated to the Department. The Building and Historic Garden Survey for County Cork is available online.

No buildings or gardens included in the Inventory are located within the proposed development site. A number are located within the 2km Study Area, the nearest of which is Ringaskiddy Martello tower (Reg. No. 20987047), located 70m to the south of the proposed development site. The nearest garden included in the garden survey is that associated with Prospect Villa in Barnahely, 1km to the west of the proposed development site.

14.2.4.9 Database of Irish Excavation Reports (www.excavations.ie)

This website provides a database of summary accounts of archaeological excavations and investigations in Ireland conducted between 1970 and 2025. One archaeological investigation was carried out within the proposed development site in 2001 (Lane in www.excavations.ie). During a pre-planning assessment, archaeological testing was conducted on an elongated mound located in the high southern part of the proposed development site. It was determined that the mound held no archaeological significance, as it was the result of land improvement works. Several other archaeological investigations have been carried out in the Study Area, which are detailed below (**Section 14.3.8**). The summary account of investigations conducted in the Study Area is provided in **Appendix 14.2**.

14.2.4.10 Site-specific Publications

All available published information on the Study Area was consulted, including historical journals, local history publications, and other relevant sources. A complete list of these references can be found in the bibliography.

14.2.4.11 Cartographic Sources

The following maps were consulted during the assessment and are provided in **Volume 3** of this EIS:

- Candell's map of Cork Harbour (1587) – see **Figure 14.6**
- Down Survey Parish and Barony maps (1654-1659) – see **Figure 14.7**
- OS 6-inch maps; the three editions of the 6-inch to one mile scale maps were consulted; the first edition published in 1841-1842, the second edition published in 1902, and the third edition published in 1934. (the RMP was superimposed in onto this edition in 1998) – see **Figures 14.3 to 14.5**
- The 25-inch to one mile scale map, from which the second edition 6-inch map was derived in 1902

14.2.4.12 Aerial Photographs

Ordnance Survey of Ireland online aerial photographs (dated 1995, 1996-2000, 2001-2005, 2006-2012, 2011-2013, 2013-2018 and 2025) (www.osi.ie) and Google maps online aerial photographs (www.google.ie) were examined to identify any previously unrecorded features of archaeological/ cultural heritage significance that may only be visible from the air. No archaeological features were identified.

14.2.5 Site Visits

The primary purpose of the site inspection is to assess the physical environment in which the proposed development will take place and to identify any visible features of archaeological, architectural, or cultural heritage significance. The inspection also considers current land use, topography, and environmental conditions to build a comprehensive understanding of the receiving environment.

The proposed development site covers an area of approximately 13.5 hectares. Site inspections were previously undertaken as part of the 2008 and 2016 EISs. As part of this current EIS, walkover surveys were carried out in January, February and August 2025. This survey aimed to verify the findings of earlier assessments, identify any changes to site conditions, and confirm the presence or absence of any features of potential heritage interest.

14.3 Baseline Environment

The proposed development site is located approximately 15km to the south-east of Cork City, in the townland of Ringaskiddy on the Ringaskiddy Peninsula in the lower part of Cork Harbour. Ringaskiddy townland is in the parish of Barnahely and barony of Kerrycurrihy.

The nearest extant settlement to the proposed development site is the village of Ringaskiddy, located approximately 800m to the west. Lewis (Cadogan, 1998) describes early 19th century Ringaskiddy as “*a small village on the shore... resorted to in summer for sea-bathing*” also known for boat building and fishing. The mid-19th century OS map shows the two settlements of Rock village and Ring approximately 600m and 800m to the west, respectively. Reclamation of the shoreline to the north of the proposed development site in 1979-80 subsumed three offshore islands, as well as the two villages and the road from Ringaskiddy was extended eastward.

A full chronological account of the cultural heritage of the Study Area is given in **Appendix 14.3**. It provides an archaeological and historical overview of human activity in the Study Area, from the prehistoric period to modern times. The following summary highlights the most relevant points.

There are no recorded archaeological monuments listed in the RMP within the proposed development site. A recorded Martello tower (CO087-053--- and RPS 575) stands 70m to the south of the southern proposed development site boundary. Part of the southern perimeter of the proposed development site falls within the Zone of Archaeological Potential (or zone of notification) for this Martello tower. The OS maps show a path linking the tower to the seashore to the northeast. Although no longer evident on the ground, it is considered to be part of the curtilage of the tower as it crosses the proposed development site. This path, shown on the 1841, 1902, and 1934 OS maps, originally extended from the tower to Ordnance Stones at Gobby Beach, likely dating to the tower's early 19th-century construction. While consistently mapped, the path has been partially lost due to modern soil removal.

There are 53 no. recorded archaeological sites listed in the RMP and SMR database in the 2km Study Area (**Figure 14.1**). Of the 53 sites, six have no known locations, and two are classified as Redundant Records, meaning they have been investigated and found to have no archaeological potential.

Table 14.1 RMP and SMR sites within a 2km radius of the proposed development site

RMP	Site Type	Townland	Distance from Development site
CO099-023	Cairn	Curraghbinny	2.1km to the S
CO087-044	Souterrain	Coolmore	2.3km to the SW
CO087-045	Standing stone	Coolmore	2.3km to the SW
CO087-046	Ringfort	Raheens	2.2km to the SW
CO087-047	Ringfort	Raheens	2km to the SW
CO087-048	Ringfort	Barnahely	1.6km to the SW
CO087-049	Possible church	Ballintaggart (unlocated)	NA
CO087-050001	Redundant record	Barnahely	1.3km to the W
CO087-050002-	Gate lodge	Barnahely	1.5km to the W
CO087-051001-	Graveyard	Barnahely	1.1km to the SW
CO087-051002-	Church	Barnahely	1.1km to the SW
CO087-052001-	Tower house	Barnahely	1.2km to the SW
CO087-052002-	Ornamental tower	Barnahely	1.2km to the SW
CO087-052003-	Bawn	Barnahely	1.2km to the SW
CO087-052004-	Sheela-na-Gig	Barnahely	1.2km to the SW
CO087-053	Martello tower	Ringaskiddy	70m to the S
CO087-054	Midden	Ringaskiddy	650m to the S
CO087-055	Midden	Curraghbinny	1.4km to the S
CO087-056	Midden	Curraghbinny	1.8km to the S
CO087-057	Midden	Curraghbinny	2km to the S
CO087-059001-	Barracks	Haulbowline Island	1.1km to the N
CO087-059002-	Martello tower	Haulbowline Island	1.2km to N
CO087-059003-	Bastioned fort	Haulbowline Island	1.2km to N
CO087-060	Vernacular house	Barnahely	1.2km to the SW
CO087-061	Ecclesiastical enclosure	Ballintaggart	2km to the NW
CO087-064	Redundant record	Coolmore	2.5km to the SE
CO087-065001-	Burial ground	Spike Island	830m to the E

RMP	Site Type	Townland	Distance from Development site
CO087-065002-	Ecclesiastical site	Spike Island	1.2km to the E
CO087-065003-	Fortification	Spike Island	1.2km to the NE
CO087-068001-	Possible ringfort	Ballybricken (unlocated)	NA
CO087-068002-	Possible souterrain	Ballybricken (unlocated)	NA
CO099-074	Fulacht fiadh	Coolmore (unlocated)	NA
CO087-096	Standing stone	Raheens (unlocated)	NA
CO087-101	Enclosure	Coolmore	2km to the SW
CO087-102	Souterrain	Raheens	2.2km to the SW
CO087-103	Souterrain	Raheens	2.2km to the SW
CO087-104	Souterrain	Raheens	2.2km to the SW
CO087-105	Magazine	Rocky Island	690m to the N
CO087-111	Country house	Barnahely	1km to the W
CO087-120	Midden	Barnahely	1.3km to the SW
CO087-132	Burnt pit	Barnahely	1.3km to the W
CO087-143	Settlement Cluster	Barnahely (unlocated)	NA
CO087-145	Fulacht fiadh	Barnahely	1.6km to the SW
CO087-146	Kiln – corn drying	Barnahely	1.6km to the SW
CO087-147	Excavation Miscellaneous	Barnahely	1.2km to the SW
CO087-148	Excavation Miscellaneous	Barnahely	1.1km to the SW
CO087-155	Enclosure	Barnahely	1km to the W
CO087-156	Kiln – corn drying	Barnahely	1.6km to the SW
CO087-161	Midden	Ringaskiddy	400m to the S
CO087-162	Midden	Ringaskiddy	510m to the N
CO087-163	Midden	Ringaskiddy	510m to the N
CO099-023	Cairn	Curraghbinny	2km to the S
CO099-105	Possible Fulacht fiadh	Curraghbinny	1.9km to the S

The following account of the archaeological heritage in the Study Area is structured chronologically. The archaeological timescale is typically divided into three major periods, each with distinct sub-phases:

- **The prehistoric period:** Mesolithic - (*circa* 8000 to 4000 BC); Neolithic - (*circa* 4000 to 2400 BC); Chalcolithic c. 2450-2200; Bronze Age (*circa* 2200 to 700 BC) – Iron Age (*circa* 700 BC to AD 400)
- **The medieval period:** Early medieval 5th – 12th century; high medieval 12th century – *circa* 1400; late medieval *circa* 1400 – 16th century
- **Post medieval period:** 17th century onwards

Information on all registered archaeological sites in the Study Area comes from the ASI database, which includes data from the Cork Archaeological Inventories (Volumes 2 and 5) and reflects updates from more recent research and newly identified sites.

14.3.1 Mesolithic and Neolithic

The earliest evidence for human colonisation and settlement in Ireland dates to 8000 BC, the Mesolithic Period. There are no known archaeological sites from the Mesolithic within the Study Area.

Both archaeological monitoring and excavation were undertaken in the townland of Ringaskiddy in advance of soil extraction for the Haulbowline East Tip Remediation Project, overseen by Cork County Council (Cummins, 2016). The site, located approximately 100m south of the proposed development site, comprised five fields of farmland overlooking Cork Harbour. Several features were identified, most of which had been truncated by ploughing. Key findings included: a hearth, a possible roasting pit and two adjacent bowl furnaces, with slag indicating Developed Iron Age activity.

The most significant discoveries were the footprints of four possible post-built houses, a pottery fragment from the Early Neolithic and Late Bronze Age and three E-W linear ditches. The easternmost ditch likely marked a boundary, while the central ditch contained a sherd of Late Bronze Age pottery. Numerous stake and post-holes and possible pits were also recorded. Overall, the site revealed multi-period occupation, with evidence of prehistoric domestic and industrial activity (Miller, 2018).

Within the wider Cork Harbour area, several Neolithic sites have been identified. These include a simple megalithic tomb in Rostellan (CO088-101) on the modern shoreline, approximately 8.5km to the northeast of the proposed development site. Further Neolithic settlement activity has been recorded at Ballinure on the Mahon peninsula (CO074-130), approximately 9km to the northwest (Purcell, 2005) and at Foaty on Fota Island (CO075-077), approximately 7km to the north (Rutter and O’Connell 1992). The M28, currently under construction, will extend from the N40 South Ring Road at Bloomfield Interchange to Ringaskiddy, with one section of the route passing through the northwestern edge of the proposed development site. Preliminary findings from excavations along this route are summarised in the M28 Cork to Ringaskiddy Project StoryMap (Long & Millar 2023) and on Excavations.ie (see **Appendix 14.2**), with full reports to be published following completion of post-excavation analysis. These excavations have revealed early prehistoric activity within the Study Area. Evidence for Neolithic occupation was identified in the townlands of Ringaskiddy and Barnahely. At Ringaskiddy 1, a cluster of pits and a post-hole produced prehistoric pottery, lithics, stone beads, a possible spindle whorl, and charred plant remains, interpreted as domestic or settlement-related activity of Neolithic date (Long & Millar 2023). At Barnahely, a series of pits and linear features yielded charred grains, including naked barley and probable emmer, suggesting early prehistoric cultivation and food processing (Gooney, 2025).

14.3.2 Bronze Age and Iron Age

The Irish Bronze Age is characterised by the introduction of metallurgy to the island of Ireland.

This period is well represented in the Study Area. A tumulus or cairn (CO099-023---) is recorded on top of Curraghbinny Hill, approximately 2km south of the proposed development site. Excavations by O’Riordan in 1932 (Power *et al.* 1994, p. 52) revealed a cairn of stones with an enclosing dry-stone wall and some fragmentary cremated human remains. There is a standing stone (CO087-045---) in the townland of Coolmore, approximately 2.3km to the southwest, while another standing stone (CO087-096---) is listed by Power *et al.* (*ibid.*) as being in Raheens, although its precise location remains unconfirmed.

A fulacht fiadh (CO099-074---) is recorded in Coolmore, though its exact location is unknown. Another possible fulacht fiadh (CO099-105---) is located in Curraghbinny, approximately 1.9km south of the proposed development site. A third example (CO087-145---) was uncovered during archaeological testing in Barnahely in 2004 (Cummins, 2004).

In 2018 (Millar 2018) an archaeological excavation was carried out approximately 100m south of the proposed development site near the Martello Tower. Late Bronze Age deposits were uncovered (likely associated with settlement activity) along with two adjacent bowl furnaces. In addition, the presence of slag indicated activity dating to the Developed Iron Age, the later part of the Iron Age when iron use became more widespread. It was considered that these findings indicated a higher level of metal production consistent with this more advanced phase of Iron Age activity.

As part of the M28 excavations, in the townland of Loughbeg, located west of the proposed development site, cremation burials and Bronze Age pottery were identified (Long and Miller, 2023). At Loughbeg 1 (2025:217, Quilty), a cremation pit was identified along with prehistoric pits and post-holes, while at Loughbeg 2 (2025:219, Hourihan), a cluster of pits and a charcoal-rich spread contained tentative Bronze Age pottery, lithics, rubbing stones, and rare charred cereal grains. At Loughbeg 3 (2025:218, Quilty), a trough, burnt spread, oxidised area and stake-holes were interpreted as prehistoric, with a sherd of pottery also recovered.

In Barnahely townland, to the east of the medieval church and graveyard (CO087-050002, 001) and Barnahely tower house (CO087-052001), approximately 900m west of the proposed development site, excavations revealed activity spanning the prehistoric and early medieval periods. These investigations uncovered a ring-ditch, a possible circular structure, and several pits, which yielded prehistoric pottery, more than 40 fragments of saddle querns and grinding stones, and a blue glass bead. These discoveries indicate domestic, craft, and possibly trade activity, and establish Barnahely as a site of considerable prehistoric significance (*ibid.*).

14.3.3 Early Medieval Period

This period in Ireland is characterised by the influx and growing influence of Christianity, which had become widely established by the 6th century AD. Monasteries became focal points for lay communities, who were otherwise dispersed throughout the countryside in settlements such as ringforts (raths), crannogs, and simple huts.

Several ringforts have been recorded in the Study Area, some of which are associated with souterrains. There are two ringforts (CO087-046---; CO087-047---) in Raheens, approximately 2.2km and 2km, respectively to the southwest of the proposed development site. Three souterrains (CO087-102---; CO087-103---; CO087-104---) were exposed during the 1989 excavation of one of these ringforts (CO087-046---) (Power *et al.*, 1994, 157–158). Another ringfort (CO087-048---) is recorded in Barnahely townland, approximately 1.6km to the southwest, where a possible souterrain or kiln and a quern stone were uncovered during an archaeological investigation (Cummins, 2012). Two corn-drying kilns (CO087-146 and CO087-156---) were identified during earlier archaeological investigations adjacent to this ringfort (Cummins, 2004).

A possible collapsed souterrain (CO087-044---) was observed in ploughed soil in Coolmore, approximately 2.3km to the southwest. In Ballybricken townland, the locations of a ringfort (CO087-06801-) and a possible associated souterrain (CO087-06802-) are noted, however, their exact locations are unknown. A possible small circular enclosure (CO087-101---) in Coolmore, also approximately 2km southwest of the proposed development site, may date to the early medieval period.

As part of the M28 route selection process geophysical survey revealed an early medieval ringfort (CO087-155) and a complex of features defined by fosses at Barnahely, approximately 900m west of the proposed development site (Ronan 2009). Subsequent investigations in advance of construction of the M28 revealed two other ringforts nearby (Long and Millar, *ibid.*). One of the sites contained evidence of early medieval metalworking, including a possible souterrain and artefacts such as an iron spearhead. The most substantial enclosure featured a ditch over 5m wide and contained a souterrain, as well as numerous artefacts, including a copper alloy brooch, bone combs, beads, pins, a billhook, animal bones, marine shells, and metalworking debris. These discoveries indicate substantial industrial activity and the exploitation of estuarine resources.

In total, over 500 artefacts were recovered, along with environmental materials such as charcoal, seeds, and faunal remains. The assemblage offers valuable insights into prehistoric and early medieval metalworking, animal husbandry, agriculture, woodland management, and diet. Overall, the Barnahely excavations demonstrate the site's long-term occupation, evolving from a prehistoric settlement into an early medieval industrial centre, and significantly enhance our understanding of the region's cultural and economic development (*ibid.*).

There are several churches or potential church sites in the Study Area. While some may have early medieval origins, both documentary sources and surviving remains suggest that others are of later date. An early ecclesiastical enclosure (CO087-061---) may have existed in Ballintaggart townland, approximately 2km northwest of the proposed development site, while the site of an early church and graveyard (CO087-049) is marked in the adjoining Ballybricken townland on the RMP map. At Barnahely, approximately 1.1km southwest of the proposed development site, the graveyard (CO087-051001-) encloses the former parish church of Barnahely (CO087-051002-), although no upstanding remains of the church are visible.

The ecclesiastical site on Spike Island (CO087-065002-) has been identified with the early ecclesiastical settlement of Inispiacht, as noted by Hurley (1980, quoted in Power *et al.*, 1994, 290). A 1625 map appears to show the remains of a ruined church on the island, further supporting this association. While no archaeological evidence of Viking settlement has yet been found around Cork Harbour, several local place names—such as Dunkettle and Foaty—suggest Scandinavian influence. Viking occupation of nearby Haulbowline Island has also been proposed as a possibility (Jefferies, 1985, 14, 16).

14.3.4 High Medieval and Late Medieval Period

A small number of sites in the Study Area date to the medieval period. The ruins of a tower house and part of a bawn wall (CO087-052001-, CO087-052003-) are the remaining structures of a 16th-century castle located in Barnahely, approximately 1.2 km southwest of the proposed development site. This site is listed as RPS 1260 in the CCDP (2022-2028). A sheela-na-gig (CO087-052004-), discovered at the castle in the 19th century, is now lost. In addition, a two-storey, gable-ended structure was added to the castle in the 16th or 17th century. Castle Warren House, built in 1796, now stands on the same site.

There are eight recorded shell middens in the Study Area. Four are located in Ringaskiddy: there are two (CO087-054--- and CO087-161---) approximately 650m and 400m south of the proposed development site, respectively, and the two others (CO087-162--- and CO087-163---) are located approximately 501m to the north at Paddy's Point, at the northern end of Gobby Beach. Three middens are recorded in Curraghbinny, between 1.4 km and 2km south of the proposed development site. These are located along the shoreline at Lough Beg (CO087-055---) and on the northern slope of Curraghbinny Hill (CO087-056--- and CO087-057---). The eighth midden is in Barnahely (CO087-120---), approximately 1.3 km southwest of the proposed development site. These middens reflect coastal activity and resource exploitation in the area, and they may date from the prehistoric or early historic periods.

14.3.5 Post Medieval Period

The main defences of Cork Harbour during this period were located one on either side of the harbour entrance at Carlisle Fort (CO087-058---), now known as Davis Fort, on the eastern side, and at Camden Fort (CO099-024---), now Fort Meagher, on Crosshaven Hill to the west. Both were constructed on the sites of earlier defences and fortifications. Additionally, a fortification known as Covefort (CO087-109) was located in Carrignafof on Great Island, approximately 3.5km northeast of the proposed development site and east of Cobh. A star-shaped fortification was built here in the 1740s, commanding views of the harbour entrance (Rynne 1993, 70), and was brought back into service during the Napoleonic Wars (1803-1815) (Kerrigan 1995, 187).

Closer to the Ringaskiddy Peninsula, there are fortifications on both Haulbowline Island (CO087-05903-) and Spike Island (CO087-065003-), situated approximately 1.2km to the north and northeast, respectively, of the proposed development site. The bastioned fort on Haulbowline Island dates to the early 17th century, with later additions including a keep and gatehouse. The fort was abandoned in 1624 and remained largely out of use for nearly two centuries (Gowen 1978, 246 in Power *et al. ibid.*). In 1806, the island was divided between the Admiralty and the Board of Ordnance, prompting renewed military development.

Several military buildings were constructed, including a barracks (CO087-059001-) and six large storehouses as part of the naval victualling yard (Kerrigan 1995, 194). A Martello tower (CO087-059002-) was also built between 1813 and 1815 on the western side of the island. The Martello tower, along with the limestone warehouses and offices, are listed in the RPS as RPS 578 and RPS 670, respectively.

A battery was constructed on Spike Island in 1779 but was abandoned by 1783. A more substantial star-shaped fortification, Westmoreland Fort, was built in 1791 under Colonel Vallancey, with construction continuing until at least 1860 (Power *et al. ibid.*). Upon completion, the fort occupied over half the island and consisted of “six bastions connected by ramparts and surrounded by a broad dry ditch” (Kerrigan *ibid.*). It was renamed Fort Mitchell in 1938 when transferred to the Irish Government. Spike Island was used as a prison intermittently from the 17th century onward, and from 1985 to 2004, it served as a civilian prison under the Department of Justice. A military cemetery (CO087-065001-) is located in the southwestern corner of the island and is marked as a disused Convicts’ Burial Ground on the 1902 25-inch OS map. The fort is listed in the RPS (RPS 1272). Rocky Island, situated south of Haulbowline and north of Ringaskiddy, was selected as the site for two large gunpowder magazines (CO087-105---).

Five Martello towers were constructed in Cork Harbour during the Napoleonic period, between 1813 and 1815, each occupying a strategically selected location. Three were positioned along the northern shore of Great Island—Manning Tower at Marino Point, Belvelly, and Rossleague—with a fourth located on high ground at the northwestern side of Haulbowline Island (CO087-059002-, RPS 578). The fifth, and most prominent, was built at Ringaskiddy (CO087-053---, RPS 575), occupying the highest point of the peninsula.

All five towers were constructed on land identified as Ordnance Ground, reserved specifically for strategic military use. The towers at Ringaskiddy, Belvelly, and Rossleague are further delineated by ordnance stones, which marked the boundaries of military jurisdiction. The Ringaskiddy tower is the largest of the Cork Harbour group and is unique in being enclosed by a defensive ditch. It is further encircled by a walled circular enclosure approximately 100m in diameter, defined by four ordnance stones. The tower is situated 70m south of the proposed development site’s southern boundary, with the enclosing wall lying 30m to the south.

The Ringaskiddy tower is particularly distinctive for its associated path marked by ordnance stones at both ends, as recorded on the 1841 OS map (**Figure 14.3**). The 1st (1841), 2nd (1902), and 3rd (1934) edition OS maps all depict a path extending northeast from the tower across the proposed development site to Gobby Beach. On the first edition map, the path terminates at an ‘*Ordnance Stone*’ at Gobby Beach, indicating it was likely established in conjunction with the tower’s early 19th-century construction. Although consistently illustrated on all three OS maps, the path is no longer evident. Although there is no legally registered right-of-way associated with the path, it is considered part of the curtilage of the Martello tower.

One former country house, Prospect Villa (CO087-111---), was located in Barnahely townland, approximately 1km west of the proposed development site; the house has since been demolished. An ornamental tower (CO087-052002-) in the same townland has also been demolished. The only apparent surviving element of a once-larger settlement depicted on the 1841 OS map is a single-storey vernacular house (CO087-060---), located approximately 1.2km southwest of the proposed development site.

An earlier settlement cluster is recorded in Barnahely on the Down Survey Barony map (1654–59), which shows a group of buildings in the area then referred to as ‘*Berneherly*’. This 17th-century settlement appears to have been located in the vicinity of Castle Warren (CO087-052001-), though no visible remains of the buildings survive at ground level today.

Sixteen structures within 1.5 km of the proposed development site are listed in the RPS (**Table 14.2**). These include the Martello Tower at Ringaskiddy (RPS No. 575), the Martello Tower at Haulbowline (RPS No. 578), a range of limestone warehouses and offices on Haulbowline Island (RPS No. 670), and the Castlewarren strong house at Barnahely (RPS No. 1260). In addition, twelve structures on Spike Island, including Westmoreland Fort (also known as Fort Mitchell) (RPS No. 1272), are listed. Haulbowline Island is further designated as an ACA, referred to as the ‘*Haulbowline Conservation Area*,’ in the CCDP.

Table 14.2 Structures listed in the RPS and their respective NIAH numbers within a 1.5km radius of the proposed development site

RPS ID No. & NIAH No.	Description
RPS 575 & 20987047	Martello Tower (Ringaskiddy)
RPS 578 & 20908769	Martello Tower (Haulbowline Island)
RPS 670 & 20908765	Range of Limestone Warehouses and offices (Haulbowline Island)
RPS 1260	Castlewarren Strong house (Barnahely)
RPS 1272 & 20908789	Westmoreland Fort (Spike Island)
RPS 1430 & 20908779	Officer's House (West) (Spike Island)
RPS 1431 & 20908777	Bleak House Admiral's House (Spike Island)
RPS 1432 & 20908783	Graveyard/Cemetery (Spike Island)
RPS 1422 & 20908784	Prison Jail (Spike Island)
RPS 1423 & 20908785	Barracks (West) (Spike Island)
RPS 1424 & 20908787	Barracks (South) (Spike Island)
RPS 1426 & 20908788	Barracks (East) (Spike Island)
RPS 1425 & 20908786	Battery/Gun Room (Spike Island)
RPS 1427 & 20908781	Store/Warehouse (Spike Island)
RPS 1428 & 20908782	Former Barracks including Chapel (Spike Island)
RPS 1429 & 20908780	Officers House (Spike Island)

The NIAH for East Cork lists several PSs in the Study Area, including three buildings not recorded in the RPS. In the townland of Ringaskiddy, four buildings are included in the NIAH: the Martello Tower (Reg. No. 20987047), Rock Cottage (Reg. No. 20987045), Ringaskiddy Oratory (Reg. No. 20987044), and Ring House (Reg. No. 20987046), the latter located approximately 90m west of the proposed development site. All four structures are designated as being of regional importance (**Figure 14.2**).

On Haulbowline Island, twenty-seven buildings and features are listed in the NIAH, all of which are designated as being of regional importance. On Spike Island, twelve buildings are recorded, eleven of regional importance and one, Fort Mitchell/Westmorland Fort (Reg. No. 20908789), a star-shaped fort, of national importance. All structures listed in the NIAH on both islands are also included in the RPS, underscoring their recognised architectural and historical value.

In addition, the NIAH Garden Survey for County Cork identifies two historic designed landscapes within the Study Area: Castle Warren and Prospect Villa, both located in Barnahely and shown on the first edition 6-inch Ordnance Survey map. Although neither garden survives today, their inclusion reflects the 19th-century landscape character of the area.

14.3.6 Cartographic Sources

A small number of later medieval and post-medieval maps of the harbour were consulted. The earliest of these is Candell's map of Cork Harbour (**Figure 14.6**), dated to 1587, which shows the Ringaskiddy Peninsula and names a castle on the peninsula as *Berneyele*, likely referring to Barnahely Castle. No features are depicted or named in the area of the proposed development site.

The Down Survey map of 1654–1659 (**Figure 14.7**) names Ringaskiddy (*Reniskydy*) and Barnahely (*Bernehery parish*), with Barnahely located immediately to the west. Two structures are shown in Barnahely; one appears to be a tower, likely representing the tower house and bawn (CO087-05201-) that still stands in Barnahely townland today. Haulbowline (*Howbolin Fort*) is also indicated. No features are depicted or named in Ringaskiddy.

Cartographic sources from the nineteenth and early twentieth centuries show the area of the proposed development site in agricultural use. The first edition of the OS map, dated 1841, depicts up to 32 small fields mostly clustered in the southwestern section of the proposed development site (**Figure 14.3**). By the time of the second edition OS map (1902) (**Figure 14.4**), these had been consolidated into nine larger fields.

An east–west line of narrow fields in the central part of the site is shown as “poor ground” on the first edition map, a designation retained on the second edition. The Ringaskiddy Martello Tower (CO087-053---) is clearly indicated on the first edition OS map, located approximately 70m south of the southern boundary of the proposed development site. The map depicts a ditched enclosure around the base of the tower, with a walled circular area labelled “Ordnance Ground.” A concentric dotted line surrounding this area may represent a path around its edge. Six “Ordnance Stones” are marked around the perimeter and labelled “Ordnance Stone(s)”. Two of these stones mark the beginning of a path leading to Gobby Beach. This path is shown extending northeast from the Martello tower’s ordnance ground, crossing much of the proposed development site, and terminating at Gobby Beach on the eastern boundary. Two additional Ordnance Stones are marked on either side of the path’s terminus.

A second path or lane to the Martello tower is shown extending south from Rock Cottage (NIAH No. 20987045) and a settlement cluster to its east. It turns due east for a distance before continuing south towards the tower, ending at a gap in the field boundary just north of the tower. This was likely the main access route from Rock Cottage and the settlement cluster at the time.

At that time, the northern boundary of the proposed development site was the southern shoreline of Cork Harbour (**Figure 14.3**). By the second edition OS map (1902), the road from Ringaskiddy had been extended eastward to Gobby Beach, defining the new northern boundary of the proposed development site. The path from the Martello tower to Gobby Beach is indicated as a dotted line within the area of the proposed development site, while the lane to Rock Cottage—though no longer fully shown—is also represented as a dotted line along its southern section. The settlement cluster to the east of Rock Cottage has been severely depleted and the remaining structures are named Rock Farm (**Figure 14.4**).

The third edition map, dated 1934 (**Figure 14.5**), shows very few changes to the area of the proposed development site. Minor alterations to field boundaries have taken place, mainly involving the removal of a small number of boundaries. The path from the Martello tower to Gobby Beach is still shown as on the 1902 map. The path to Rock Cottage and Rock Farm is depleted and is now only indicated in places. A new path now runs diagonally across the field to the north of the tower, toward Rock Cottage.

An examination of online aerial photographs (Ordnance Survey of Ireland: 1995, 2000, 2005; and Google Maps: 2013 and 2018 and 2025) of the proposed development site did not reveal any new features of archaeological potential. A partial line of a path visible in the 2006–2012 imagery (**Plate 2; Figure 14.9**) corresponds approximately to part of the original path from the Martello tower to Gobby Beach. However, this feature is not discernible in any of the other aerial photographs and was not evident during the walkover surveys.

The Martello tower at Ringaskiddy is depicted in several historic paintings of Cork’s lower harbour. One such painting, by R.P. Atkinson and dating to circa 1870, prominently features the Martello tower positioned on the hill overlooking Ringaskiddy (**Plate 3; Figure 14.10**). In most instances, including the work by Atkinson, the tower appears in the background and is not depicted in architectural detail. No additional features of cultural heritage interest are illustrated in these artworks.

14.3.7 Townland Boundaries

The Irish landscape is divided into over 62,000 townlands, a unique system of landholding in Western Europe due to its scale and antiquity (O'Connor 2001, 7). Many townlands predate the Anglo-Norman period, and Irish historical documents consistently use townland names throughout the historic period to accurately describe areas and locate events within their geographical context. In the nineteenth century, townland names and boundaries were standardised when the OS began producing large-scale maps of the country. Consequently, the townland boundaries recorded by the OS may align with older land divisions dating back to early historic times and could physically overlap with archaeological evidence of such divisions. For this reason, townlands are considered Areas of Archaeological Potential (AAPs). The entire landholding of the proposed development site lies within the townland of Ringaskiddy (Rinn an Scidigh), meaning "the point or headland" (www.logainm.ie). The headland at Ringaskiddy was likely named after the prominent Cork Skiddy family.

14.3.8 Archaeological Investigations Within and Near the Proposed Development Site

Investigations within the proposed development site

2001 – Mound Investigation

One archaeological investigation has previously taken place within the proposed development site (Lane 2001). In 2001, archaeological testing was conducted on an elongated mound measuring approximately 36m (east–west) by 9m (north–south) and 1m in height. The mound was located at the eastern end of Area 3, at the top of a steep escarpment overlooking the Hammond Lane plant. Testing concluded that the mound was of no archaeological significance, having been created as part of historical land improvement works (*ibid.*).

2010 – Foreshore Survey

In 2010, intertidal and metal detector surveys were undertaken under licence numbers 10D0032 & 10R90 along the foreshore on Gobby Beach (Purcell, 2010). This work was carried out in response to a request from An Bord Pleanála for additional information following a 2009 oral hearing on the planning application (submitted in 2008) for the proposed waste-to-energy facility and waste transfer station. No significant archaeological features were identified, although several modern features were recorded along the foreshore to the north of the area designated for coastal protection works.

2015 – Foreshore Survey

As part of the EIS prepared by Arup and submitted in 2016, further intertidal and metal detector surveys were conducted along the eastern site boundary at Gobby Beach, following consultation with the Underwater Archaeology Unit of the NMS. These surveys, carried out under licence numbers 15D0046 and 15R0050, assessed the archaeological potential of the foreshore in advance of proposed beach nourishment works associated with the proposed development. One item of archaeological significance was discovered: a small cannonball measuring 62mm in diameter. No other archaeological features or artefacts were identified, although several modern metal objects were noted. No visible archaeological features or finds were noted in the glacial till cliff face at the western end of the beach.

Archaeological Investigations near the proposed development site

2006 – Underwater Archaeological Survey

An underwater archaeological survey of part of the West Channel of Cork Harbour was conducted, along with an intertidal survey at Gobby Beach and Spike Island (Boland, 2006). These investigations were part of a proposal to construct a bridge from the public car park at Gobby Beach to Spike Island. Two features - a pipeline and timbers - were identified on the foreshore to the north of the eastern boundary of the proposed development site. These features were again identified during the intertidal and metal detector survey in 2010, to the north of the area being considered for coastal protection works. The underwater survey included a bathymetric survey, a magnetometer survey, and a side-scan sonar survey of the seabed. While numerous anomalies were detected, all were submerged in the channel, several hundred metres from the eastern site boundary.

2016 – Archaeological Investigations near Martello Tower (CO087-053)

Archaeological investigations were undertaken approximately 100m to the south and adjoining the Martello tower as part of the Haulbowline Island rehabilitation works. A geophysical survey undertaken in 2015 identified a number of features of archaeological potential which were subsequently investigated by archaeological test trenching and then retained *in situ* pending progress of the rehabilitation works (Cummins, 2016).

In 2017 these features were further investigated and additional ground was opened around them under archaeological supervision to reveal an area of prehistoric activity (Miller, 2017). In 2018, these features were excavated to reveal the following; a hearth, a possible roasting pit and two adjacent bowl furnaces, with slag indicating Developed Iron Age activity. The most significant discoveries were the footprints of four possible post-built houses, pottery fragment from the Early Neolithic and Late Bronze Age and three linear ditches running east-west. The easternmost ditch likely marked a boundary, while the central ditch contained a sherd of Late Bronze Age pottery. Numerous stake- and post-holes and possible pits were also recorded. Overall, the site revealed multi-period occupation, with evidence of prehistoric domestic and industrial activity (Miller, 2018).

14.3.9 Site Inspections

The primary objective of the site inspections was to assess the physical environment of the proposed development site and to identify any previously unrecorded features of cultural heritage significance. The inspections also evaluated current land use, topography, and environmental conditions in order to identify potential AAPs.

This site has been inspected on several occasions: The first in March 2008 as part of the Environmental Impact Statement (Sutton, 2008); again in March 2015 (Purcell, 2015), which included an intertidal and metal detector survey of Gobby Beach; and most recently in January, February and August, 2025, as part of the current EIS. Overall, the site remains largely unchanged since earlier inspections, although vegetation cover has noticeably increased.

The site is bounded on four sides by distinct natural and man-made features. To the north, the boundary is defined by the L2545 road. The eastern boundary extends to the foreshore at Gobby Beach, where a sheer glacial till cliff lies just west of the beach. On the southern side, the boundary is marked by a stone-faced bank that, while reaching 1.4 meters in height and clearly visible in 2008, is now heavily overgrown and largely obscured, making inspection difficult. Historic Ordnance Survey maps indicate two curved sections in this area that likely correspond to former path crossings near the Martello tower (CO087-053), which remains visible to the south. The western boundary is defined by the Compulsory Purchase Order (CPO) fence line for the M28, currently under construction. This line follows the alignment of the M28 route along the site's western and northwestern edges. Previously characterised by steep and heavily vegetated terrain, this area has now been cleared as part of ongoing roadworks.

General Site Description

The site extends across approximately 13.55 hectares and occupies a north-facing slope. The terrain rises from north to south, and generally from east to west. The lowest elevation, along the northern boundary with the L2545, is approximately 2.05-3.0m Ordnance Datum (OD), rising to about 41.0mOD at the southern boundary near the Martello Tower (CO087-053), located in the adjoining field.

Currently, the site is covered in scrub, with pockets of trees and open grass. There are no buildings or standing structures on-site. The landscape ascends from flat ground at the northern edge to a steep escarpment, beyond which it rises more gently to the southern ridge crest. Anecdotal evidence suggests the escarpment resulted from historical material extraction activities, likely undertaken for land reclamation projects in Ringaskiddy.

The site's outer boundary is roughly rectangular, narrowing at the eastern and western ends. Centrally located within the Indaver site is the Hammond Lane Metal Recycling Company Ltd yard, which has its own entrance from the L2545 and is not part of the proposed development. An ESB Networks (ESBN) compound (Lough Beg Substation) lies between the Hammond Lane yard and the Indaver site's eastern boundary. Refer to **Figures 4.1 and 4.2** for the existing site layout.

Proposed Development Areas

The proposed site is divided into six distinct areas, as shown in **Plate 1; Figure 14.8**. Photographs from the 2025 walkover inspection are included in **Figures 14.11–14.20**.

Area 1 – Northern Area ("Western Fields")

Located west of the Hammond Lane entrance, along the site's northern boundary, this area was under arable cultivation in 2015 but has since reverted to rough pasture with tree planting. No archaeological or cultural heritage features were identified during inspections (**Plates 4 and 5; Figure 14.11**).

Area 2 – Waste-to-Energy Facility Location

Extending east of the Hammond Lane entrance to the glacial till face and Cork Harbour's edge, this area is largely undeveloped and overgrown with dense gorse and brambles. The ground is boggy in places, particularly along the northern edge. Access is limited due to thick vegetation and uneven terrain (**Plates 6 and 7; Figure 14.12 and Plates 8 and 9; Figure 14.13**). A modern farm track runs from the L2545, curving south and east near the southern boundary. This track intersects with a section of the historic path from the Martello Tower to Gobby Beach. No archaeological or cultural heritage features were identified.

A small, rectangular parcel of land within the northeastern section of **Area 2**, which is not under Indaver ownership, is fully enclosed by the proposed development site. No construction or development works are proposed within this area. Refer to **Figures 4.1 and 4.2** for location and context.

Area 3 – Southern Pastureland

Situated along the elevated southern perimeter, this area widens toward the west and slopes steeply down toward the site's northwestern corner. The M28 CPO fence line traverses this section (**Plates 10 and 11; Figure 14.14**). No cultural heritage or archaeological features were identified during any inspections.

Area 4 – Central Overgrown Slopes

This area includes land fenced off for M28 works to the west and a central zone with steep slopes, mature trees, and dense undergrowth (**Plates 12 and 13; Figure 14.15**). A low mound in the eastern section, archaeologically tested in 2001 (Lane, 2001), was found to be of no archaeological significance. No heritage features were recorded during the 2025 inspection.

Area 5 – L2545 and Gobby Beach Car Park

This area comprises the L2545 road corridor and the Gobby Beach public car park, both under Indaver ownership. These hardstanding surfaces showed no evidence of cultural heritage features (**Plates 14 and 15; Figure 14.16**).

Area 6 – Gobby Beach Foreshore

This area lies above the foreshore, along the eastern boundary. It features a glacial till cliff face that is shallow near the car park but increases in height to 10–12 m toward the south. No features of heritage interest were identified during inspections (**Plates 16 and 17; Figure 14.17**).

14.4 Characteristics of the Proposed Development

The proposed development comprises several key components, each with varying potential to affect known or unknown archaeological features. Full technical details are provided in **Chapter 4 *Description of the Proposed Development***, while a summary of the principal elements and their potential implications for the archaeological environment is outlined below.

Waste-to-Energy Facility – Area 2

The main waste-to-energy facility will be located in Area 2, east of the Hammond Lane facility. This area will accommodate the primary infrastructure, including:

- Process and turbine buildings

- Chimney stack (75 m OD)
- Aero condenser
- Fire water tank
- Substation and administration facilities

Ground levels in Area 2 will be significantly reduced, by up to 12 m, to establish two development platforms. Extensive excavation and ground modification will be required, including the construction of retaining structures along the southern and eastern site boundaries. These activities involve substantial subsurface disturbance and carry a moderate to high risk of affecting previously unrecorded archaeological deposits, particularly due to the site's proximity to historic shoreline activity and coastal defence infrastructure.

Raising Ground levels and Construction Compound – Area 1

In Area 1, to the north, ground levels will be raised to mitigate localised flood risk. Topsoil stripping and placement of fill will occur across this area. A temporary construction compound will also be established here.

14.4.1 Construction Phase Disturbance

Both **Areas 1 and 2** will be disturbed during construction. In Area 2, topsoil and subsoil will be removed to allow for site cutting and foundation works. In Area 1, topsoil will be removed and replaced with fill to raise ground levels. These activities may affect previously unrecorded archaeological or cultural heritage features. Mitigation measures are detailed in **Section 14.6.1**.

Amenity Walkway and Viewing Platform – Areas 2 and 3

An amenity walkway, including a viewing platform, forms part of the proposed development. It will begin at the existing car park (**Area 5**) at Gobby Beach and run close to the eastern and southern boundaries of the site. The path will provide a pedestrian connection from Gobby Beach (Area 6) around the development area toward the Martello Tower at Ringaskiddy.

A viewing platform will be located near the southern site boundary in Area 3, and from there the walkway will continue west toward the Martello Tower. To minimise visual effect, the path will be screened along its western and northern sides to reduce visibility of the waste-to-energy facility. The walkway will terminate at the southern boundary of the site. The absence of ground disturbance means that no direct or indirect effect on potential subsurface archaeology is anticipated, therefore no archaeological mitigation is required.

14.4.2 Upgrade of the L2545 Road – Area 5

It is proposed to upgrade the L2545 road along the northern boundary of the site (refer to **Chapter 4 Description of the Proposed Development** for technical details). The road, which was constructed between 1842 and 1902, may have already affected any archaeological or heritage features in the area.

The proposed upgrade works will remain within the existing road corridor and will not extend into adjacent ground. Therefore, no archaeological mitigation is required.

Coastal Protection Works at Gobby Beach – Area 6

Coastal protection measures are proposed along the eastern boundary of the proposed development site, above the foreshore at Gobby Beach, to reduce erosion of the glacial till face. The works will involve the deposition of appropriately sized rounded shingle at the base of the slope. The shingle will not extend into the intertidal zone beyond the foreshore.

No excavation will be required. All works will be confined to land above the High Water Mark (HWM). However, previously unrecorded sub-surface features may survive on Gobby Beach and could be affected by machinery traversing the area above the HWM line. Mitigation measures are outlined in **Section 14.6.1**.

14.4.3 Connection to the National Electrical Grid – Area 2

Two grid connection options (A and B) are proposed for the proposed development:

Option A: Connection via Lough Beg Substation

The existing ESB Lough Beg substation is located adjacent to the eastern boundary of the Hammond Lane facility. This option would involve the installation of a 38kV underground cable running from Invader's substation compound to the ESB substation. The cable route would remain entirely within Indaver-owned lands, except for the final section, which crosses into ESB Networks (ESBN) lands.

Option B: Connection via 110 kV Pylon to the South

This option proposes the reuse of an existing, currently unused 110 kV transmission line located to the south of the site. ESBN may repurpose this infrastructure to support a 38 kV connection. The works would involve:

- Trenching along the alignment of the existing 10 kV overhead line, which would be replaced with underground cabling
- Approximately 15 metres of additional trenching to reach the 110 kV pylon at the southern boundary of the site

Associated works would also be undertaken by ESBN at the Barnahely substation to complete the connection.

Both options would involve ground disturbance with the potential to effect subsurface archaeological remains. Mitigation measures are set out in **Section 14.6.1**.

14.5 Potential Effects

This section evaluates the likely significant effects of the proposed development on the archaeological, architectural and cultural heritage landscape with reference to the EPA Description of Effects (2022). The effects are described as either positive, neutral or negative under the following headings:

- Imperceptible – An effect capable of measurement but without significant consequences
- Not Significant – An effect which causes noticeable changes in the character of the environment but without significant consequences
- Slight Effects – An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
- Moderate Effects – An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends
- Significant Effects – An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment
- Very Significant – An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment
- Profound Effects – An effect which obliterates sensitive characteristics

14.5.1 'Do-Nothing' Effects

In the absence of the proposed development, the existing landscape and land use will remain unchanged. No new ground disturbance would occur, and the site's archaeological and cultural heritage resources - both recorded and potential - would remain unaffected. The Martello Tower and its setting would not experience any alteration in visibility or context. Accordingly, under the '*Do-Nothing*' scenario, no effect (neutral in quality, not significant, and permanent in duration) would occur to the cultural heritage resource.

14.5.2 Construction Phase – Potential Direct and Indirect Effects

14.5.2.1 Recorded Archaeological Monuments and Architectural Structures

There are no recorded archaeological monuments within the proposed development site. The nearest recorded archaeological site is a Martello tower (CO087-053), located approximately 70m to the south on adjoining land. The enclosing wall and associated ditch lie approximately 30m south of the proposed development site boundary. The Zone of Notification (ZON) associated with this monument extends into the southern portion of the proposed development site. A path extending northeast from the tower to Gobby beach is considered part of the curtilage of the tower.

The Martello tower is designated as a PS (RPS No. 575) and is listed in the NIAH (Reg. No. 20987047), where it is rated as being of regional importance.

No direct physical effect will occur to the Martello tower, its enclosing features, or its immediate setting. No groundworks are proposed within or adjacent to the monument or its ZON. Therefore, the effect on the Martello tower is assessed as Neutral in quality, Imperceptible in significance and Permanent in duration. As no effect is predicted, no mitigation is required.

14.5.2.2 Historic Path and Associated Setting

Historic Ordnance Survey maps, from the mid-19th to mid-20th centuries, show a path leading northeast from the Martello Tower to Gobby Beach, likely forming part of its original curtilage and military landscape. The feature is no longer extant, with walkover surveys in 2008, 2015, and 2025 confirming no visible trace. Anecdotal and field evidence suggests that land reclamation activities resulted in the removal of the original soil horizon and modification of the escarpment, removing any trace of this feature. As a result, no direct physical effect will occur along the former path alignment.

However, the proposed construction of a building along this historic alignment has the potential to affect the interpretation and understanding of the Martello tower's historic setting. Although the path - located within both the ZON and the broader curtilage of the Tower - is no longer visible, its alignment played an important role in the tower's military function and spatial relationship with the coastline. New development along this alignment may subtly erode the contextual understanding of the original defensive landscape. Accordingly, the effect is assessed as Negative in quality, Moderate in significance, Indirect in nature and Long-term in duration. Mitigation measures are outlined in **Section 14.6.1**.

14.5.2.3 Ground Disturbance and Potential for Unknown Archaeology

Construction activities will require significant ground disturbance, particularly in Area 2, where ground reduction will be extensive, and in Area 1, where topsoil will be removed and ground levels raised. These activities have the potential to directly affect any previously unknown subsurface archaeological material in the absence of mitigation.

While no archaeological features were observed during the site inspection, dense vegetation, especially in Areas 2 and 4, limited visibility. One denuded field boundary was recorded in Area 4 and corresponds to a boundary shown on the 1st edition OS map, although it is not aligned with a townland boundary. Other similar features may survive in vegetation cover.

In the absence of mitigation, construction works - particularly topsoil stripping, excavation, and subsoil disturbance, could result in Negative, Potentially Significant and Permanent effects on unknown archaeological remains.

In accordance with best archaeological practice and national guidance, mitigation will include archaeological testing in advance of construction, and where necessary, preservation *in situ* or preservation by record through full archaeological excavation, subject to the agreement of the National Monuments Service.

The potential effect is therefore assessed as Negative in quality, Significant in significance, Direct in nature and Permanent in duration (pending the results of archaeological testing). Mitigation measures are outlined in **Section 14.6.1**.

14.5.2.4 Amenity Walkway

An amenity walkway will be constructed to link Gobby Beach with the Martello Tower, following a route along the eastern boundary of Area 2 and the southern boundary of Area 3. The 1.8-metre-wide path will be laid on a geo-cell base and surfaced with bitumen macadam, with topsoil built up on either side to form finished path edges. This method avoids excavation or significant ground reduction.

As the construction methodology is designed to minimise subsurface intrusion, the walkway is not expected to affect any buried archaeological material that may survive along this route. The absence of ground disturbance means that no direct or indirect effect on potential subsurface archaeology is anticipated.

Accordingly, the effect is assessed as Neutral in quality, Not Significant in significance and Permanent in duration. As no effect is predicted, no mitigation is required.

14.5.2.5 Other Site Areas

Area 3 and Area 4

No groundworks are proposed in the remainder of these areas. As there will be no excavation or subsurface disturbance, the development will not result in any direct or indirect effects on archaeological features. The effect is therefore assessed as Neutral in quality, Not Significant in significance and Permanent in duration.

L2545 Local Road

The proposed works involve raising the existing road level. As this road has been subject to previous construction and disturbance, any subsurface archaeological features are likely to have already been affected or removed. The additional works are expected to have minimal archaeological effect. The effect is therefore assessed as Neutral in quality, Imperceptible in significance and Temporary to Short-term in duration.

Coastal Protection Works (Gobby Beach)

At the base of the glacial till slope at Gobby Beach, approximately 1,150m³ of imported rounded shingle will be deposited. This activity does not involve excavation. However, machinery access across the beach may result in localised surface disturbance. While the potential for subsurface archaeological material in this dynamic coastal environment is low, the possibility cannot be entirely excluded. Accordingly, the effect is assessed as Slight in significance, Negative in quality and Temporary in duration. Mitigation measures are outlined in **Section 14.6.1**.

14.5.2.6 Connection to the National Electrical Grid – Area 2

Two grid connection options (A and B) are proposed for the development:

Option A - The Lough Beg Substation Option

Most of the groundworks will occur within Indaver-owned lands or within the already-developed ESNB Lough Beg substation. The trenching required (approx. 5m) is relatively shallow and short. The area is likely previously disturbed or developed, reducing the potential for archaeological features. Therefore, the likely effects are assessed as Slight in significance, Negative in quality and Short-term in duration.

Option B - 110kV Pylon

This involves a longer underground trench route, including new trenching from the site to the pylon at the southern boundary, and possibly across less disturbed ground. There's a higher potential (though still low overall) for encountering subsurface features, especially if any part of the route crosses previously undeveloped land. Therefore, the likely effects are assessed as Slight in significance, Negative in quality and Short-term in duration.

14.5.3 Operational Phase – Potential Effects

No direct or significant adverse operational effects on recorded archaeology, architectural heritage or cultural heritage are anticipated as a result of the operation of the proposed development.

An amenity walkway will be provided along the eastern and southern boundary of Area 2 and the southern boundary of Area 3, linking Gobby Beach to the existing informal access route that leads southwest toward the Martello Tower. The walkway will terminate where an existing rough path crosses into adjoining lands outside of Indaver ownership. A viewing platform will be located at the southeastern corner of the walkway, offering panoramic views of Spike Island and Cork Harbour.

The path will be constructed using a no-dig method, avoiding ground reduction and thereby minimising any potential for disturbance to subsurface archaeological remains.

In addition to improving access, the walkway and viewing platform will enhance public engagement with the area's historic coastal landscape. By formalising and managing access to the Martello Tower through the provision of safe and respectful infrastructure, the development contributes to the interpretation and appreciation of local heritage.

Accordingly, the operational phase effect on cultural heritage is assessed as Positive in quality, Moderate in significance and Long-term in duration.

14.5.3.1 The Martello Tower – Visual Effect

An assessment of the visual effect of the proposed development on the Martello tower (RMP CO087-053; RPS No. 00575) is presented in **Chapter 11 Landscape and Visual Assessment**, supported by a series of photomontages.

The Martello tower (CO087-053---; PS 575), located on adjoining lands to the south of the proposed development site, occupies the high point of the Ringaskiddy Peninsula (**Plate 18; Figure 14.18**). From this elevated position, it commands extensive views across Cork Harbour - to the east and north towards Spike Island, Haulbowline Island, and Great Island, and west and northwest across the River Lee at Monkstown and further inland.

The surrounding landscape has changed significantly since the tower's construction in the early 19th century. Once part of the rural military landscape, the area has undergone land reclamation, urbanisation, port expansion and industrialisation, altering the tower's historic setting. While the southern and western surroundings already feature large-scale industrial structures, views to the east and northeast currently retain a more open, greenfield character, providing an important remaining visual link to the tower's original defensive landscape context.

Current Visibility and Anticipated Changes

Views over the proposed development site from the Martello Tower are currently limited -particularly to the north and northeast - due to a drop in ground level beyond the southern field boundary (see **Plate 19; Figure 14.19** and **Plate 20; Figure 14.20**). Instead, the northern view is dominated by intermediate and distant features such as Haulbowline and Great Island. To the northeast, views extend across open pasture toward Spike Island and Great Island.

Upon completion of the proposed development, the upper portion of the main process building and its stack will be visible from the Martello Tower. However, the building's orientation places its narrowest elevation facing the tower, helping to reduce its perceived mass from this sensitive viewpoint. While partial obstruction of the northwestern portion of Spike Island will occur, views toward Fort Mitchell and other key heritage sites across Cork Harbour will remain intact.

Effect on Views from the Martello Tower

The Martello Tower is part of a broader 19th century coastal defence network, which includes:

- Fort Mitchell formerly Westmoreland Fort (CO087-065003; PS 1272) on Spike Island to the northeast

- Haulbowline Martello tower (CO087-059002; PS578) and military buildings (fort; CO087-059003) on Haulbowline Island to the north
- Coastal forts at the harbour entrance: Carlisle Fort Davis (CO087-058) and Camden Fort Meagher (CO099-024; PS1010) to the southeast

The proposed development will partially obstruct views northeast from the Martello Tower, particularly toward Spike Island. The stack, while a prominent vertical feature, will appear slender and will be set back into the ridgeline. Visual mitigation measures, including the use of sensitive façade colours and the introduction of landscape mounding and planting, will reduce the development's prominence over time, particularly from more elevated or distant viewpoints.

While Fort Mitchell on Spike Island will remain visible, the northwestern portion of the Island will be obscured by the main process building and stack. Views northward toward Haulbowline and Great Island, and southeast toward Camden Fort Meagher and Carlisle Fort Davis, will remain unaffected. The proposed development occurs in a context already shaped by industrial land use and does not represent an unprecedented form of development in the area.

Effect on Views Toward the Martello Tower

The proposed development will alter views towards the Martello Tower, particularly from the northeast. Currently a prominent visual landmark, the tower is visible from many parts of the lower harbour including the narrow channel between Spike Island and Marloag Point (Great Island). The introduction of a large-scale industrial complex nearby will reduce the tower's visual prominence from this direction, as new elements will partially intrude into the open eastern slope that currently frames the tower's historic setting.

While the tower's immediate setting is currently characterised by its position on a local high point within a predominantly greenfield landscape, the wider surrounding area has already undergone extensive industrial development. To the north lies the heavily industrialised Port of Ringaskiddy, while to the south and west are various factories. The open eastern view, comprising a relatively undeveloped greenfield landscape, remains the principal aspect that retains something of the tower's historic military context and landscape significance.

The proposed development will introduce prominent built elements into this eastern view, extending above the ridgeline and interrupting the previously open backdrop. However, the tower will remain visible from key vantage points, and its distinctive silhouette will continue to register within the wider landscape. The visual change reflects an ongoing pattern of industrial expansion in the Ringaskiddy area and will be mitigated in part through the alignment, scale, and architectural treatment of the proposed structures.

Overall Effect

The proposed development will result in direct and permanent changes to:

- Views *from* the Martello Tower toward the northeast including Marloag Point and the northwest portion of Spike Island, and
- Views *toward* the tower from surrounding parts of Cork Harbour, particularly from the northeast

While some partial obstruction of views will occur and the open eastern backdrop to the tower will be affected, important sightlines, including those to and from Fort Mitchell on Spike Island, Haulbowline Martello Tower and military buildings on Haulbowline Island and the coastal forts at the harbour entrance, Camden Fort Meagher and Carlisle Fort Davis, will remain largely intact. The Martello Tower's strategic position, distinctive silhouette, and role within the harbour's historic military network will continue to be legible within the wider landscape. The proposed development has been designed with visual sensitivity in mind, with the alignment, scale, colour, and form of the main building, as well as the slender profile of the stack, helping to reduce its prominence in more distant views.

The cumulative presence of existing industrial infrastructure has already influenced the tower's setting, and while the development will add to this backdrop, it will generally be read as part of the broader industrial landscape that now characterises the Ringaskiddy Peninsula. Nevertheless, the change will contribute to the ongoing shift in landscape character from mixed rural-industrial to one more dominated by heavy industry, with the most significant negative effects localised to the immediate environs of the Martello Tower.

The effect is therefore assessed as: Negative in quality, moderate to significant in significance (depending on viewpoint), and permanent in duration.

14.6 Mitigation and Monitoring Measures

14.6.1 Construction Phase

The construction phase of the proposed development will involve ground disturbance with the potential to affect previously unrecorded sub-surface archaeological remains. The primary areas of effect are confined to three zones:

- Area 1 (Western Fields)
- Area 2 (site of Waste-to-energy facility)
- Portion of Area 3 (along the southern boundary, associated with the proposed amenity walkway)

Ground disturbance in Areas 1 and 2 will involve ground reduction and associated works. In contrast, the amenity walkway in Area 3 will be constructed using a no-dig methodology, thereby preserving any potential sub-surface archaeological material in this location. No ground reduction is proposed for the remainder of Areas 3 or 4, and as such, no archaeological mitigation is required in these areas.

All undisturbed areas, excluding the walkway footprint, will be securely fenced during construction to prevent inadvertent disturbance.

Pre-Construction Investigations

In consultation with the Cork County Council Archaeologist (Ms. Annette Quinn), a programme of licensed archaeological investigation will be undertaken in Areas 1 and 2 in advance of construction. This will include:

- Geophysical Survey in Area 1, subject to suitable ground conditions
- Archaeological Testing in both Area 1 (to investigate any anomalies identified during the geophysical survey) and Area 2 (where ground conditions preclude geophysical survey)

The purpose of this investigation is to establish the presence, extent, and significance of any archaeological material. All works will be carried out under licence issued by the National Monuments Service and in accordance with the *Policy and Guidelines on Archaeological Excavation* (Department of Arts, Heritage, Gaeltacht and the Islands, 1999).

In addition, monitored vegetation clearance and targeted archaeological testing will be carried out along the line of the path from Gobby Beach to the Martello Tower, as shown on the first, second, and third editions of the OS maps. The aim of the testing is to determine whether any section of the original path remains intact.

Should archaeological features be identified during the course of these investigations, they will be resolved to professional archaeological standards, either by preservation *in situ* or preservation by record, as appropriate.

L2545 Road Upgrade

The proposed upgrade of the L2545 will occur within the existing road footprint. As no new ground disturbance is proposed, no archaeological mitigation is considered necessary for this element of the development.

Coastal Protection Works at Gobby Beach

An intertidal and metal detector survey was conducted at Gobby Beach in May 2015, extending across the intertidal and foreshore area to the base of the glacial till slope on the eastern site boundary. The survey identified a single find: a cast-iron cannonball (62 mm diameter). No other artefacts or features were identified.

The proposed coastal protection works will be confined entirely to the area above the high water mark, and no works will take place within the intertidal zone. However, given the potential for unrecorded sub-surface features immediately adjacent to the foreshore area, the following mitigation strategy will be implemented during coastal protection works:

- A single, clearly defined access route to the base of the glacial till slope will be established and fenced off for the duration of the works
- All groundworks in this area will be subject to archaeological monitoring
- Any archaeological features or artefacts identified will be addressed through preservation in situ or preservation by record, as appropriate

14.6.1.1 Connection to the National Electrical Grid – Area 2

Two grid connection options (A and B) are proposed for the development:

Archaeological monitoring will be undertaken during the groundworks associated with the proposed grid connections; options A and B. Should archaeological features be identified, they will be resolved to professional archaeological standards, either by preservation *in situ* or preservation by record, as appropriate.

Martello Tower Vibration Monitoring

In consultation with the Cork County Council Conservation Officer (Ms. Elena Turk), it is acknowledged that while the proposed development will not physically intrude on the Ringaskiddy Martello Tower (RMP CO087-053; RPS No. 575), the monument may be sensitive to construction-related vibration, particularly during groundworks.

The tower forms part of a wider defensive complex, including its enclosing circular wall and associated ditch, which collectively contribute to its architectural and historical significance. As such, any effect on the structural integrity of these features, either through ground borne vibration or settlement, will be proactively assessed and managed. A programme of vibration monitoring will be implemented throughout the construction phase to assess and manage any potential effects on the structural integrity of the monument.

14.6.2 Operational Phase

An assessment of the visual effect of the proposed development on the Martello tower (RMP CO087-053; RPS No. 00575) is presented in **Chapter 11 Landscape and Visual Assessment**, supported by a series of photomontages. The visual effect will be mitigated through a combination of design measures and site layout considerations, as outlined below:

- The waste-to-energy facility will be located in a substantial cut at the eastern end of the site. This will screen much of the proposed development from view, significantly reducing its visual presence in the surrounding landscape.
- No buildings are proposed along the southern boundary of the site near the Martello tower. The existing field boundary in this location will be retained, ensuring the protection of key views. In particular, the view from the Martello tower to the north, overlooking Haulbowline Island and Great Island, will remain unobstructed.
- The upper sections of the main process buildings and the upper portion of the stack will be visible from the top of the ridge and from the Martello tower when looking northeast towards Spike Island. However, the orientation, massing, and external finishes of these structures have been carefully designed to minimise their visual effect. The main process building will be clad in varying shades of natural green to blend with the darker hues of the ridge and the lighter tones of the sky at higher elevations. The stack will be coloured off-white to grey. On occasion, depending on atmospheric conditions such as temperature and wind speed, a short, thin steam plume may be visible from the stack.

In addition, the proposed amenity walkway extending from Gobby Beach, through the eastern boundary of the proposed development site and along the southern boundary of the Indaver lands -together with the associated viewing platform - will enhance public access to the Martello Tower.

The formalisation of this route across Indaver-owned lands is expected to have a positive effect on the accessibility and visibility of the monument, supporting its appreciation and continued integration into the cultural landscape.

14.7 Residual Effects

The construction and operation of the proposed development will give rise to a number of residual effects on the archaeological and cultural heritage resource. These effects remain after the implementation of all recommended mitigation measures and are described below in accordance with the EPA (2022) *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*.

14.7.1 Effect on Access Path to Ringaskiddy Martello Tower

The proposed development will involve ground excavation of the landscape through which the path connecting Gobby Beach to the Ringaskiddy Martello Tower (RMP CO087-053; RPS No. 575) once extended. This path is depicted on the first, second, and third edition OS maps and is considered part of the tower's historic curtilage and military landscape.

Although the path is no longer visible at surface level, its historic alignment will be permanently altered by the proposed development. This change will result in the loss of interpretation of the original approach route to the tower. The residual effect is assessed as: Negative in quality, Moderate in significance, Indirect in nature and Permanent in duration.

14.7.2 Loss of Subsurface Archaeological Features

Should archaeological features be identified during licensed archaeological investigations and subsequently deemed to require preservation by record, their permanent removal through excavation will represent a permanent loss of physical heritage.

While full excavation, documentation, and post-excavation analysis (as guided by the 1999 Policy and Guidelines on Archaeological Excavation) will mitigate the physical loss, the destruction of the in-situ resource remains unavoidable. However, the resulting information will contribute to a broader understanding of past activity in the area, thereby offsetting the loss with long-term academic and public benefit.

The residual effect is assessed as: Negative in quality, Significant in significance, Direct in nature, and Permanent in duration.

14.7.3 Visual and Perceptual Effects on Martello Tower Setting

The visual setting of the early 19th century Martello Tower has already been significantly altered by historic and modern development, including land reclamation, industrialisation, and urban expansion within Cork Harbour. The proposed development will add to this cumulative transformation.

The stack and upper levels of the main process building will be visible from the Martello Tower, partially obstructing north-eastward views. Although key sightlines, such as those to Fort Mitchell on Spike Island, will be retained, the northwestern part of the island will be obscured by the new facility. This change will alter how the tower relates visually to elements of the historic coastal defence network.

In addition, from certain harbour viewpoints, particularly from the inner harbour corridor northeast of Spike Island toward Marloag Point on Great Island, the Martello Tower will be partially or fully obscured. This results in a permanent alteration of the cultural landscape, diminishing the tower's prominence and legibility within the historic defence system of the lower harbour.

The residual effect is assessed as: Negative in quality, Moderate in significance, Indirect in nature, and Permanent in duration.

14.8 Cumulative Effects

A number of existing and proposed development projects are located within the wider Cork Harbour area as detailed in **Table 14.3**. These include infrastructure works, industrial expansions and port-related developments, many of which are concentrated in or near the townlands of Ringaskiddy, Loughbeg and Ballybricken.

When assessed collectively, these projects are not predicted to give rise to significant cumulative effects on known archaeological, architectural or cultural heritage of the area. Most developments are situated within already modified or industrialised landscapes.

However, certain large-scale projects - particularly the proposed Resource Recovery Centre, the M28 Cork to Ringaskiddy Motorway Scheme, and the Port of Cork redevelopment - will involve substantial ground disturbance, including marine-based works. These activities present a moderate risk of encountering previously unrecorded archaeological material. Should archaeological material be discovered during such works and preserved by record (i.e., fully excavated and documented), it will be permanently removed from the cultural landscape. While this represents a loss, it will be mitigated by adherence to archaeological best practices and regulatory guidance, thereby contributing to the broader understanding of the area's historic environment.

Table 14.3 Existing and proposed development projects within the wider Cork Harbour area

Planning Authority	Planning Ref.	Status	Development	Location	Distance
Cork County Council	224356	Granted	A new vehicular entrance off the L2545, the temporary use of lands (for a period of 10 years) for open storage of port related cargo, and all ancillary works including road / kerbside re-alignment and security fencing	L2545 Road in the townlands of Loughbeg and Ringaskiddy	0
ABP	HA04.HA0053/MA04.MA0014	Granted	M28 Cork to Ringaskiddy Motorway Scheme.	Ringaskiddy and Loughbeg townlands	0
ABP	OA04.321 875	Decision Pending	Ringaskiddy East (Container Berth 2) and Ringaskiddy West (Deepwater Berth Extension) and Road Improvements	Loughbeg and Ballybricken townlands	0.1
Cork County Council	254704	Granted	Permission for an upgrade and extension to the existing biomedicines manufacturing facility	Barnahely townland	1.4
Cork County Council	235834	Granted	Permission for construction of Bld. 124 - Site Lab Building. This will comprise a new five-storey building (circa 10,881 square metres with a maximum height of circa 30.2m above ground) which will include laboratories, a canteen, ancillary office space and plant and utility space, and associated site development works	Ballintaggart and Ballybricken townlands	2.2

Planning Authority	Planning Ref.	Status	Development	Location	Distance
Cork County Council	235104	Granted	Development is sought for a period of 10 years at a 10.22 hectares site within ESB Aghada Generating Station consisting of 1) Construction/installation of an open cycle gas turbine (OCGT) generating unit and associated plant and equipment	ESB Aghada Generating Station, Ballincarroonig townland	4.6

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