

14 Archaeological, Architectural and Cultural Heritage

14.1 Introduction

This chapter comprises an evaluation of the potential impact of the proposed Ringaskiddy Resource Recovery Centre on archaeological, architectural and cultural heritage. The purpose of the appraisal is to evaluate the potential impact the proposed development will have on the archaeological, architectural and cultural heritage of the development site and the surrounding area. The assessment was carried out by Lane Purcell Archaeology. Refer also to Figures 14.1 – 14.6 and to Plates 1 – 23 which are presented in Figures 14.7 to 14.12.

The proposed development will be located on the Ringaskiddy Peninsula, overlooking Cork's lower harbour approximately 800m east of the village of Ringaskiddy in County Cork. The site of the proposed development is currently greenfield, approximately 13.5 hectares and is located on the northern slopes of the Ringaskiddy peninsula at its eastern end. Refer to Figure 1.1 (site location), Figure 14.1 and Plate 1.

The proposed development will consist principally of a waste-to-energy facility (waste incinerator) for the treatment of residual, household, commercial and industrial non-hazardous and hazardous waste. In addition, the proposed development will include an upgrade of a section of the L2545 road, a connection to the national electrical grid, an increase in ground levels in part of the site, coastal protection measures above the foreshore on Gobby beach and an amenity walkway to the Ringaskiddy Martello tower.

The proposed development is described in detail in **Chapter 4, Project Description** of this EIS.

There are no recorded archaeological sites within the proposed development site including the area proposed for coastal protection and the section of L2545 to be upgraded (Figure 14.1). There are no protected structures within the proposed development site that are listed in the Cork County Development Plan 2014 or the National Inventory of Architectural Heritage for County Cork. There are no cultural heritage sites within the proposed development site. A Martello tower, listed in the Record of Monuments and Places, (RMP No. CO087-053---) stands approximately 70m to the south of the proposed development site and part of the site lies within the Zone of Archaeological Potential (ZAP) or Zone of Notification for this recorded monument. Ordnance Survey maps show that a path once led north-east through the proposed development site from the Martello tower to the sea shore at the eastern end of the Ringaskiddy peninsula. The Martello tower is also listed in the Record of Protected Structures (RPS 00575) in the Cork County Development Plan 2014 and the National Inventory of Architectural Heritage for County Cork (Registration No. 20987047). The path associated with the tower is considered to be a part of the curtilage of the Protected Structure.

In all, there are 50 recorded archaeological sites within a 2km radius of the proposed development site that are listed in the Record of Monuments and Places for County Cork (RMP) and the Sites and Monuments Record (SMR) Database of the Archaeological Survey of Ireland (ASI) (Figure 14.1). These

monuments reflect the archaeological background of the area surrounding the proposed development site and the archaeological potential of the proposed development site itself.

Some terms used in this chapter are explained hereunder:

14.1.1.1 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”.

14.1.1.2 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.

14.1.1.3 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 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.

14.1.1.4 Study Area

In order to obtain a comprehensive assessment of the Cultural Heritage Environment, a study area within a 2km radius of the proposed development site was chosen.

14.2 Methodology

The methodology for the cultural heritage section of the EIS consists of the following steps:

- A review of the relevant legislation and guidelines.
- A desktop assessment of the proposed development site and Study Area.
- A survey or inspection of the proposed development site.

- An evaluation of the likely impacts of the proposed development on the archaeological, architectural and cultural heritage of the proposed development site and study area.
- Proposed mitigation measures to be undertaken to prevent or reduce any potential impacts on the archaeological, architectural and cultural heritage.

14.2.1 Legislation and Guidelines

In Ireland, the principal legislative measures protecting cultural heritage assets are the National Monument (Amendments) Acts 1930 to 2004, 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. Moreover, policies for both the archaeological and architectural heritage are relayed in a series of specific published guidelines.

This chapter is prepared having regard to the following guidelines:

- Guidelines on the information to be contained in Environmental Impact Statements, (Environmental Protection Agency, 2002) and Draft Revised Guidelines (2015).
- Advice Notes on Current Practice in the Preparation of Environmental Impact Statements, (Environmental Protection Agency, 2003) and Draft Revised Advice Notes (2015).
- 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).

Comprehensive guidelines on the treatment of the archaeological and architectural heritage during the planning and design of national road schemes were published by the National Roads Authority in 2005. These were also used as a guide in the compilation of this EIS.

- Guidelines for the assessment of Archaeological Heritage Impacts of National Road Schemes, (NRA, 2005a).
- Guidelines for the assessment of Architectural Heritage Impacts of National Road Schemes, (NRA, 2005b).

14.2.2 Desktop Study

The desktop study provided an overview of the cultural heritage features of the proposed development site and study area, and used the following sources.

14.2.2.1 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 believed 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 Archaeological Potential (ZAP)* or zone of notification for that site. Its diameter can vary depending on the size and shape of the site but it averages out at approximately 180m. The RMP for County Cork was published in 1998.

14.2.2.2 Sites and Monuments Record Database of the ASI

The purpose of the Archaeological Survey of Ireland (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. This database, complete with maps, is available for consultation via the NMS website at www.archaeology.ie

14.2.2.3 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. (Details of the published sites within the study area are given in **Appendix 14.4**).

14.2.2.4 Consultations

During the compilation of the EIS the following was consulted:

- County Archaeologist, Cork County Council
- County Conservation Officer, Cork County Council
- National Monuments Service Archaeologist for County Cork
- Underwater Archaeology Unit, National Monuments Service

Details of correspondence are included in Appendix 14.1

14.2.2.5 Files of the National Monuments Service (NMS), Department of Arts, Heritage and the Gaeltacht

The NMS was consulted in order 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)

14.2.2.6 Files of the National Museum of Ireland (NMI)

The topographic files of the NMI were searched for the townlands in the study area. The finds recovered from the 1932 excavation at Curraghbinny Hill are recorded in the files. No stray finds are recorded from any of the townlands.

14.2.2.7 Cork County Development Plan (2014)

The Cork County Development Plan (2014) outlines Cork County Council's objectives with regard to the preservation of the archaeological, architectural and cultural heritage of the County. The plan also outlines the Council's objectives regarding the protection of the archaeological heritage, including the protection of monuments listed in the Sites and Monuments Record and Record of Monuments and Places, by preservation *in situ*, or in exceptional cases, preservation by record. It also aims to safeguard 'sites and settings, features and objects of archaeological interest generally'. The zones of archaeological potential identified in the RMP are to be protected, as are underwater archaeology and historic towns. The County Development Plan [CDP] states that the significance of medieval archaeology, industrial and post medieval archaeology, battlefield and siege sites, as well as structures shown on the 1st and 2nd edition Ordnance Survey 6 inch maps are to be assessed prior to any development. The Plan also states that the maintenance of burial grounds will be encouraged through appropriate maintenance and conservation, and that where development may have an impact on the archaeological heritage, an archaeological assessment will be required, and appropriate mitigation measures shall be put in place.

The CDP states that preservation *in situ* is the preferred option, and that there must be compelling reasons to justify preservation by record. Development that does not compromise sub-surface archaeological remains will be encouraged, and development that does not have a visual or physical impact on the setting of a monument will be favoured. According to the CDP, previously unidentified archaeological sites that are uncovered during construction works must be investigated and recorded.

The rich and varied architectural heritage of the County is protected through the inclusion of buildings in the Record of Protected Structures (RPS), as required in the Planning and Development Act 2000 (Part IV). This record includes all structures or parts of structures which are in the opinion of the Council of 'special, architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest'. This designation is to ensure that changes or alterations to the included buildings or their settings will be carried out in such a way that their existing special character and setting is retained and enhanced. The objectives of the Council for the RPS include:

- The identification of structures for protection according to criteria set out in Architectural Heritage Protection – *Guidelines for Planning Authorities* (2004,

2011), as well as the extension of the RPS to form a comprehensive schedule for the County.

- The protection of structures and parts of structures, listed in the RPS, as well as their curtilage and attendant grounds.
- Ensuring that development proposals for protected structures are appropriate and of high quality.
- Ensuring best conservation practises are promoted.
- Ensuring high quality architectural design of new development relating to or impacting on structures and their settings included in the RPS.

The National Inventory of Architectural Heritage (NIAH) for County Cork includes approximately 6,500 items of architectural importance in the County. The structures identified as being of international and national importance are included on the new RPS. Other structures of regional importance, were considered for inclusion in the record. Cork County Council recognises the important contribution that all historic structures, including those not on the record, make to County Cork's heritage. The Council will seek the enhancement of these elements in recognition of their "quality, character and local distinctiveness" (Cork County Development Plan 2014, Vol 1, p.194) and will "give regard to and consideration of all structures which are included in the NIAH for County Cork, which are not currently included in the Record of Protected Structures, in development management functions" (*ibid.* 195). In addition to these objectives, the Council will seek to enhance all historic structures, features and landscapes not included in the RPS as well as non-structural elements such as designed gardens, garden features, masonry walls, railings, follies, gates, bridges and street furniture.

There are no protected structures within the proposed development site. There are a number that fall within the 2km study area; the nearest is Ringaskiddy Martello Tower RPS 00575, located 70m to the south.

One of the County Development Plan's objectives is to preserve the character of a place, area, group of structures, or townscape in order to preserve the character of that area. Any "place, area, group of structures or townscape that is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or contributes to the appreciation of protected structures" is an Architectural Conservation Area (ACA). ACAs will be conserved and their special character enhanced, including their "traditional building stock and material finishes, spaces, streetscape, shop fronts, landscape and setting". This will be achieved by:

- Protecting from demolition and non-sympathetic alterations all buildings, structures, etc., and all features considered to be intrinsic elements to the special character of the ACA.
- Promoting sensitive re-use and rehabilitation of buildings and sites in the ACA.
- Ensuring new development, within or nearby, respects the established character of the area and is of high quality architectural design.
- Encouraging repair and re-use of traditional shop fronts and high quality architectural design.

- Ensuring that new signage etc. is appropriate.
- Ensuring that open spaces are protected.
- Ensuring that appropriate materials are used during public infrastructure projects.

Haulbowline Island has been designated an Architectural Conservation Area – ‘Haulbowline Conservation Area’.

The County Development Plan (2014) outlines how the rich and diverse cultural heritage of the County will be promoted and protected by Cork County Council “as an important economic asset”. The Plan includes “*language, the arts, creative industries, enjoyment of the natural, historic and built environment, events and festivals, use of tourist attractions, libraries, museums, archives and galleries, industrial heritage, the diversity of the faith communities and places of worship, local cultural traditions and sport and recreation*” as culture that helps to define the perception of the County and provides a sense of identity. The Plan acknowledges the importance of folklore, oral cultural heritage, historic heritage sites, including battle sites, historic rights of way and Irish place names.

14.2.2.8 National Inventory of Architectural Heritage (NIAH)

The National Inventory of Architectural Heritage was set up under the Convention for the Protection of the Architectural Heritage of Europe or the Granada Convention of 1985. It was established on a statutory basis under Section 2 of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999. The work of the NIAH involves identifying and recording the architectural heritage of Ireland, from 1700 to the present day, in a systematic and consistent manner. It is divided into two parts; The Building Survey and Historic Garden Survey (www.buildingsofireland.ie). The main function of both is to identify and evaluate the State’s architectural heritage in a uniform and consistent manner, so as to aid to its protection and conservation. The National Inventory of Architectural Heritage carried out a survey of the buildings of County Cork between 2006 and 2011. Under Section 53 of the Planning and Development Act 2000, all structures considered of regional, national or international Importance within the survey are recommended for inclusion in the Record of Protected Structures by the Minister for Arts Heritage and the Gaeltacht. If this is not adopted by the local authority, 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 site. The nearest garden included in the garden survey is located at Prospect Villa in Barnahely, 1km to the west of the site.

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

This website provides a database of summary accounts of archaeological excavations and investigations in Ireland undertaken between 1970 and 2015. Until 2010, these accounts were also published in book form. One archaeological investigation was undertaken within the proposed development site in 2001

(Lane in www.excavations.ie). Archaeological testing of an elongated mound was carried out in the high southern part of the site during a pre-planning assessment. This mound was determined to be of no archaeological significance as it was the result of land improvement works. A number of other archaeological investigations were undertaken within the study area, and are outlined below (section 14.3.7). The summary account of the investigation undertaken within the study area is given in Appendix 14.2.

14.2.2.10 Site-specific Publications

All available published information on the Study Area was consulted. This included historical journals, local history publications etc., all of which are listed in the bibliography.

14.2.2.11 Indaver Waste-to-Energy EIS 2008

The Archaeological, Architectural and Cultural Heritage chapter of the EIS for the Indaver Waste-to-Energy Facility, Ringaskiddy EIS (Arup 2008) was consulted.

14.2.2.12 Cartographic Sources

The following maps were consulted:

- Down Survey Parish and Barony maps (1654-1659)
- Candell's map of Cork (1587)
- The Taylor and Skinner (1778) Map of the Roads of Ireland does not extend to the study area
- 1:50,000 OSI Discovery Series
- Ordnance Survey 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, onto which the RMP was superimposed in 1998
- The 25-inch to one mile scale map, from which the second edition 6-inch map was derived in 1902 was also consulted.

14.2.2.13 Aerial Photographs

Ordnance Survey of Ireland online aerial photographs (dated 1995, 2000 and 2005) (www.osi.ie) and Google maps online aerial photographs are available for viewing (www.google.ie). These 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 apparent.

14.2.3 Site Inspection

The primary purpose of a site inspection is to assess to the physical environment in which the proposed development will take place and identify any possible features of cultural heritage significance which have not been previously recorded. Current land use, local topography and environmental conditions are

assessed to gain an overall picture of the area. The proposed development comprises *approximately* 13.5ha. A site inspection of the proposed development site was carried out on the 18 March 2015 and an intertidal and metal detector survey of Gobby Beach were carried out on the 18 May 2015.

14.3 Receiving 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 the barony of Kerrycurrihy.

The nearest extant settlement to the proposed development site is the village of Ringaskiddy, 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. Reclamation of the shoreline to the north of the proposed development site in 1979-80 subsumed three offshore islands and 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 is a summary of that account focusing on the more relevant pertinent points.

There are no recorded archaeological monuments listed in the RMP within the site of the proposed development. A recorded Martello tower (CO087-053---) stands 70m to the south of the southern site boundary. Part of the proposed development site along the southern perimeter is located within the Zone of Archaeological Potential or zone of notification for this Martello tower. The Martello tower is listed as RPS 00575 in the Record of Protected Structures in the Cork County Development Plan, 2014. A path crossing part of the area of the proposed development site is associated with the tower, and is part of the curtilage of the Protected Structure. There are 50 no. recorded archaeological sites listed in the RMP and SMR database for the 2km study area (Figure 14.1). Of these 50 sites, 7 no. have no known locations. Descriptions of most of these sites are included in the Archaeological Inventory of County Cork and these are provided in Appendix 14.4.

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

RMP	Site Type	Townland
CO087-053	Martello tower	Ringaskiddy
CO099-023	Cairn	Curraghbinny
CO087-045	Standing stone	Coolmore
CO087-096	Standing stone	Raheens (unlocated)
CO099-074	<i>Fulacht fiadh</i>	Coolmore (unlocated)
CO099-105	Possible <i>Fulacht fiadh</i>	Curraghbinny

RMP	Site Type	Townland
CO099-023	Cairn	Curraghbinny
CO087-145	<i>Fulacht fiadh</i>	Barnahely
CO087-155	Enclosure	Barnahely
CO087-132	Burnt pit	Barnahely
CO087-148	Excavation Miscellaneous	Barnahely
CO087-147	Excavation Miscellaneous	Barnahely
CO087-046	Ringfort	Raheens
CO087-047	Ringfort	Raheens
CO087-102	Souterrain	Raheens
CO087-103	Souterrain	Raheens
CO087-104	Souterrain	Raheens
CO087-048	Ringfort	Barnahely
CO087-146	Kiln – corn drying	Barnahely
CO087-156	Kiln – corn drying	Barnahely
CO087-044	Souterrain	Coolmore
CO087-068001-	Possible ringfort	Ballybricken (unlocated)
CO087-068002-	Possible souterrain	Ballybricken (unlocated)
CO087-101	Enclosure	Coolmore
CO087-061	Ecclesiastical enclosure	Ballintaggart
CO087-049	Possible church	Ballintaggart (unlocated)
CO087-051001-	Graveyard	Barnahely
CO087-051002-	Church	Barnahely
CO087-065002-	Ecclesiastical site	Spike Island
CO087-052001-	Tower house	Barnahely
CO087-052002-	Ornamental tower	Barnahely
CO087-052003	Bawn	Barnahely
CO087-128	Castle – unclassified	Shanbally (unlocated)
CO087-052004-	<i>Sheela-na-Gig</i>	Barnahely
CO087-060	Vernacular house	Barnahely
CO087-054	Midden	Ringaskiddy
CO087-161	Midden	Ringaskiddy
CO087-055	Midden	Curraghbinny
CO087-056	Midden	Curraghbinny
CO087-057	Midden	Curraghbinny
CO087-120	Midden	Barnahely
CO087-059003-	Bastioned fort	Haulbowline Island
CO087-065003-	Fortification	Spike Island
CO087-059002-	Martello tower	Haulbowline Island

RMP	Site Type	Townland
CO087-059001-	Barracks	Haulbowline Island
CO087-105	Magazine	Rocky Island
CO087-065001-	Burial ground	Spike Island
CO087-111	Country house	Barnahely
CO087-050002-	Gate lodge	Barnahely
CO087-143	Settlement Cluster	Barnahely (unlocated)

14.3.1 Mesolithic and Neolithic

The earliest evidence for human colonisation and settlement in Ireland can be dated to 7000 BC, the Mesolithic Period. There are no known archaeological sites dating to the Mesolithic or Neolithic Periods within the Study Area. The general lack of sites does not, however, mean that such early settlement and occupation were unknown to the region. Within the broader area of Cork harbour, there are a number of Neolithic sites, including a simple megalithic in Rostellan (CO088-101) on the modern shoreline, approximately 8.5km to the northeast. Within the inner reaches of the harbour, Neolithic settlement activity was discovered during development 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 in Power et al. 1994, 365).

14.3.2 Bronze Age and Iron Age

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

Although there are few sites that date definitely to the Iron Age in the study area, a number of the sites discussed below may be of Bronze Age or Iron Age date.

The Bronze Age is well represented within the study area. There is a tumulus or cairn in Curraghbinny (CO099-023---) on top of Curraghbinny hill, approximately 2km to the southeast. O'Riordán's excavation in 1932 (Power et al. 1994, 52) exposed a cairn of stones with an enclosing dry-stone wall and some fragmentary cremated human remains.

There is one standing stone in Coolmore townland (CO087-045---) approximately 2km to the southwest. The Archaeological Inventory (ibid. 22) lists a standing stone (CO087-096---) in Raheens to the south-west of the proposed development site, but this remains unlocated.

There is one fulacht fiadh in Coolmore (CO099-074---) (the location of which is unknown), and a possible fulacht fiadh in Curraghbinny (CO099-105---) approximately 2km south of the proposed development site. A third fulacht fiadh (CO087-145---) was located during archaeological testing of a site in Barnahely townland in 2004 (Cummins 2004).

An enclosure (CO087-155---), which probably represents the remains of a Bronze Age or Iron Age settlement site, was identified during investigations in Barnahely (Rossaveare and Rossaveare, 2004 and Ronan et al. 2009, 123) approximately

1km west of the proposed development site. Two pits (CO087-132---) (O'Donovan, 2004 and Ronan et al. 2009, 57) (CO087-148---) (Hanley, 2004 and Ronan et al. 2009, 357) of indeterminate date were exposed during separate archaeological investigations in Barnahely townland. A third site that revealed a pit and a stakehole (CO087-147) was located nearby also in Barnahely (Ronan et al. 2009, 357). All were located between 1.2 and 1.4km west of the proposed development site and they may be of prehistoric date.

14.3.3 Early Medieval Period

This period in Ireland is characterised by the influx and influence of Christianity, which had become widely established by the 6th century AD. Monasteries became a focal point for the lay communities of this period who were spread throughout the countryside in settlements such as ringforts/raths, crannogs and simple huts.

Several ringforts have been recorded in the study area, and some of these have associated souterrains. There are two ringforts (CO087-046---; CO087-047---) in Raheens, approximately 2km to the west of the proposed development site. Three souterrains (CO087-102---; CO087-103---; CO087-104---) were exposed during the excavation in 1989 of one of the ringforts (CO087-046---) (Power et al. 1994, 157-158). There is a ringfort in Barnahely townland (CO087-048---) 1.7km to the west; a possible souterrain or kiln along with a quern stone were found within the ringfort (Cummins 2012). Two corn drying kilns (CO087-146 and CO087-156---) were identified during earlier archaeological investigations adjacent to the ringfort (CO087-048---) (Cummins 2004). A possible collapsed souterrain (CO087-044---) was noted in ploughed soil in Coolmore approximately 2km to the southwest. The location of a ringfort (CO087-06801-) and possible souterrain (CO087-06802-) are noted in Ballybricken townland, but the precise location of the monument is unknown.

A possible small circular enclosure (CO087-101---) in Coolmore approximately 2km southwest of the proposed development site may date to the early medieval period.

There are several church or possible church sites within the study area. Some may have early medieval origins, but documentary and upstanding remains suggest later dates for some. An early ecclesiastical enclosure (CO087-061---) may have stood in Ballintaggart townland approximately 2km to the northwest and the site of an early church and graveyard (CO087-049) is shown in the adjoining Ballybricken townland on the RMP map of 1998. The graveyard at Barnahely, (CO087-051001-) approximately 1.3km west of the proposed development site, encloses the site of the former parish church of Barnahely (CO087-051002-) of which there is now no visible trace.

The ecclesiastical site on Spike Island (CO087-065002-) has been described as "identifiable with the early ecclesiastical site of Inispicht" (Hurley 1980, quoted in Power et al. 1994, 290). A map of 1625 appears to show the remains of a ruined church on the island.

Although, there is no evidence at present for Viking settlement around the harbour, a number of place names such as Dunkettle and Foaty reflect Scandinavian influence and the presence of Viking occupation of Haulbowline is mentioned as a possibility (Jefferies 1985, 14 and 16).

14.3.4 High Medieval and Late Medieval Periods

There are a small number of sites dating to the medieval period within the study area. The ruins of a tower house and part of a bawn wall (CO087-052001-, CO087-052003-) are all that remain of a 16th century castle in Barnahely approximately 1.2km southwest of the proposed development site. The site is listed as RPS 01260 in the Record of Protected Structures in the Cork County Development Plan (2014). A sheela-na-gig (CO087-052004-) found in the castle in the 19th century is now lost. A two-storey gable-ended structure was added in the 16th/17th century. Castle Warren house, constructed in 1796, stands on the same site. There is also an unlocated possible castle in Shanbally (CO087-128---) to the west of the proposed development.

There are six shell middens within the study area. Two are in Ringaskiddy (CO087-054--- and CO087-161) approximately 400m and 200m respectively to the southeast of the proposed development site. Three middens are recorded in Curraghbinny between 1.2 and 1.8km southeast of the proposed development site. These are strung out along the shore line at Lough Beg (CO087-055---) and on the northern shore of Curraghbinny hill (CO087-056---, CO087-057---). A sixth midden has been identified in Barnahely (CO087-120---) 1.3km to the west of the proposed development site.

14.3.5 Post Medieval Period

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

Closer to the Ringaskiddy peninsula, there are fortifications on both Haulbowline Island (CO087-05903-) and Spike Island (CO087-065003-); both are approximately 1km north of the proposed development site. The bastioned fort on Haulbowline Island dates from the early 17th century and other structures such as a keep and gatehouse were added in the following decades. The fort was abandoned in 1624 and remained out of use for most of the following two centuries (Gowen 1978, 246 in Power et al. 1994, 287). In 1806 the island was divided between the Admiralty and the Board of Ordnance and a number of military buildings were erected including a barracks (CO087-059001-) and six large storehouses which were constructed at the naval victualling yard (Kerrigan 1995, 194). A Martello tower (CO087-059002-) was built between 1813 and 1815 on the western side of the island. The Martello tower and limestone warehouses and offices are listed in the Record of Protected Structures in the Cork County Development Plan (2014) as RPS 00578 and RPS 00670, respectively.

A battery was built on Spike Island in 1779 but abandoned by 1783. A more defensive star-shaped fortification, Westmoreland Fort, was built under the direction of Colonel Vallancey in 1791 and work on the fort continued until at least 1860 (Power et al. 1994, 290). Upon completion the star-shaped fort

occupied over half the island and comprised “six bastions connected by ramparts and surrounded by a broad dry ditch” (Kerrigan 1995, 192). The fort was renamed Fort Mitchell in 1938 when ownership was transferred to the Irish Government. Spike Island was first used as a prison sometime in the 17th century and its use as a penal institution continued intermittently over the following centuries (Kerrigan 1995, 193). From 1985 to 2004 it was used as a civilian prison by the Department of Justice. There is a military cemetery on the south-western corner of Spike Island (CO087-065001-) which is marked as a (disused) Convicts’ Burial Ground on the 25 inch OS map of 1902. The fort is listed in the Record of Protected Structures in the Cork County Development Plan, 2014 as RPS 01272.

Rocky Island, located south of Haulbowline Island and north of Ringaskiddy, was the site chosen for the construction of two large magazines (CO087-105---) for use as a store for gunpowder.

Five Martello towers were built in Cork harbour during the Napoleonic period between 1813 and 1815. The Cork harbour towers were placed at strategically important locations, three on the northern shore of the Great Island (Manning Tower at Marino Point, Belvelly and Rossleague), one on high ground on the northwestern side of Haulbowline Island (CO087-059002-) and one at Ringaskiddy (CO087-053--- and RPS 00575) on the highest point of the Ringaskiddy peninsula. The Martello tower at Ringaskiddy is the largest of the Cork harbour Martello towers. It is the only one of the Cork harbour towers to be enclosed by a ditch. A walled circular enclosure, 100m in diameter, and marked by 4 ordnance stones, encloses the tower and ditch. The actual tower stands 70m to the south of the southern perimeter of the proposed development site. The walled enclosure is 30m south of the southern boundary of the proposed development site. The 1st (1841), 2nd (1902) and 3rd (1934) edition OS maps for the area all show a path leading north-east from the tower across the proposed development site to Gobby Beach (Figures 15.2, 15.3 and 15.4). The path shown on the 1st edition map leads to an ‘Ordnance Stone’ at Gobby Beach, and the path appears to have been laid out at the same time as the construction of the Martello tower. The Martello tower on Haulbowline (CO087-059002- and RPS 00578), is approximately 1.3km to the north of the proposed development site and is in the ownership of the Irish Naval Service.

All of the Martello towers in Cork harbour are located on ground marked as Ordnance Ground and the Ringaskiddy, Belvelly and Rossleague towers are defined by Ordnance Stones. The Ringaskiddy Martello tower is the only tower in Cork harbour to have a path marked by ordnance stones. There is no legal registered right-of-way along this path. Although it is shown on historic maps, much of it is no longer in existence due to soil removal in the recent past. The path leading from the tower to the beach across the proposed development site is part of the curtilage of the Protected Structure of the Martello tower.

There is one country house (now demolished), Prospect Villa, within the study area, in Barnahely townland (CO087-111---) approximately 1.1km west of the proposed development site, an ornamental tower (CO087-052002-), also in Barnahely, has also been demolished.

A single storey vernacular house in Barnahely (CO087-060---) approximately 1.2 km southwest of the proposed development site appears to be the only surviving element of a small settlement shown at this location on the 1841 OS map. A

settlement (CO087-143) in Barnahely on the Down Survey Barony maps (1654-9) no longer survives.

Sixteen structures within the 2km study area are listed in the Record of Protected Structures in Cork County Development Plan (2014) (Table 14.2). These are the Martello tower at Ringaskiddy (RPS No. 00575), the Martello tower at Haulbowline (RPS No. 00578), a range of limestone warehouses and offices on Haulbowline (RPS No. 00670), the Castlewarren stronghouse at Barnahely (RPS No. 01260) and twelve structures on Spike Island; Westmoreland Fort (Fort Mitchell) (RPS No. 01272), as outlined in the table below. Haulbowline Island has been designated an Architectural Conservation Area – "Haulbowline Conservation Area" in The Cork County Development Plan (2014).

Table 14.2 Structures listed in the Record of Protected Structures in Cork County Development Plan (2014) within a 2km radius of the proposed development site

RPS ID No.	Description
RPS 00575	Martello Tower (Ringaskiddy)
RPS 00578	Martello Tower (Haulbowline Island)
RPS 00670	Range of Limestone Warehouses and offices (Haulbowline Island)
RPS 01260	Castlewarren Stronghouse (Barnahely)
RPS 01272	Westmoreland Fort (Spike Island)
RPS 01430	Officer's House (West) (Spike Island)
RPS 01431	Bleak House Admiral's House (Spike Island)
RPS 01432	Graveyard/Cemetery (Spike Island)
RPS 01422	Prison Jail (Spike Island)
RPS 01423	Barracks (West) (Spike Island)
RPS 01424	Barracks (South) (Spike Island)
RPS 01426	Barracks (East) (Spike Island)
RPS 01425	Battery/Gun Room (Spike Island)
RPS 01427	Store/Warehouse (Spike Island)
RPS 01428	Former Barracks including Chapel (Spike Island)
RPS 01429	Officers House (Spike Island)

The National inventory of Architectural Heritage for East Cork lists the protected structures included in the study area, as well as additional buildings to those included in the RPS in the study area. Four buildings in Ringaskiddy townland are included in the inventory: the Martello tower (Reg. No. 20987047), Ring House (Reg. No. 20987046), Rock Cottage (Reg. No. 20987045) and Ringaskiddy Oratory (Reg. No. 20987044). All are designated of regional importance. A total of twenty-seven building and features are listed in the Inventory on Haulbowline Island and all are designated of regional importance. A total of twelve buildings are included in the Inventory for Spike Island and eleven are designated as of regional importance. Westmorland Fort (Reg. No. 20908789), a star-shaped fort, is designated of national importance. All are now included in the RPS.

The NIAH Garden Survey for County Cork includes two gardens shown on the first edition OS 6" map which are within the study area, these are Castle Warren and Prospect Villa, both in Barnahely. Both no longer exist.

14.3.5.1 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 14.5**), dated to 1587, which shows the Ringaskiddy peninsula and names the castle located on the peninsula as Berneyele. This is likely to be Barnahely castle. No features are either depicted or named in the area of the proposed development site.

The Down Survey map of 1654-1659 (**Figure 14.6**) names Ringaskiddy (Reniskydy) and Barnahely (Bernehery parish) immediately to the west. There are two structures shown in Barnahely. One appears to be a tower and is likely to be a depiction of the tower house and bawn (CO087-05201-) still extant in Barnahely townland today. Haulbowline (Howbolin fort) is also indicated. No features are either depicted or named in Ringaskiddy.

Cartographic sources from the nineteenth and early twentieth century show the area of the development site under agricultural use. The 1st edition of the Ordnance Survey (OS) map, dated to 1841, shows up to 32 small fields in the area of the proposed development site (Figure 14.2). These are mainly in the upper, southern part of the site. The fields had been consolidated into a smaller number of larger fields (9) by the time of the 2nd edition of the OS map (1902) (Figure 14.3). An east-west line of narrow fields along the central part of the proposed development site are shown as poor ground on the 1st edition map and this designation is retained on the 2nd edition map. The Ringaskiddy Martello tower (CO087-053---) is clearly indicated on the 1st edition OS map approximately 70m to the south of the southern boundary of the proposed development site. The ditched enclosure around the base of the tower is depicted. A walled circular area around the tower is described as 'Ordnance Ground.' A concentric dotted line outside the area defined as the 'Ordnance Ground' may be a path around the edge of the ordnance ground. There are seven 'ordnance stones' marked around the perimeter of the ordnance ground. Two stones mark the start of a path that leads to Gobby Beach. This path is clearly marked extending north-eastwards from the ordnance ground surrounding the Martello tower. The path extends north-east across much of the proposed development site and terminates at Gobby Beach on the eastern site boundary where two more Ordnance Stones are marked on the map at each side of the terminating point of the path. A second path or lane to the Martello tower is shown extending south from Rock Village. The path turns due east for some distance before turning south towards the tower. The path extends as far as the field boundary to the north of the Martello tower, terminating at a gap in the boundary, and was probably the main access to the tower from Rock Village. At the time of the 1st edition OS map the road east from Ringaskiddy Village only extended as far as Rock Village and there would have been no other road access to the tower from Ringaskiddy. The northern boundary of the proposed development site was the southern shore of Cork harbour at this point (Figure 14.2). By the time of the 2nd edition of the OS map the road from Ringaskiddy is shown extending east as far as Gobby Beach and this road defines the northern boundary of the proposed development site. The path from the Martello tower to Gobby Beach is indicated only as a dotted line within the proposed development site. The path or lane to Rock Village (no longer shown on the map) is also shown as a dotted line along the southern section, although the east-west leg of the path is clearly shown extending between two fields (Figure 14.3).

There are very few changes to the proposed development site shown on the third edition map of 1934 (Figure 14.4). There are some minor changes to field boundaries, through the removal of a small number of boundaries. The path from the Martello tower to Gobby Beach is indicated as it is on the 1902 map. The path to the former area of Rock village is no longer defined along the southern section although its east west section is still shown, but a new path is shown as a dotted line extending diagonally across this field which continues to the south as a dotted line to the Martello tower.

An examination of online aerial photographs (Ordnance Survey of Ireland 1995, 2000, 2005 and Google Maps 2013) of the proposed development site did not indicate any new features of archaeological potential. The partial line of a path indicated on the 2005 photographs (Plate 2) lies in the approximate area of part of the original path that lead from the Martello tower to Gobby Beach. This is not discernible on any of the other photographs and was not apparent during field walking.

The Martello tower at Ringaskiddy is depicted in several paintings of Cork's lower harbour (Plate 3, Murray, 2005). The majority of paintings show the tower in the distance and do not show details of the tower. No other features of cultural heritage interest are depicted in these paintings.

14.3.6 Townland Boundaries

The Irish landscape is divided into over 62,000 townlands, a system of landholding that is unique in Western Europe for its scale and antiquity (O'Connor 2001, 7). Many townlands are pre-Anglo Norman in origin and Irish historical documents consistently use townland names throughout the historic period to describe areas and locate events accurately in their geographical context. The townland names and boundaries were standardised in the nineteenth century when the Ordnance Survey began to produce large-scale maps of the country. The townland boundaries recorded by the Ordnance Survey, therefore, may well be aligned on older land divisions dating to early historic times and may physically overlie archaeological evidence for such early forms of land division. For this reason they are perceived as Areas of Archaeological Potential. The entire land holding of the proposed development site lies in Ringaskiddy (Rinn an Scidígh) meaning the point or headland (www.logainm.ie). The headland at Ringaskiddy was probably named after the prominent Cork Skiddy family.

14.3.7 Archaeological Investigations

An intertidal and metal detector survey were carried out on the eastern site boundary along the foreshore at Gobby Beach in 2015 following correspondence with the Underwater Archaeology Unit of the NMS. The surveys were carried out in May 2015 under licence numbers 15D0046 and 15R0050 to assess the archaeological potential of the foreshore in advance of proposed beach nourishment works which form part of the development. One item of archaeological significance, a small cannon ball measuring 62mm diameter, was found during the metal detector survey. No features of archaeological potential were noted and no other archaeological objects were found. A number of modern metal objects were noted. No archaeological features or finds were visible in the glacial till cliff face at the west of the beach. In 2010 an intertidal and metal detector survey of the same foreshore was undertaken in response to a request

for further information from An Bord Pleanála. This followed an oral hearing (in 2009) on the planning application for a waste-to-energy facility and waste transfer station at the site (submitted in 2008). No features of archaeological significance were identified along the eastern boundary of the proposed development site (Purcell 2010). A number of modern features were identified along the foreshore to the north of the area where remedial coastal protection works were considered.

In 2006, an underwater archaeological survey of a portion of the West Channel of Cork harbour was undertaken as well as an intertidal survey at Gobby Beach and Spike Island (Boland 2006). These investigations were undertaken as part of a proposal to construct a bridge to Spike Island from the public car park at Gobby Beach. Two features (a pipeline and timbers) were identified on the foreshore at Gobby Beach to the north of the eastern boundary to the proposed development site. Both were identified again during the intertidal and metal detector survey in 2010 to the north of the area being considered for coastal protection works. The underwater survey comprised a bathymetric survey, a magnetometer survey and a side scan survey of the sea bed. While a large number of anomalies were revealed all are submerged in the channel several hundred metres from the eastern site boundary (Boland 2006).

One archaeological investigation has been undertaken in the proposed development site. Archaeological testing of an elongated mound was carried out on the site in 2001 in the high southern part of the site during a pre-planning assessment (Lane in www.excavations.ie). This was determined to be of no archaeological significance and was instead the result of land improvement works. A number of archaeological investigations have been undertaken in the study area all of which are discussed in Appendix 14.2.

14.3.8 Site Inspection

The primary purpose of field inspection is to assess the physical environment in which the proposed development will be constructed and to identify any features of cultural heritage significance, which have not been previously recorded. Current land use, local topography and environmental conditions were assessed to highlight possible Areas of Archaeological Potential (AAP). The proposed development site was inspected in March 2008 as part of EIS preparation (Sutton 2008) and a detailed description of the site was compiled. It has been visited on a number of occasions since that time, most recently on the 18th March 2015 in dry sunny conditions. The site remains largely in the same condition as in 2008 although vegetation growth is now generally denser. The site description below corresponds largely with the 2008 description and categorises the proposed development site into the same four areas as outlined in 2008.

The site of the proposed development occupies a large tract of land at the eastern end of the Ringaskiddy peninsula, to the south of the Ringaskiddy-Haulbowline Road (L2545), and surrounds the Hammond Lane Metal Company facility, which is also located on the peninsula and which is accessed from the L2545 road to the north (Plate 1). The proposed development site comprises a steep hill which rises from the flat ground along the northern site perimeter (Plate 4). The land is flat to the immediate south of the L2545 road and rises up steeply to the south. At the top of this steep scarp the ground rises more gently to the southern site boundary along the top of the ridge (Plate 5). Anecdotal evidence

suggests that the site was used as a source of material for land reclamation elsewhere in Ringaskiddy and this accounts for the escarpment. The ground slopes down to the east and west from the high point of the site along the southern boundary (Plate 6).

The northern site boundary is defined by the L2545 road. A post and wire fence separates the road from the eastern end of the sites northern boundary, inside the fence there is a low bank planted with trees (Plate 7). During the site inspection, construction works were observed at the Hammond Lane facility which included construction of a new entrance. On the western side of Hammond Lane the boundary to the road is defined by an earthen bank, which in places is very overgrown. This bank has been cut at intervals to facilitate road drainage (Plate 8).

The proposed development area to the west of Hammond Lane is referred to as “western fields area” in this chapter. The proposed development area to the east of Hammond Lane is referred to as “waste-to-energy facility area”.

The eastern boundary extends to the foreshore of Cork harbour at Gobby Beach with a low sheer cliff/glacial till face behind it to the west (Plate 9).

The southern site boundary is defined by a stone-faced bank along the entire length of the site. This boundary is very overgrown with brambles along almost its entire course (Plate 10) and the much denuded bank is occasionally discernible in a number of gaps in the vegetation. When the site was inspected in 2008 the bank was discernible reaching a height of 1.4m but denser vegetation growth now obscures this within the proposed development site. From the adjoining land to the south, however, the stone lined bank is more clearly visible. Two curving sections in the southern boundary were also visible in 2008 where the stone-faced bank curves slightly to the south. These are now heavily overgrown. These features are located at the points on the 1st, 2nd and 3rd editions of the OS 6-inch maps where the paths to and from the adjacent Martello tower crossed the boundary. The Martello tower, in adjoining land to the south, is visible through the less overgrown parts of the southern boundary (Plate 11).

The western site boundary is defined in the higher, upper portion of the proposed development site by a tree-lined and overgrown stone-faced bank which follows a steep down-slope to the north and northeast (Plate 12). The site boundary turns east through a section of dense overgrowth (Plate 13) and is defined by a low earthen bank. The remainder of the western boundary is defined along the low ground below the overgrown scarp by a tree-lined stone-faced bank (Plate 14).

The Hammond Lane Metal Company is enclosed on all sides by the proposed development site with an access road from the L2545 road to the northeastern area of the processing facility. It is enclosed by trees and high steel fences.

The site can be divided into four areas (Plate 1):

Area 1: An area of flat ground along the northern site perimeter to the west of the Hammond Lane Metal Company entrance. This flat ground is under arable cultivation, and had been ploughed and harrowed when the site was visited in March 2015 (Plate 15). No features of archaeological or cultural heritage were noted in this area. This area is referred to as “western fields” area in this report.

Area 2: An area of scrubland which extends east from the Hammond Lane Metal Company entrance to the glacial till face/cliffs at the harbour edge and to the eastern portion of the southern site boundary. This area is largely covered in gorse and brambles interspersed with small patches of grassland. This scrubland extends from the flat ground along the northern site perimeter, which in places is wet and boggy, up the eastern flank of the proposed development site (Plates 16 – 18). A modern farm track runs through this area from the L2545 road. The track runs south from the road, cutting across Area 2, before turning east and then south again to ascend the steep ground. The track then turns south and runs along the southern site boundary. The farm track crosses the line of the path which the 1st, 2nd and 3rd edition maps show extending towards Gobby Beach from the Martello tower. In 2008 when the site was inspected the ruts of the farm track had been eroded by rain and wear and showed no evidence of metalling or an earlier path surface or kerbing. No features of archaeological or cultural heritage were noted in this area. This area to the east of Hammond Lane is referred to as “waste-to-energy facility area”.

Area 3: An area of land in pasture along the high southern perimeter of the site. This widens towards the west, sloping sharply down to the north-western corner of the proposed development site (Plates 19 and 20). No features of archaeological or cultural heritage were noted in this area.

Area 4: An area of dense undergrowth growing across the centre of the site where the slope is steepest (Plates 21 – 23). This overgrown section extends west behind (and to the south of) the Hammond Lane Metal Company. The upper slopes at the western side are overgrown with trees. Part of a degraded low earthen bank was visible in the undergrowth at the western end of this overgrown section, to the north of the pasture field (Area 3). This is the remainder of one of many field boundaries shown in this area on the 1st edition of the OS map. The remains of other field boundaries may still remain in the undergrowth in this area. Archaeological testing was carried out on a low mound in this area in 2001 (Lane 2001). The mound was found to be of no archaeological value.

14.4 Characteristics of Proposed Development

The main elements of the proposed development include a waste-to-energy facility, an upgrade of a section of the L2545 road, a connection to the national electrical grid, an increase in ground levels in part of the site, coastal protection measures above the foreshore on Gobby beach and an amenity walkway to the Ringaskiddy Martello tower. The proposed development is described in detail in **Chapter 4 Project Description** of this EIS.

An amenity walkway, incorporating a viewing platform is proposed as part of the development. This walkway will commence at the existing car park at Gobby Beach and will be located close to the eastern and southern boundaries of the proposed development site. The path will provide a connection from Gobby Beach through the proposed development site towards the Ringaskiddy Martello tower. Close to the southern site boundary a viewing platform will be constructed and the walkway will continue west towards the Martello tower. The amenity walkway will be screened along its western and northern sides to reduce visibility over the waste-to-energy facility. The path will terminate along the southern boundary of the proposed development site.

The proposed waste-to-energy facility will encompass the majority of Area 2 east of Hammond Lane. Refer to Figure 4.2 for details of the existing site layout.

Ground levels will be increased in Area 1 (western fields) to alleviate local flooding issues within the site. A temporary construction compound will also be located in the western fields' area during construction of the proposed development.

There is no development proposed within Areas 3 and 4 (except for the amenity walkway along the southern boundary of the proposed development site).

All buildings and structures will be located in Area 2 in the eastern end of the site. This will include the main process building, the stack, the turbine, aero condenser buildings and fire water storage tank, administration building and electricity substation building. The existing ground level in Area 2 will be reduced by up to 12m to accommodate two platforms on which the buildings will be located and retaining structures will be built along the southern and eastern site boundaries to accommodate this cut. The main process building and the stack will extend above the height of the existing ground along the southern boundary while the remaining structures will sit into the cut ground and will not extend above the height of the existing southern boundary. (The main process building will reach a height of 50.7m OD and the stack will reach a height of 75m OD.)

Areas 1 and 2 will both be disturbed during the construction phase of the proposed development. This will include the removal of topsoil and subsoil in Area 2. Topsoil will be removed and ground levels will be increased in Area 1. Previously unrecorded archaeological or cultural heritage features may be impacted by the proposed works. Appropriate mitigation measures are outlined below in Section 14.6.1.

It is proposed to upgrade the L2545 along the northern boundary of the proposed development site. Refer to Chapter 4 for details of the road upgrade. This road was constructed between 1842 and 1902 along the northern shore of the peninsula and its original construction would have impacted potential archaeological and cultural heritage features. The proposed road upgrade works will be within the footprint of the existing road corridor and will not impact adjoining ground. No mitigation is required.

The eastern boundary of the proposed development site onto Cork harbour at Gobby Beach will be subject to coastal protection works to reduce the rate of erosion on the glacial till face along the eastern boundary. The works will comprise the deposition of rounded shingle of appropriate size at the base of the existing glacial till slope above the foreshore which forms the eastern site boundary. The shingle will not extend into the intertidal zone beyond the foreshore. This work will not require excavation, however, previously unrecorded sub-surface archaeological or cultural heritage features may survive within the intertidal zone and may be impacted by machines traversing the area. Appropriate mitigation measures are outlined below in Section 14.6.1.

It is proposed to establish a connection from the proposed development site to the National Grid as part of the proposed development. The electrical substation will be located in Area 2, adjoining the existing ESB Networks Lough Beg substation, where topsoil and subsoil will be removed during the construction phase of the proposed development. Ground works will also be required within

the existing Lough Beg substation to accommodate the connection. Appropriate mitigation measures are outlined below in Section 14.6.1.

14.5 Evaluation of Potential Impacts

This section evaluates the potential direct and indirect impacts of the proposed development.

14.5.1 Potential Direct Impacts

14.5.1.1 Do Nothing Impacts

If development does not proceed the existing landscape will remain in its current condition.

14.5.1.2 Potential Direct Impacts – Construction Phase

There are no recorded archaeological sites within the proposed development site. The nearest recorded archaeological feature is a Martello tower (CO087-053) located 70m to the south in adjoining land. The wall enclosing the tower and associated ditch is located 30m south of the southern site boundary of the proposed development site. The Zone of Archaeological Potential or Zone of Notification for the Martello tower extends inside the southern site boundary of the proposed development site.

No protected structures listed in the County Development Plan (2014) are located within the proposed development site. In addition, none of the structures listed in the National Inventory of Architectural Heritage for County Cork are located within the proposed development site. The aforementioned Martello tower is listed as a Protected Structure in the County Development Plan (2014) (RPS 00575), and in the National Inventory of Architectural Heritage for County Cork as being of regional importance (Reg. No. 20987047).

The 1st, 2nd and 3rd editions of the OS maps show a path extending north-east across the proposed development site from the enclosing wall surrounding the Martello tower to ordnance stones at Gobby Beach (**Figures 14.2 – 14.5**). The cartographic evidence suggests that a path was laid out at the same time that the Martello tower was constructed and is part of the curtilage of the Martello tower which is a Protected Structure (RPS 00575). However, part of a path noted on an aerial photograph taken in 2005 (**Plate 2**) of the site is not on the line of the path indicated on the OS maps and is likely to be more recent. The line of the path shown on the 1st, 2nd and 3rd editions of the OS maps is not currently visible on the ground, and was not visible in 2008. Anecdotal evidence suggests that this part of the site was used as a source of material for land reclamation elsewhere in Ringaskiddy resulting in the removal of soil and cutting of the steep escarpment. The proposed development will impact directly on the line of the path.

There are no cultural heritage sites within the proposed development site.

The construction work associated with the proposed development will involve ground disturbance and the removal of topsoil and subsoil. Construction on the site will have an impact on Areas 1 and 2. Area 2 will be the focus of construction

and significant ground reduction will be undertaken here. Ground disturbance will also be undertaken in Area 1 where topsoil will be removed followed by building up existing ground levels. Ground reduction will impact any potential archaeological material that may survive below the ground surface. Where extensive earthmoving is involved there is always the possibility that previously undetected archaeological material will be uncovered. Previously unknown archaeological sites are frequently discovered during large scale construction projects which require extensive ground reduction.

If previously unknown archaeological features are identified during ground reduction, they will be either preserved by record or preserved *in situ*. If such features are preserved by record they will be permanently removed from the cultural landscape

The amenity walkway will be located along the southern site boundary in Area 3 extending from the eastern end of the site in Area 2. The constructed walkway will be 1.8m wide surfaced with bitumen macadam and will be constructed on a geo-cell base which does not require excavation. Topsoil will be provided to the path edge to integrate it with surrounding levels. As ground reduction is not required the construction of the walkway will not impact any potential archaeological material that may survive below the ground surface.

No ground works are proposed for the remainder of Area 3 and Area 4 and no direct impacts are foreseen.

A site inspection of the proposed development site revealed no features or finds of archaeological significance, however, the dense vegetation cover made some areas difficult to inspect, in particular parts of Areas 2 and 4. One denuded field boundary was visible in Area 4 during the site inspection, this was shown on the first edition OS map. It is possible that additional contemporary field boundaries survive within the undergrowth. None of these field boundaries are aligned on townland boundaries. If archaeological features do survive in Areas 1 and 2 they will be profoundly impacted by the proposed development.

The proposed raising of the L2545 road will have a minimal archaeological impact. The construction of the road will have impacted any sub-surface archaeological features that may have existed along its route and in immediately adjoining ground. The potential for finding archaeological remains along the road corridor and adjoining verges is low.

The proposed coastal protection works at the base of the glacial till slope on Gobby Beach will not require excavation. Approximately 1,100m³ of imported rounded shingle of appropriate size will be laid at the base of the glacial till slope above the foreshore which forms the eastern site boundary. The shingle will be transported across Gobby Beach from the existing public car park and a bulldozer will be used to spread it in the designated area. It is anticipated that access for construction machinery across the beach will be facilitated by laying down a temporary shingle track. Traversing the beach with plant and machinery may impact potential sub-surface archaeological remains.

The electrical substation will be located in Area 2 where significant ground works will be undertaken. Some limited ground works will also be undertaken by ESB Networks within the Lough Beg substation which adjoins Area 2. Land within the substation is likely to have been subject to previous disturbance. There is no

evidence of sub surface archaeological features surviving within the Lough Beg compound.

14.5.1.3 Potential Direct Impacts – Operational Phase

No direct significant operational impacts on archaeology, architecture and cultural heritage as a result of the operation of the proposed development are envisaged.

The amenity walkway will be located along the southern site boundary in Area 3 extending from the eastern end of the site in Area 2. It will continue approximately half way along the southern boundary ending at the point where an existing rough path crosses into adjoining land to the south, which is outside Indaver lands. The existing rough path then proceeds southwest to the Martello tower. A viewing platform will be provided at the south-eastern corner of the walkway providing views east over Spike Island and the harbour. The path will be constructed on a no-dig basis. The construction of the path will have a positive impact on the accessibility of the monument by providing a formalised route to the Martello tower through Indaver lands.

14.5.1.4 Visual Impact

The Martello tower located in adjoining land to the south is situated on the high point of the Ringaskiddy Peninsula. From the tower there are commanding views to the east and north over the lower harbour including Spike, Haulbowline and the Great Island and west and northwest to the River Lee at Monkstown and inland further west and northwest. The landscape in which the Martello tower was constructed in the early 19th century has been significantly modified over the last two centuries. Extensive reclamation, industrialisation, growth in residential development throughout much of the harbour and urbanisation of the town of Cobh have combined to change the rural landscape setting of the early 19th century tower. Visibility over the proposed development site from the Martello tower to the north and northeast is minimal due to the fall in ground beyond the field boundary which forms the southern site boundary. Instead, the more intermediate and distant view to Haulbowline Island and Great Island dominates the northern vista from the Martello tower. While to the northeast, the view from the Martello tower extends over adjoining pasture land along the spine of the peninsula and on to the intermediate view of Spike Island and distant view of Great Island. When constructed the top of the main process building of the waste-to-energy facility and the stack will be visible from the Martello tower. The main process building measures 176m in length and 81m in width and is aligned southwest northeast with the narrowest part of the building facing the Martello tower thus minimising the view of the main mass of the building from the tower.

The Ringaskiddy Martello tower is part of a composite military infrastructure that includes a wide range of military buildings in Cork harbour. Some of the closest to the proposed development site in the lower harbour include Fort Mitchell (Westmorland Fort) on Spike Island to the northeast, and the range of military buildings on Haulbowline to the north, including the Martello tower at the north western side of the island. Further southeast there are defences at the mouth of the harbour at Carlisle Fort on the east side and Camden Fort on the west side at Crosshaven Hill. The waste-to-energy facility, when constructed, will partially obstruct the view from the Martello tower to the northeast towards Spike Island. The view from the tower to Fort Mitchell will not be impacted or obscured,

however, the north western part of Spike Island will no longer be visible from the tower. The main process building and the stack will obscure this view. The view to the north from the Martello tower over Haulbowline and Great Island will not be impacted and the intervisibility of the two Martello towers and range of military buildings on Haulbowline will not be affected. Similarly the view southeast from Ringaskiddy Martello tower towards Camden Fort on Crosshaven Hill and Carlisle Fort both at the mouth of the harbour will not be affected.

The view towards the Martello tower will be altered by the construction of the waste-to-energy facility. It is currently a visually prominent feature on the peninsula from much of the lower harbour and surrounding landscape. The construction of the large scale industrial complex which forms the waste-to-energy facility will diminish the prominence of the tower and alter its setting in the landscape. The view of the tower from a narrow section of the harbour northeast of Spike Island to the southeastern tip of the Great Island at Marloag Point will be obscured by the main process building. The setting of the Martello tower is currently greenfield in nature with the tower located on the highpoint of the local landscape. The modification of this to an industrial setting, elements of which protrude above the ridgeline, of the peninsula will significantly alter the landscape of the monument. There are a number of other industrial complexes, pylons and wind turbines within the vicinity and the construction of the proposed development will follow this trend and will further industrialise the landscape.

14.6 Mitigation Measures

14.6.1 Construction Mitigation Measures

The construction phase of the proposed development will involve ground disturbance that would impact on any potential archaeological material that may survive below the ground surface. The ground disturbance will be confined to Areas 1 and 2 i.e. the eastern end of the site and the western fields along the northern boundary and part of Area 3 where the amenity walkway will be located along the southern boundary. In Areas 1 and 2 the ground disturbance will involve ground reduction. In Area 3 along the route of the amenity walkway the path will be built on a no-dig basis. As ground reduction works are not proposed for Areas 3 or Area 4 subsurface archaeological material will not be disturbed and no archaeological mitigation is proposed. These areas, excluding the route of the amenity walkway, will be fenced off during the construction process and no construction works will be undertaken within them.

The National Monuments Service assesses the archaeological requirements for each proposed development on a case by case basis generally following a review of the archaeological assessment. The requirement for geophysical survey, archaeological testing and other mitigations are outlined. In this case it is anticipated that a programme of archaeological investigations in advance of construction will be required. This may include geophysical survey and archaeological testing of areas which will be impacted by the development.

Notwithstanding additional requirements of the National Monuments Service Indaver propose to undertake a programme of archaeological investigations in agreement with the National Monuments Service, the National Museum of Ireland and the Local Authority on Areas 1 and 2 in advance of development. A programme of geophysical survey will be undertaken in Area 1. The current

ground conditions in Area 2 make this ground unsuitable for geophysical survey. A programme of licensed archaeological testing will follow the geophysical survey and will extend across Area 2, in consultation with the above bodies. The testing will target potential archaeological anomalies highlighted by the geophysical survey in Area 1 and will comprehensively investigate Area 2. Archaeological testing will be carried out in the area of the path from Gobby Beach, shown on the 1st, 2nd and 3rd editions of the OS maps, in an attempt to identify its nature and extent. Any archaeological features identified during the programme of archaeological investigations, including the line of the path will be fully resolved to professional standards of archaeological practice. Such material will be preserved *in situ* or preserved by record, as appropriate, as outlined in Policy and Guidelines on Archaeological Excavation – Department of Arts, Heritage, Gaeltacht and the Islands.

The upgrading of the L2545 road will be within the footprint of the existing road and no archaeological mitigation is proposed.

An intertidal and metal detector survey of the foreshore at Gobby Beach was undertaken in May 2015 by the author. The survey extended along the base of the glacial till slope which forms the eastern site boundary. One item of archaeological significance, a small cannon ball measuring 62mm diameter, was found during the metal detector survey. No features of archaeological potential were noted and no other archaeological objects were found. No archaeological features or finds were visible in the glacial till face at the west of the beach. It is possible that previously unrecorded sub-surface archaeological features may exist along the foreshore and may be disturbed by the traversing of the strand by plant and machines during the proposed coastal protection works. To minimise the impact on the beach, a single access route to the working area at the base of the glacial till slope will be established and fenced off for the duration of the proposed works. This will be archaeologically monitored during the works. Any archaeological features identified during the work will be fully resolved to professional standards of archaeological practise. Such material will be preserved *in situ* or preserved by record, as appropriate.

Archaeological monitoring of the groundworks within the Lough Beg substation will be undertaken to facilitate the electrical connection to and from the site.

14.6.2 Operational Mitigation Measures

An assessment of the visual impact of the proposed development on the Martello tower (CO087-053 and RPS No. 00575) is included in Chapter 11 Landscape and Visual, and demonstrated in the photomontages prepared. The visual impact of the proposed development on the Martello tower will be mitigated in the following ways:

- The waste-to-energy facility will be located in a substantial cut at the eastern end of the site screening much of the development from view.
- No buildings will be located along the southern site boundary adjacent to the Martello tower and the existing field boundary will be retained. The view from the tower to the north, over Haulbowline Island and the Great Island will be unaffected.
- The upper portion of the main process buildings and the upper portion of the stack will be visible from the top of the ridge and the Martello tower when

looking northeast towards Spike Island. The orientation, massing and colouring of the main process building has been designed and laid out to reduce the visual impact on the Martello tower. The main process building will be coloured varying shades of natural green to blend with the darker shades of the ridge background and lighter sky shades at the higher levels. The stack will be coloured off white/grey. Periodically, depending on climatic and/or atmospheric factors, including temperature and wind speed, a short, thin steam plume may be visible from the stack.

The amenity walkway from Gobby Beach to the southern boundary of the Indaver lands and the associated viewing platform will facilitate public access to the Martello tower. The construction of the path will have a positive impact on the accessibility to the monument by providing a formalised route to it through Indaver owned lands.

14.7 Residual Impacts

14.7.1 Residual Impacts

The cutting of the landscape through which the path to the Martello tower previously ran, as indicated on the 1st, 2nd and 3rd edition OS maps, will permanently alter the landscape of the line of the access route to the tower from Gobby Beach. However, the path no longer exists and this area appears to have been previously used as a cut area during reclamation in Ringaskiddy.

If archaeological features are revealed during archaeological investigation and are preserved by record they will be permanently removed from the cultural landscape.

The landscape in which the Martello tower was constructed in the early 19th century has been significantly modified over the last two centuries. Extensive reclamation, industrialisation, growth in residential development throughout much of the harbour and urbanisation of the town of Cobh have combined to change the rural landscape setting of the early 19th century tower.

There will be a residual impact on the view to and from the Martello tower. The stack and main process building will be visible from the tower and will obstruct the view northeast from it. The view of Fort Mitchell (Westmorland Fort) on Spike Island will not be obstructed but the view of the northwestern part of the island will be. The visibility over and intervisibility between the tower and the contemporary military defences in the lower harbour at Haulbowline, Spike Island, Carlisle Fort and Camden Fort will not be affected. The view of the Martello tower from within the harbour and surrounding landscape will be altered. It's position of prominence on the Ringaskiddy peninsula will be diminished by the large scale nature of the industrial facility and the greenfield setting of the tower will become more industrialised in nature. The view of the tower from a narrow section of the harbour northeast of Spike Island to the southeastern tip of the Great Island at Marloag Point will be obscured by the main process building. The visual landscape of the Martello tower will be permanently altered.

14.8 Cumulative Impacts

There are a number of existing and proposed development projects in the vicinity of Cork harbour which, in combination with the proposed resource recovery centre, may have a cumulative impact on the archaeology, architecture and cultural heritage of the area. These projects are outlined below.

Proposed Projects

- M28 Cork to Ringaskiddy Motorway Scheme
- Haulbowline Development and Masterplan
- Spike Island masterplan
- Port of Cork development
- Possible district heating system from Indaver to local users

Existing Projects

- Wind turbines at DePuy, GSK & Janssen
- Hammond Lane extension

When the cumulative impacts of these projects are considered no significant cumulative effects are predicted on the recorded and known archaeological, architectural and cultural heritage of the area. Construction work for these projects, particularly the proposed development, the M28 and the port of Cork development, will require large scale ground works and disturbance to the sea bed and may reveal previously unknown archaeological features and material. If such features are preserved by record they will be permanently removed from the cultural landscape.

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