

13 Archaeology, Architectural and Cultural Heritage

13.1 Introduction

This report comprises an appraisal of the potential impact of Douglas Flood Relief Scheme in Douglas and Togher, Co Cork. The scheme will impact the Tramore River in Togher and at Douglas Mills/ St Patrick's Mills in Douglas; the Ballybrack Stream in Douglas and the Grange Stream in Donnybrook Commercial Centre in Douglas. The purpose of the appraisal is to evaluate the potential impact the proposed scheme will have on the archaeology, architecture and cultural heritage of the development site and surrounding area. The appraisal was carried out by Lane Purcell Archaeology.

There are a total of 34 archaeological sites listed in the Record of Monuments and Places (RMP) for Co Cork and the Sites and Monuments Record (SMR) database of the National Monuments Service within a 2km radius of the flood relief scheme areas. Two of these sites are within proposed works areas for the flood relief scheme, both are milling complexes in Grange in Douglas (CO074-095 and CO086-100). The 34 archaeological sites provide evidence for human settlement and activity in the area dating back to the Bronze Age. There are 21 structures listed in the Record of Protected Structures (RPS) of the Cork County Development Plan (CDP) (2014) within a 2km radius of the flood relief scheme. There are 68 buildings included in the National Inventory of Architectural Heritage (NIAH) within 1km radius of the flood relief scheme areas.

Some terms used in this report are explained hereunder;

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”.

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.

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.

Study Area

In order to obtain a comprehensive assessment of the Cultural Heritage Environment, a study area within a circa 2km radius of the proposed scheme was examined. The study area was reduced to 1km in relation to buildings listed in the NIAH.

13.2 Methodology

The methodology used to complete this section of the EIS comprised the following:

- A review of the relevant Legislation and Guidelines
- A desktop appraisal of the proposed development site and Study Area
- A survey or inspection of the proposed development site.
- A wading and metal detector survey of the areas of works proposed for the scheme
- 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.

13.2.1 Legislation and Guidelines

In Ireland, the primary means of 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 (Misc. Provisions) Act 1999 and the Local Government (Planning and Development) Act 2000. 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, 2002 (Environmental Protection Agency) and Draft Revised Guidelines, 2015.

Advice Notes on Current Practice in the Preparation of Environmental Impact Statements, 2003 (Environmental Protection Agency) and Draft Revised Advice Notes, 2015.

Framework & Principles for the Protection of the Archaeological Heritage, 1999 (Department of Arts, Heritage, Gaeltacht & the Islands).

Policy & Guidelines on Archaeological Excavation, 1999 (Department of Arts, Heritage, Gaeltacht & the Islands).

Architectural Heritage Protection, Guidelines for Planning Authorities, 2004. (Department of the Environment, Heritage and Local Government)

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, 2005a (NRA).

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

13.2.2 Desktop Study

The desktop study provided a cultural heritage overview of the proposed flood relief scheme area and study area using the following sources.

13.2.2.1 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. CO086-013 refers to circle 13 on OS sheet 86 for County Cork. The circle is intended to show the recorded monument or place and is sometimes referred to as the *zone of archaeological potential or zone of notification* but the circles do not define the exact extent of the monument or place. The diameter of the circle can vary depending on the size and shape of the site but it averages out at *circa* 180m. The RMP for County Cork was published in 1998.

13.2.2.2 Sites and Monuments Database of the Archaeological Survey of Ireland at the NMS

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 1700, and a selection of monuments which post-date 1700. The large record archive and database resulting from the survey are continually updated.

Sites previously listed in the RMP which, following investigation, are now considered to be of no archaeological potential are de-listed from the database and generally described as redundant records. This database, complete with maps is now available for consultation via the NMS website at www.archaeology.ie

13.2.2.3 Archaeological Inventory

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

13.2.2.4 Consultations

During the compilation of the EIS the following were consulted;

- Ms Mary Sleeman, County Archaeologist for Co Cork
- Ms Connie Kelleher, Underwater Archaeology Unit, National Monuments Service
- Ms Mairead Weaver Planning Office for Co Cork with the National Monuments Service

13.2.2.5 Files of the NMS, DAHG

The NMS was 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.
- Monuments subject to Preservation Orders and Temporary Preservation Orders – None in the Study Area
- Monuments listed in the Register of Historic Monuments – None in the Study Area.

13.2.2.6 Underwater Archaeology Unit, DAHG

The Underwater Archaeology Unit maintains files on the Ports, Piers and Harbours of Ireland. There are no references in the files to the watercourses or settlements in the study area.

13.2.2.7 The National Museum of Ireland Archives

These files were consulted for townlands within the study area. The topographical files contain the reports, including correspondence, present location and occasionally, illustrations of archaeological material recovered throughout the country. None of the townlands within the scheme have a record of stray finds recovered from them within these files.

However, the British Museum holds an Early Bronze Age gold disc which was recovered from Castletreasure in the mid-19th century (Cahill 2006). A Roman coin minted during the reign of Philip the Arab who was the Roman Emperor from AD 244 – 249 was found at Cork Airport in the townland of Lehenagh More. It is uncertain whether this coin is genuine or possibly a Victorian fake and it is not possible to determine when the coin arrived in Ireland (McNamee no date).

13.2.2.8 County Development Plan for Cork (2014)

The Cork County Development Plan (CDP) (2014) outlines Cork County Council's objectives with regard to the preservation of the archaeological, architectural and cultural heritage of the County. The CDP 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 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 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 CDP also states that the maintenance of burial grounds will be encouraged through appropriate maintenance and conservations. The CDP states 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.

Works will be undertaken in the vicinity of St Patrick's Woollen Mills which is included twice in the RPS, listed as St Patrick's Woollen Mills (RPS 01243) and Douglas Woollen Mills (RPS 00482). No works will be undertaken to the range of buildings which comprise the milling complex but works will be undertaken within their curtilage. Works will be undertaken in the milling complex known as Donnybrook Commercial Centre. Millhouses at the eastern end of the complex are included in the RPS (00566). No works will be undertaken to the millhouses which is approximately 100m to the east of the proposed works area. The proposed works will, however, be within the attendant grounds of the millhouses. There are 19 other protected structures within the proposed development site within the 2km study area (**Table 13.1**).

Table 13.1: Architectural features included in the County Development Plan Record of Protected Structures within the study area.

RPS No.	Location	Name
01243	Douglas	St Patrick's Woollen Mills (Industrial Estate)
00482	Douglas	Douglas Woollen Mills
00481	Douglas	St Luke's Church of Ireland Church
00684	Douglas	Former Garda Station
00752	Maryborough Hill	Maryborough Lodge
00479	Maryborough Hill	Maryborough House Hotel
00566	Grange	Millhouses
01231	Grange	No. 11 Grange Terrace
01232	Grange	No. 10 Grange Terrace
01233	Grange	No. 9 Grange Terrace
01234	Grange	No. 8 Grange Terrace
01235	Grange	No. 7 Grange Terrace
01236	Grange	No. 6 Grange Terrace
01237	Grange	No. 5 Grange Terrace
01238	Grange	No. 4 Grange Terrace
01239	Grange	No. 2 Grange Terrace
01240	Grange	No. 3 Grange Terrace
01241	Grange	No. 1 Grange Terrace
00480	Curraghconway	Vernon Mount
00564	Curraghconway	Frankfield Church of Ireland church
00565	Curraghconway	Mount Conway

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 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.

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.

The County Development Plan includes two ACA’s which are within the study area, these are Church Street Conservation Area and West Douglas Street Conservation Area both in Douglas (**Table 13.2**).

Table 13.2: Architectural Conservation Areas included in the County Development Plan within the study area

Townland	Name
Douglas	Church St Conservation Area
Douglas	West Douglas Street 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 CDP acknowledges the importance of folklore, oral cultural heritage, historic heritage sites, including battle sites, historic rights of way and Irish place names.

NIAH Architectural 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 its protection and conservation. The NIAH 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 gardens included in the Inventory are within the proposed development site. A number of gardens included in the Inventory lie within the 2km study area, these include: Ballinlough House in Ballinlough; Ballincurrig House in Ballincurrig; Ballincurrig Villa in Ballincurrig; Ballybrack in Ballybrack; Castle Treasure in Castletreasure; Donnybrook in Castletreasure; Douglas House in Douglas; Doughcloyne in Doughcloyne; Doughcloyne House in Doughcloyne; Endsleigh in Ballincurrig; Frankfield in Curraghconway; Mount Conway in Curraghconway; Maryborough in Douglas; and Vernon Mount in Curraghconway.

Table 13.3: Architectural features listed in the NIAH within 1km of the proposed works

NIAH No	Name	Location
20871030	St Patricks Woollen Mills/ Douglas Commercial Estate (engine house)	Grange
20871031	St Patricks Woollen Mills/ Douglas Commercial Estate (engine house)	Grange
20871032	St Patricks Woollen Mills/ Douglas Commercial Estate (water mill)	Grange
20871033	1-7 St Patricks Terrace	Grange
20871034	St Columba’s Boys National School	Grange
20871035	Ballybrack House – gates/railings/walls	Ballybrack
20871036	Ballybrack House	Ballybrack

NIAH No	Name	Location
20871037	Douglas Hall	Ballincurrig
20871038	River View B&B	Douglas St
20871040	Schoolhouse Studio	Carrigaline Rd
20871042	St Lukes C of I Church and environs	Church yard Lane
20871043	Sextons House, St Lukes Church	Church yard Lane
20871045	John Slye Scout Hall	Church yard Lane
20871046	St Columba's Roman Catholic Church	Church yard Lane
20871050	Single arch road bridge	Church Road/ Carrigaline Rd
20871047	House	Church Rd
20871048	Pair of semi-detached houses	Church Rd
20871049	The Rectory	Carrigaline Rd
20872002	Douglas House,	Douglas
20872001	Windyridge	Douglas
20872003	Rochestown Park Hotel	Monfieldstown
20908622	Douglas Woollen Mills	Grange
20908623	Terrace of 5 houses	Grange
20908624	Pair of 2-storey houses	Grange
20908625	Terrace of 6 houses	Grange
20908626	Former Gate Lodge	Grange
20908627	Post box	Grange
20908628	Store/warehouse	Grange
20908629	Office	Grange
20908630	Christy Floor Coverings	Castletreasure
20908631	Terrace of 5 Houses	Castletreasure
20908632	Donnybrook House	Castletreasure
20872004	Maryborough House Hotel	Maryborough
20908619	Stonehouse (school)	Curraghconway
20908618	Post box	Curraghconway
20908620	Holy Trinity Church of Ireland Church	Curraghconway
20871037	Douglas Hall	Ballincurrig
20871027	Glaneskin Gate Lodge	Ballincurrig
20871028	Glanskin	Ballincurrig
20871026	Ellerslie	Ballincurrig
20871025	Palmeira	Ballincurrig
20871024	Hetty Field	Brownstown
20871020	5-6 Wood View	Ballincurrig
20871021	3-4 Wood View	Ballincurrig
20871022	1-2 Wood View	Ballincurrig
20868038	Ravenscourt	Ballinlough
20870008	The Lodge Dental Practice	Lehenaghmore
20870009	House (Spur Hill)	Lehenaghmore
20871010	Entrance gates to Lehenaghmore House	Lehenaghmore
20870007	Church of the Way of the Cross	Lehenaghmore
20908608	Bridge	Doughcloyne
20908604	Bridge	Chetwynd
20908609	Bridge	Lehenaghmore
20908610	Bridge	Ballycurreen
20870006	Mortuary	Farrandahadore Beg
20870004	Church	Farrandahadore Beg
20870005	Church	Farrandahadore Beg
20870003	Mausoleum	Farrandahadore Beg
20870002	Sexton's House	Farrandahadore Beg
20870001	Gates, railings, walls	Farrandahadore Beg
20869006	Wilton Villas	Farrandahadore More
20869005	Milestone/Milepost	Ballinaspig Beg

NIAH No	Name	Location
20869004	Church	Farrandahadore More
20869003	St Joseph's College	Farrandahadore More
20869002	St Joseph's College outbuilding	Farrandahadore More
20869001	Wilton Park House	Ballinaspig More
20865061	Mount Philomena House	Ballinaspig More
20866215	Peterborough House	Huggarts-Land

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

This web site provides a database of summary accounts of archaeological excavations and investigations undertaken in Ireland between 1970 and 2015. Until 2010, these accounts were also published in book form. The database was queried for any investigations undertaken in the proposed development site and Study Area. A number of archaeological investigations were undertaken in the Study Area, including a wading and metal detector survey of the watercourses affected by the proposed works (**Appendix 13.1**). These and other investigations undertaken are discussed below.

13.2.2.10 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.

13.2.2.11 Cartographic Sources

The following maps were consulted:

- 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 1933 and 1950 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.

13.2.2.12 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 on the photographs.

13.2.3 Site Inspection

The primary purpose of a site inspection is to assess the physical environment in which the proposed development scheme will take place and identify any possible features of archaeological, architectural or 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 flood relief scheme areas were visited on a number of occasions, most recently on the 17th May 2016. The two proposed construction compounds were visited on the 16th and 17th June 2016.

13.3 Receiving Environment

13.3.1 Cultural Heritage and the Existing Environment

13.3.1.1 Douglas

Douglas village is located approximately 3km south of Cork City and has in the last decades become one of the city's largest suburbs. The Douglas River, after which the village is named, flows south through the village, joining the Tramore River, before discharging into the Douglas Estuary in the inner reaches of Cork Harbour. The name Douglas or *Dúglas* means darkish stream (logainm.ie). The village, which developed here in the early 18th century, grew up around the establishing textile industries. The power, which was harnessed from the rivers, along with the harbour-front location initially attracted these industries to Douglas. By the mid-19th century the village had a post office, court house and police barracks and continued to grow through the 20th century. Lewis described the settlement in favourable terms in 1837 noting the numerous country houses in the area (Cadogan 1998, 221-2).

The catchment area of the Douglas River extends beyond the low lying area of Douglas village itself (in the townlands of Douglas and Grange), to the higher ground to the south into the townlands of Ardarrig, Ballybrack and Castletreasure where a number of tributaries rise. Works are also proposed on a number of these tributaries. They include the Grange Stream which flows through Donnybrook Commercial Centre in Grange to the southwest of Douglas village.

The stream flows into the Ballybrack Stream at Donnybrook Hill a short distance northeast of the commercial park and runs broadly along the townland boundary of Ballybrack and Ardarrig continuing south through the Ravensdale area and Douglas Community Park. The stream runs through a culvert under Church Street and Douglas Village Shopping Centre and enters the Douglas River which flows into Cork Harbour a short distance to the east.

13.3.1.2 Togher

Togher is a suburb to Cork city lying approximately 5km to the southwest of the city centre and has in the last decades grown to become one of the city's many large suburbs. The name Togher comes from the Irish word *Tóchar* meaning causeway.

The suburb is cut by the N40 South Ring Road which runs generally along the line of the Cork and Macroom Direct Railway line. The centre of the village of Togher extends north along the Togher Road from the bottom of Spur Hill. Its southern extent is more difficult to define, extending possibly as far as Vicars Road, where it has become largely residential. In the mid-19th century Togher was a small settlement comprising a crossroads with a school house and a small cluster of houses. The entrance and lodge to Doughcloyne House (situated to the west) remains at this junction. The village changed little from that time until the second half of the century when it grew as a suburb to the city.

The Tramore River rises in high ground to the south of Togher between the townlands of Gortagoulane and Lehanagh More and flows north forming the townland boundary between the two and then between Doughcloyne and Lehanagh More before turning east (where it is named the Douglas River) towards the Douglas estuary. Much of the river is culverted in the suburban area of Togher with only small portions of the channel open.

The flood relief scheme area extends over the townlands of Douglas, Grange, Ballybrack, Ardarrig and Castletreasure in the parish of Carrigaline and barony of Cork and Lehanagh More, Doughcloyne and Deanrock in the parish of St Finbars and barony of Cork.

There are 34 no. recorded archaeological sites listed in the RMP and SMR database for the 2km study area, one of which is a redundant record (CO086-008) (**Fig 13.1 and 13.2, Table 13.4**). There are 21 no. protected structures listed in the RPS of the Cork County Development Plan (2014) within the study area (**Table 13.1**). There are 68 structures included in the NIAH within 1km of the flood relief proposed works areas (**Table 13.3**).

Table 13.4: Archaeological sites included on the RMP and SMR database within the constraints study area (see Figures 13.1 and 13.2)

RMP	Townland	Site Type
CO086-010	Ballinvuskig	Possible Church
CO086-106	Curraghconway	Fulacht Fiadh
CO086-059001-	Curraghconway	Graveyard
CO086-059002-	Curraghconway	Church
CO074-060	Curraghconway	Country house
CO086-060	Castletreasure	Country House
CO086-012001	Castletreasure	Possible Ringfort
CO086-012002	Castletreasure	Possible Souterrain
CO086-013	Castletreasure	Castle (site of)
CO086-014	Douglas	Ringfort
CO086-100	Grange	Flax Mill
CO086-102	Castletreasure	Country House
CO074-095	Grange	Woollen Mill
CO074-097	Douglas	Graveyard
CO074-098	Douglas	Graveyard
CO074-066	Ballinlough	Standing stone
CO074-089	Maryborough	Country House
CO074-063	Ballinlough	Midden

RMP	Townland	Site Type
CO074-076	Huggarts-Land	Country House
CO074-048	Huggarts-Land	Souterrain
CO074-129	Ballinaspig More	Fulacht fia
CO086-006	Doughcloyne	Holy well
CO086-007	Doughcloyne	Fulacht fia
CO086-132	Gortagoulane	Fulacht fia
CO086-008	Gortagoulane	Redundant record
CO086-058	Chetwynd	Country House
CO086-009	Lehenaghmore	Enclosure
CO086-099	Lehenaghmore	Country House
CO086-127	Lehenaghbeg	Enclosure
CO086-069	Ballycurreen	Mass-rock
CO086-107	Curraghconway	Fulacht fia
CO074-075	Cork City	Burial Ground
CO074-102	Spittal-Lands	Graveyard
CO074-094	Skahabeg North	Workhouse

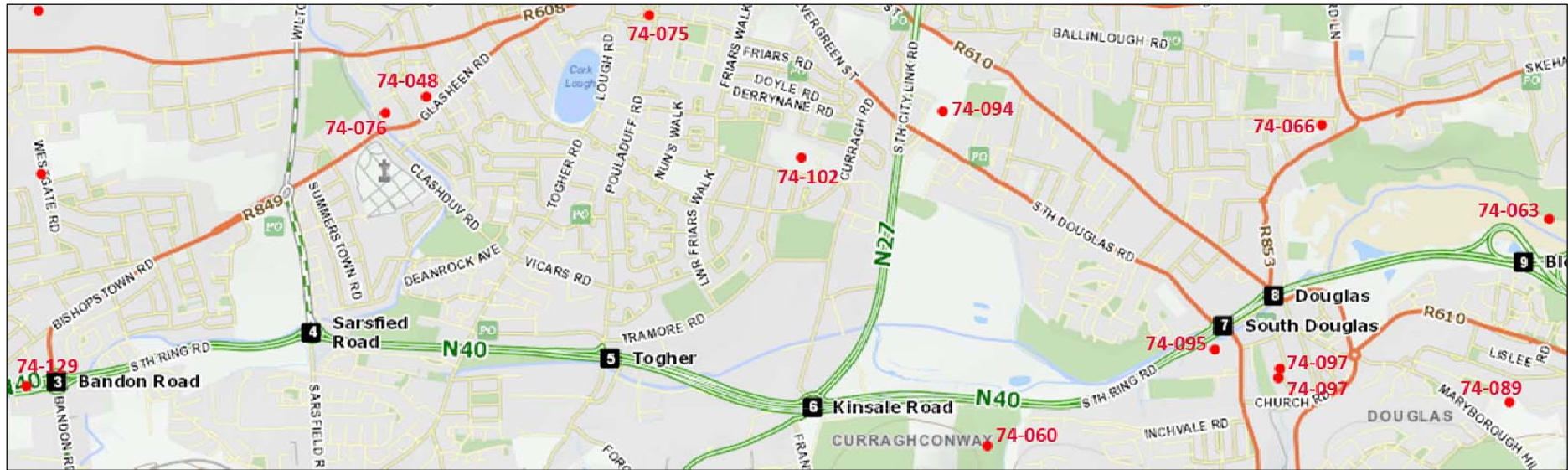


Figure 13.1: Archaeological sites included in the RMP and SMR database within the northern end of the study area (from www.archaeology.ie)

13.3.1.3 Historical Overview

The following is a chronological account of the cultural heritage of the study area. It provides an archaeological and historical overview of human activity in the study area from the prehistoric period to modern times. The archaeological timescale can be divided into two major periods, each with a number of sub-sections:

- The prehistoric period: Mesolithic - (circa 7000 to 4000 BC); Neolithic - (circa 4000 to 2400 BC); Bronze Age (circa 2400 to 500 BC) – Iron Age (circa 500 BC to AD 400)
- The medieval period: Early medieval 5th – 12th century, high medieval 12th century – circa 1400, late medieval circa 1400 – 16th century.

The pace of landscape change in Ireland accelerated in the second half of the 20th century, and many archaeological sites have been levelled by activities associated with modern development, such as housing and infrastructural improvements, and by the intensification in agricultural and industrial practices. Prior to this, the landscape changed at a slower pace, but, despite the relatively slow pace of this change, significant alterations to the landscape are in evidence since the earliest human occupation of the island. These changes and alterations to the landscape mean that the present day archaeological landscape is not fully representative of the human occupation of the island of Ireland, which has spanned *circa* nine thousand years. Archaeological sites survive today as upstanding structures, earthwork monuments or subsurface remains.

The earliest evidence for human colonisation and settlement in Ireland can be dated to 7000 BC, the Mesolithic Period. The people of this era were hunter-gatherers, entirely dependent on what food could be obtained through hunting and gathering. They used flint and other hard stone to manufacture their tools, and their presence can often be identified by scatters of these discarded stone tools in ploughed fields. The transition of these early settlers from hunting and gathering to farming in the Neolithic Period was revolutionary. It led to more permanent settlements and substantial houses, the construction of monumental megalithic structures for the dead, and a more complex and structured social hierarchy.

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 landscape of Cork harbour, there are a number of Neolithic sites, the closest of which is a settlement site in Ballinure on the Mahon peninsula (CO074-130), discovered during development works approximately 3km to the northeast (Purcell 2005).

There are six known archaeological sites which date to the Bronze Age in the study area, a standing stone in Ballinlough (CO074-066) and five fulachta fia, two in Curraghconway (CO086-106 and CO86-107) and one each in Ballinaspig More (CO074-129), Doughcloyne (CO086-007) and Gortagoulane (CO086-132). Fulachta fiadh are ancient cooking sites also known as burnt mounds which present as low crescent shaped mounds usually in poorly drained ground.

Many have been levelled and are visible as a spread of heat shattered stones and blackened soil in ploughed fields. Standing stones had a number of possible functions in the landscape from prehistoric burial markers to boundary markers along ancient routeways. In more recent times they were sometimes erected as scratching posts for cattle and these can be difficult to distinguish from ancient examples. Ancient standing stones are generally thought to be of Bronze Age date, but may also be later extending into the Iron Age or historical period. The precise date of these monuments can usually only be determined by excavation. The Ballinlough standing stone lies within the front garden wall of a modern dwelling house at Ardmahon Estate.

There are a number of sites within the study area which date to the Early Christian or Early Medieval Period (c. 500 to 1100 AD). The early medieval period in Ireland is characterised by the introduction of Christianity to the island from the late 4th century onwards becoming widely established during the second half of the sixth century. One of the most characteristic monuments of this period was the ringfort, occupied by the elite and their families of the time. Ringforts are defended farmsteads generally circular or oval in plan defined by an earthen bank with an external ditch or fosse. On more elaborate sites additional banks and ditches can be present (bi-vallate and tri-vallate) but the large majority of ringforts are uni-vallate. The main phase of construction and occupation of these sites dates from the beginning of the 7th century AD to the end of the 9th century. There is a ringfort in Douglas (CO086-014) and a possible ringfort in Castletreasure (CO086-012001). Some ringforts have associated souterrains, or man-made underground tunnels leading to a chamber or series of chambers. A possible souterrain (CO086-012002) is associated with the ringfort in Castletreasure and there is also a souterrain in Huggarts-Land (CO074-048) in a suburban garden. Two enclosures in Lehenaghmore (CO086-127) and Lehenaghbeg (CO086-127) may be levelled ringforts which no longer survive above ground.

The site of Castletreasure Castle (CO086-013) is at the southeast of the study area. No visible trace of the castle survives but its location was marked on all editions of the OS 6 inch maps and some structural remains were depicted on the 1842 OS map. Lewis, in 1837 (Cadogan 1998, 222) notes ‘some slight remains of Treasure castle’.

There are four graveyards, a burial ground, a church and a possible church in the study area. Two of the graveyards are adjacent to each other in Douglas (CO074-097 and CO074-098). Another is in Curraghconway (CO086-059001) adjacent to the Holy Trinity church in Frankfield (CO086-059002) (built in 1838 and probably designed by the Pain brothers) and the fourth is St Joseph’s Cemetery in Spittal-Lands (CO074-102) which is still in use. The burial ground is in Cork city (CO074-075) and was a mass grave of disarticulate remains discovered in Greenmount in 1990. There is a possible church in Ballinvuskig (CO086-010) in a field named Church Field on the 1841 OS 6-inch map and according to local information, there was a church and burial ground at this location. Although churches and graveyards can date to a multitude of periods, all of these sites appear to be post medieval in date. Douglas itself was part of Carrigaline Parish during the medieval period, but appears to have become a parish, probably in 1752, when a church was built near Grange Cross. No visible remains of this church now survive (Foley 1991, 39-40).

There is a record that the Augustinians held property including a mill in west Douglas at the beginning of the Reformation (ibid. 166). The mill was apparently built by the O'Dalys in Ballybrack (ibid.).

There is also a tradition of a Mass Rock in a wooded area in Donnybrook in a small structure known as the 'Shelly House'. Foley (ibid. 41), however, notes this is an unlikely location for a Mass Rock as it is in proximity to a number of country houses. There is a mass rock in Ballycurreen (CO086-069) where a metal cross pinned to a rock face marks the location. There was a holy well in Doughcloyne (CO086-006) which was disturbed and buried when the Cork Bandon Railway line was built but was walled and covered with an arch of stone.

In the post medieval period when the walls of Cork city were removed and the suburbs expanded many of its wealthier citizens choose to move beyond the city's medieval core. In the 18th century Douglas was one of the favoured areas, where the city's merchant princes chose to locate their new more spacious homes mixing them with the existing country houses and estates of the wealthy farming community. There are seven country houses within the study area included in the SMR database. Two are in Castletreasure (CO086-060 and CO086-102) and one each in Maryborough (CO074-089), Curraghconway (CO074-060), Huggarts-Land (CO074-076), Chetwynd (CO086-058) and Lehenaghmore (CO086-099). Maryborough House in Maryborough (CO074-089) is an early 18th century house which is now a hotel. Archaeological investigations undertaken in the grounds of the house in 2014 revealed a dump of slate which probably related to removal of weather slating from the original house (Quinn 2014). The house in Huggarts-Land (CO074-076) is an 18th century gable ended house. Vernon Mount in Curraghconway (CO074-060) and one of the Castletreasure houses (CO086-102) are also 18th century in date while Cruiskeen Lodge in Lehenaghmore (CO086-099) is late 18th /early 19th century in date. In contrast to the affluent country houses of the upper classes there is a mid-19th century workhouse (CO074-094) now within the St Finbarr's Hospital complex which was built by the Poor Law Commissioners in Skahabeg North within Cork city.

There is a midden in Ballinlough (CO074-063) on the northern side of the Douglas River estuary which comprised a layer of shell, bones and modern pottery and glass which probably dates to the 18th or 19th century.

Douglas was a thriving milling village from the 18th to the 20th century. There are two mills included in the RMP within the study area; St Patrick's Woollen Mills (Douglas Mills) Grange (CO074-095) and Douglas Woollen Mills (now Donnybrook Commercial Centre) (CO086-100) also in Grange. Douglas Woollen mills in Donnybrook are in the vicinity of an earlier sailcloth mill dating to the early 18th century (Foley 1991, 15) which was founded by the Besnard family. By the middle of the 19th century the firm was taken over by Wallis and Pollock and in 1869 Pollock extended the mills at Donnybrook. In 1890 the mill was taken over by Morroghs and finally closed in 1971 (ibid. 31). St Patrick's Woollen Mills was founded in 1882 by the O'Brien family (ibid.) and is located at the western side of the village of Douglas.

There were a number of smaller mills in the village including one at Ravensdale, known as “the scutching mill” (ibid. 26). Another mill was located between Church Street, Church Road, West Douglas Street and St Lukes Cemetery. The mill pond associated with this mill is shown and named on the 1842 OS 6-inch map with a mill race shown on its eastern side (**Fig. 13.3**). The area is now known as The Pond Bank. The associated buildings are not named but may include a U-shaped building on the southeastern corner of Church Street and West Douglas Street.

A Flour Mill is named and depicted on the 1842 OS 6-inch map at the eastern edge of Ballybrack townland. The flour mill is shown on the map as a large irregular L-shaped building with what appears to be a mill race running directly west of the Ballybrack Stream. Several smaller buildings are shown nearby which may also be associated with the flour mill. It is not shown or named on any of the later OS map editions and no above ground remains of it now survive. The scutching mill discussed by Foley (1991, 26) is also in this area and it is possible the building may have accommodated both industries at different times.

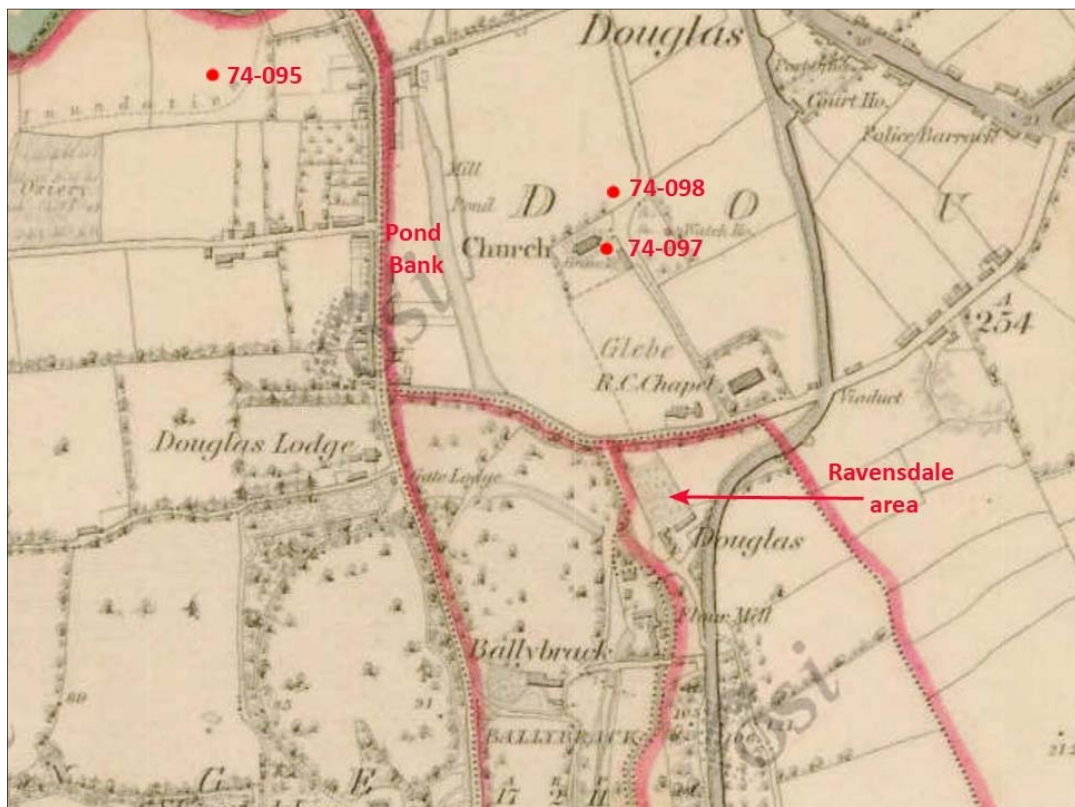


Figure. 13.3: Extract from OS 6-inch map (1842) showing Douglas area

13.3.1.4 Cartographic Information

The Douglas area is depicted on the 1842 OS map as mainly rural with the village of Douglas on its northern edge, centred at the confluence of the Douglas River and the Tramore River. The Besnards sailcloth factory is shown in Donnybrook (**Fig. 13.4**) and the mill at Ravensdale is also depicted and named Flour Mill.

A mill pond is marked to the south of the Ravensdale mill and another is shown and named to the west of St Luke's Church and graveyard and east of West Douglas Street, it is thought that this served a mill in the area of Douglas West and Church St. The land to the south of Ravensdale is occupied by estate houses and gardens and there are a number of houses also in the vicinity of Besnards sailcloth factory in Donnybrook.

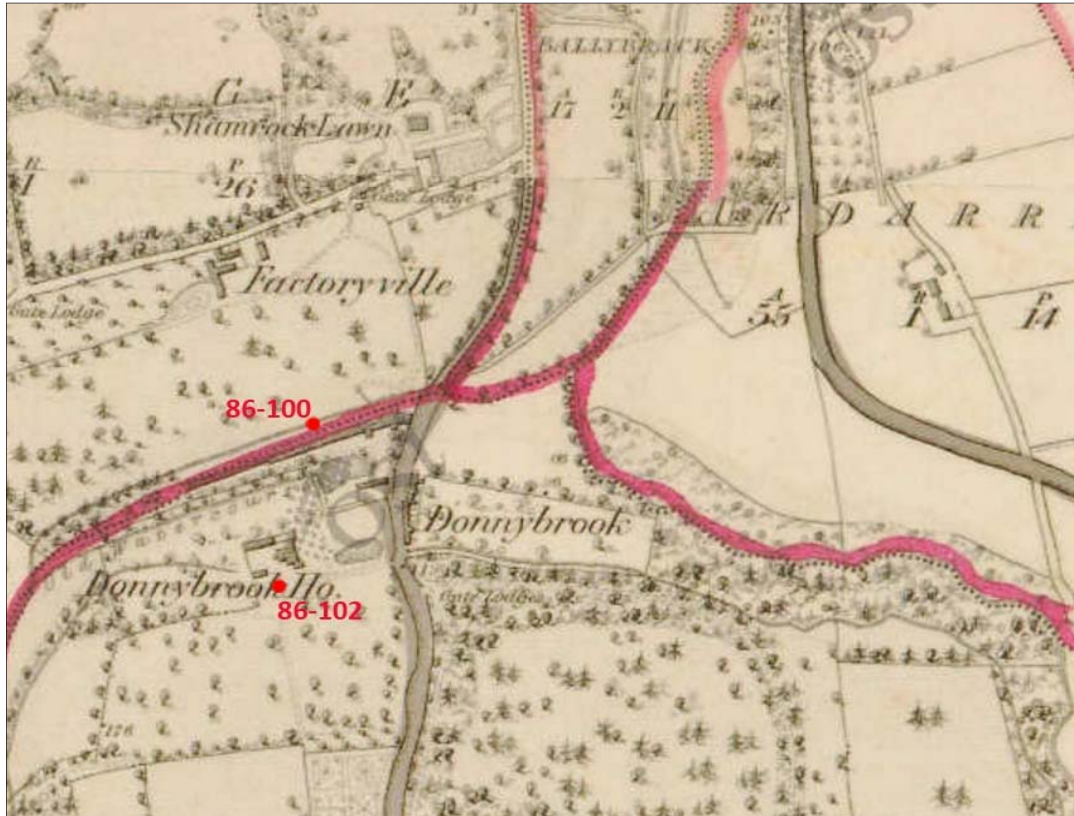


Figure 13.4: Extract from OS 6-inch map (1842) showing Donnybrook area

By the turn of the 20th century, when the 25-inch OS map was compiled, settlement in the village of Douglas has become denser (Fig. 13.5). St Patrick's Woollen Mills, and to the south Douglas Woollen Mills, (largely on the site of Besnards sailcloth factory) appear as prominent features (Fig. 13.6). The Ravensdale mill is no longer shown and the mill pond to the west of St Luke's Church and graveyard and east of West Douglas Street is no longer shown.

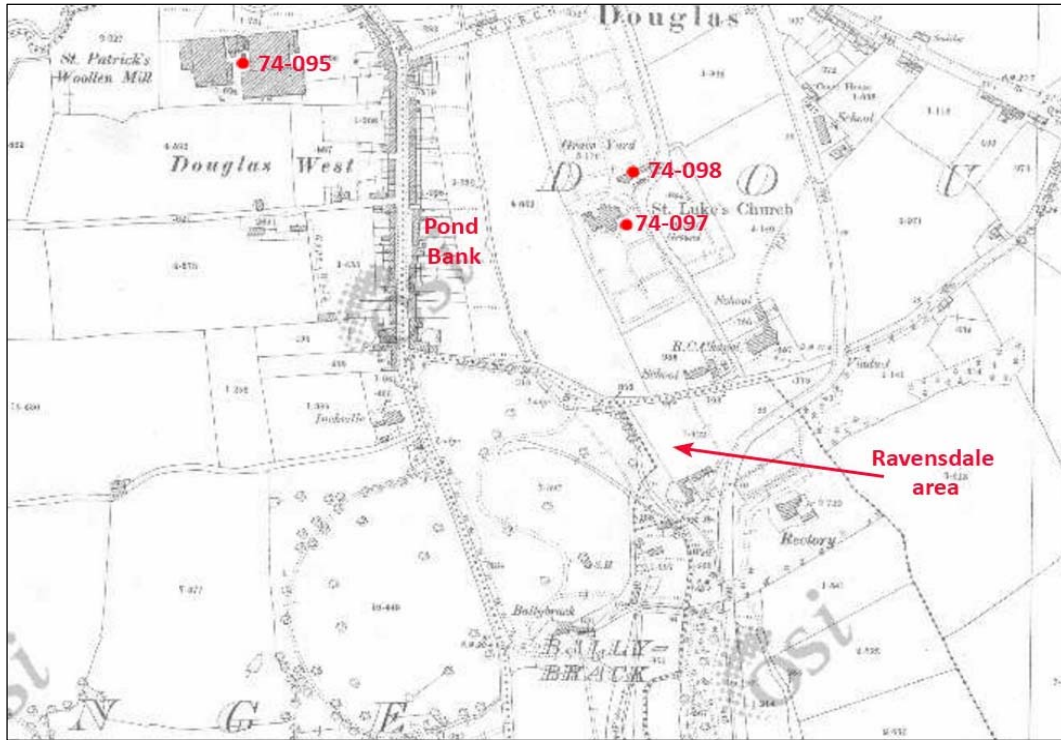


Figure 13.5: Extract from OS 25-inch map (1902) showing Douglas area.

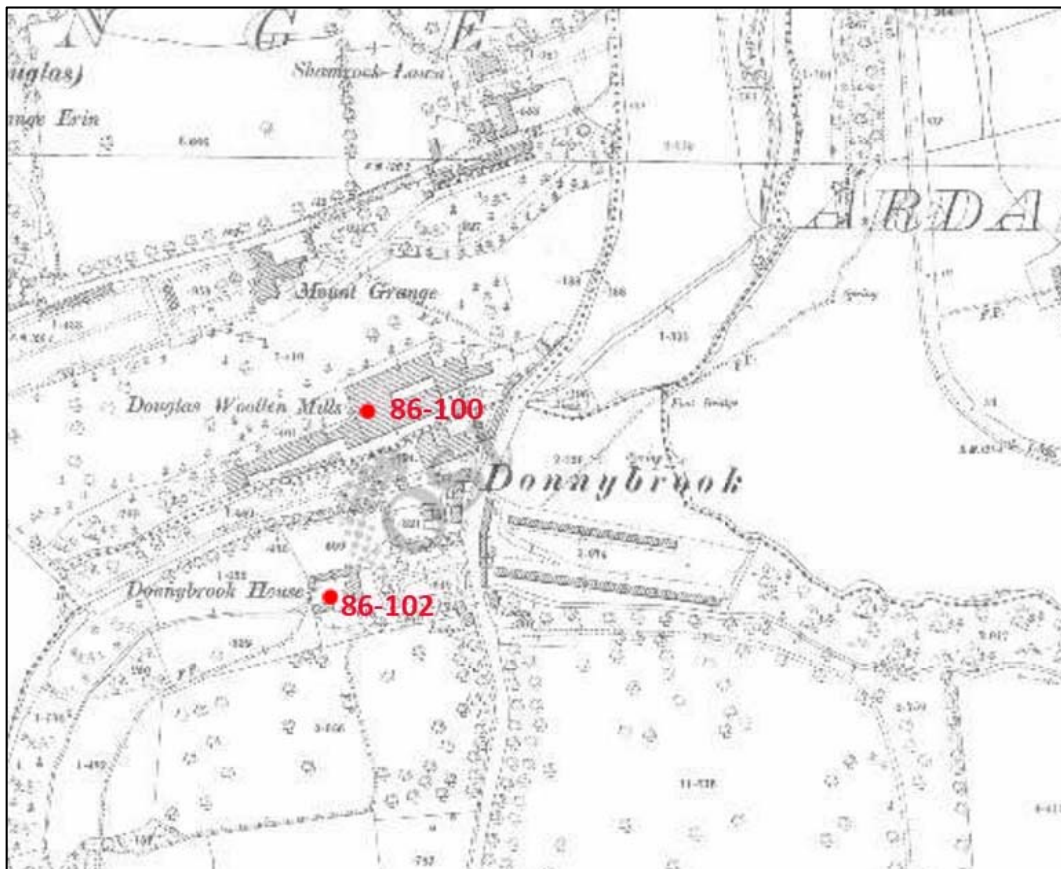


Figure 13.6: Extract from OS 25-inch map (1902) showing Donnybrook area

In the following century the nature and scale of the settlement both within Douglas and the surrounding area changes completely from rural to suburban. Numerous residential housing estates have created a large suburb of Cork city and the centre of Douglas is a thriving hub of commercial activity. The rural village and surrounding landscape of country house estates has been completely replaced.



Figure 13.7: Extract from OS 6-inch map (1842) showing Togher area

In the mid-19th century Togher is depicted and named on the 1842 OS map as a crossroads with a school, a smithy and a small cluster of houses (Fig. 13.7). The entrance and lodge to Doughcloyne House (situated to the west) is at this junction. The surrounding land is largely agricultural dotted with country houses and associated gardens. By the turn of the 20th century the cluster of houses, the lodge and the smithy remain on the 25 inch OS map (Fig. 13.8). The school, however, is now further to the north (along the Togher Road), houses are depicted along the road to the north of the school and the name Togher is now attached to a set of houses further north. The Cork & Macroom Direct Railway line runs east-west between the houses. The rural setting of the village still prevails as it did in the mid-19th century. It remained thus until the second half of the century when it grew as a suburb to the city. In more recent times the railway fell into disuse and became the route for the N25 motorway.

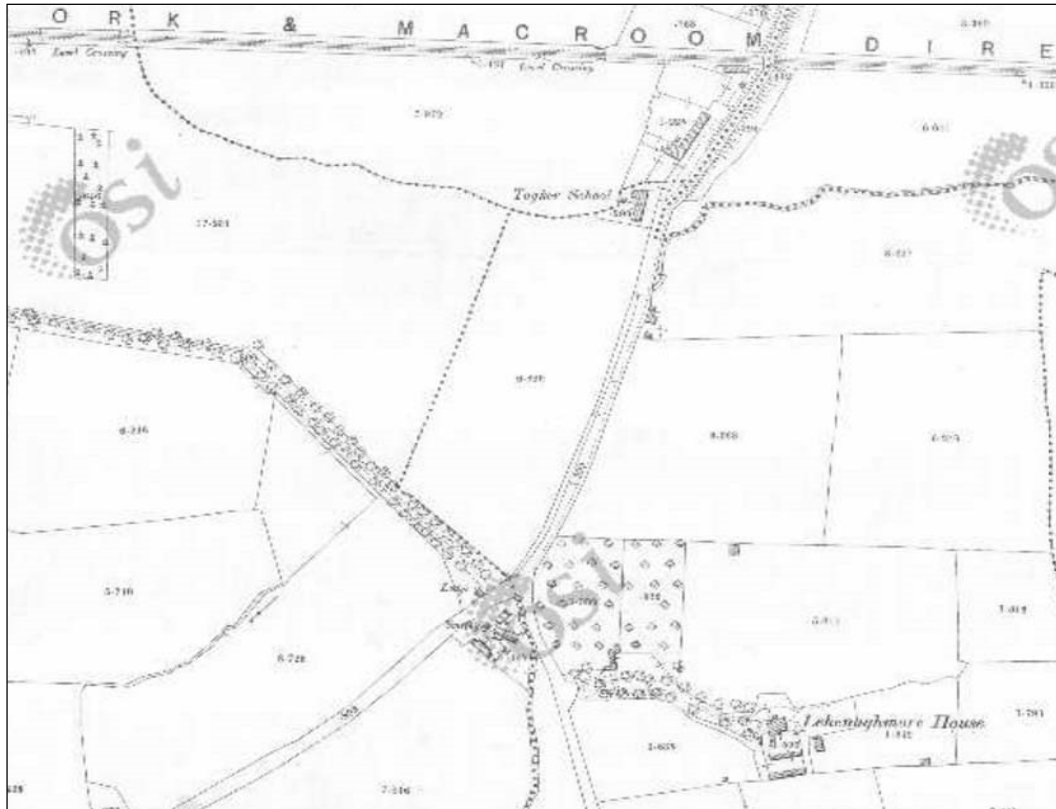


Figure 13.8: Extract from OS 25-inch map (1902) showing Togher area.

13.3.1.5 Townland Boundaries and Names

Douglas comes from Dúglas meaning darkish stream. Grange comes from An Ghráinseach meaning grange or monastic farm. Ballybrack comes from An Baile Breac meaning the speckled townland or homestead. Ardarrig comes from Ard Dearg meaning red high or height. Doughcloyne comes from Dúchluain or Dúbh chluain meaning black lawn or bog meadow. Lehenagh More comes from Leithenach Mór meaning half or side and Mór meaning big.

13.3.2 Archaeological Investigations

A number of archaeological investigations have been undertaken in the study area, some of which have been discussed above. Archaeological testing was undertaken in Lehenagh More close to Cork Airport in 2004. No feature or finds of archaeological significance were revealed (Purcell 2004). Archaeological testing was carried out in Doughcloyne and a number of other townlands in advance of the upgrading of the N25 South Ring Road. No features of archaeological significance were revealed during the testing (Conran 2010).

As part of this project, a wading and metal detector survey of the watercourses to be impacted was undertaken under licence number 16D48 and 16R65. The watercourses were waded and the stream banks were walked and inspected in an attempt to ascertain if any archaeological and cultural heritage features survived.

In as much as was possible, the line of the original stream channels were followed as well as the existing channels. No feature of archaeological or cultural heritage significance was noted. The full survey is included in **Appendix 13.1**.

13.3.3 Site Inspection

The primary purpose of the site inspection is to assess the physical environment in which the development is proposed. The proposed development site was inspected on a number of occasions, most recently on the 17th May 2016 in dry, generally sunny weather conditions. The two proposed construction compounds were visited on the 16th and 17th of June 2016.

Each area of impact was inspected and is described below. All plates (photographs) may be viewed in **Appendix 13.2** of this EIS.

Grange Stream in Donnybrook Commercial Park, Douglas. Grange and Castletreasure townlands (Plates 13.1 – 13.3)

The stream at this location now runs in a modified channel comprising an open channel at the western end and a culvert at the eastern end. The larger western section comprises a sloping earth cut channel with large boulders along both banks and smaller stones along the stream bed. Above the banks the sides of the channel are sloping and grass covered. Another small section of open channel lies to the east of this, separated from it by a small culvert, and comprises a stepped concrete channel with railings above. The remainder of the stream is within a culvert extending through the eastern section of the commercial park to Donnybrook Hill at the east. A road and car park flank both sides of the open sections of the stream with a modern range of commercial buildings to the north. The culverted section is covered by an internal road which is adjoined by hard standing areas used for car parking and as yards. The road and car park will provide the proposed access route to the works area.

Ballybrack Stream in Douglas Community Park. Douglas townland (Plates 13.4 – 13.7)

The stream runs in an earth-cut channel along the western side of the Community Park. The stream bed is stoney and stones are visible protruding along parts of the bank. The bank and the bed are heavily eroded in places with a narrow, deeper channel cut along parts of the bed. The stream is quite fast flowing. At the southern end of the park the stream channel is lined in concrete before entering a concrete culvert running under Church Street. Stone gabions extend southwards along the western bank for a short distance from the concrete channel. A small number of pipes cross the stream and there are three outfall pipes discharging into it. Towards the southern end of the park a warehouse lies along the western bank of the stream and a concrete wall forms the western bank here. Elsewhere the bank is generally covered in low vegetation with some mature trees and tree stumps. At the southern end of the park the stream is again concrete-lined before entering a concrete culvert which carries it under Church Road.

The stream is separated from the park by steel fencing. The park itself is largely laid out in grass cut by a number of pathways with sports and playground facilities provided. A number of individual properties lie on the eastern bank of the stream and there is no visual trace of the mill pond shown on the 1842 OS map in the area of these properties. The access routes to the proposed works area are currently laid out in grass and concrete both within the park and outside the park to the south of Church Road.

Ballybrack Stream in Ravensdale, Douglas. Douglas townland (Plates 13.8 – 13.15)

The stream runs along the southern side of Church Road for some distance within a concrete stone lined channel. Two modern bridges cross the stream, both opening from Church Road; the western one forms part of a recreational track south to Ballybrack Woods and the eastern one provides access to the ICA Hall.

The stream turns south through Ravensdale where it appears to be largely within its original channel. The bed is stoney with some silty patches and the banks are generally earth-cut with some sections of wall and gabions along the western bank. At the southern end of Ravensdale the eastern bank is also concrete-lined. The stream runs mainly along property boundaries with a public road along the eastern side, although at one point a warehouse/workshop lies along its eastern bank. The eastern bank is generally covered in low vegetation with some semi-mature trees where the concrete walls have not been constructed. The stream is crossed by three modern bridges (Lower, Middle and Upper Ravensdale Bridges) which provide access to the dwelling houses on the western bank and a large pipe crosses the stream bed between the middle and upper bridges. The southern end of this section of stream is an earth cut channel in Ballybrack Woods crossed by a modern bridge with a trash screen below. Proposed access routes to the works areas are along existing roads within Ravensdale, two grass covered areas along both sides of Church Road, the northern one of which is within the community park and along the existing path to Ballybrack Woods.

Tramore River at Douglas Mills/St Patricks Mills. Grange townland (Plates 13.16 – 13.18)

The river runs in a concrete channel which extends east from a concrete culvert under the N40 South Ring Road. The river is open within the concrete channel for a short distance before entering another culvert to the east running under West Douglas Street and Douglas Village Shopping Centre. The river channel appears to have been moved south of its original course to accommodate the N40. A road and car park lie to the south of the channel and these combined with Douglas Road West will provide the access routes to the proposed works area.

Tramore River at Lehenaghmore Industrial Estate. Doughcloyne and Lehenagh More townlands (Plates 13.19 – 13.20)

The river runs in an earth-cut channel with a stoney bed. The banks are overgrown with low vegetation and with some mature trees. To the northeast the river runs into a concrete culvert closed by a large trash screen.

The culvert runs through the area of Brooke Avenue and emerges to the north of Brook Avenue on the western side of Lehenaghmore Road. The road to the industrial estate lies to the south and east of the stream and will provide the access route to the proposed works area.

Tramore River adjacent to the Lehenaghmore Road, upstream of Togher Road Roundabout. Togher, Doughcloyne and Lehenagh More townlands (Plates 13.21 – 13.23)

The river emerges from a culvert and flows in a relatively narrow channel west of Lehenaghmore Road. A random rubble wall along the eastern bank of the river separates it from the road. The western bank is heavily overgrown with some occasional patches of random rubble wall visible behind the undergrowth. Some erosion of the western bank is also apparent. The river bed is generally stoney with some silt. At the northern end of this stretch the river runs into a culvert under the Togher Roundabout which is closed with a large trash screen. The culvert runs along the western side of Togher Road.

Tramore River at Deanrock and Lehenagh More, Togher Road and north of Greenwood Estate, Togher (Plates 13.24 – 13.25)

The river emerges from a culvert under the Togher Road and runs in a concrete channel to the north (rear) of the houses in Greenwood Estate. A hard surfaced area to the north of the channel will provide the access route to the proposed works area.

Construction Compound (Plate 13.26)

The proposed construction compound will be in an existing compound area on the northern side of Togher Industrial Estate. The area is surfaced and there is a standing building at the western end.

13.4 Characteristics of the Proposed Scheme

A detailed description of the proposed scheme is included in **Chapter 3 Description of the Proposed Scheme** of this EIS. Refer also to **Chapter 4 Construction Activities** for details on construction phasing.

In summary, the scheme will consist of the construction of flood defences along the Tramore River, Ballybrack Stream and Grange Stream. The works to be carried out on site are summarised below:

- Construction of new flood defence walls and/or replacement of existing walls with new flood defence walls
- Replacement of and/or extension of existing culverts
- Removal of and/or replacement of bridges
- New underground surface water pumping stations
- Removal of existing trash screens and construction of new coarse screens
- Local channel widening, deepening, realignment and regrading of river channel
- Construction of new earthen flood defence embankment

- Provision of civil works such as road/footpath re-grading at a number of locations;
- Removal of vegetation and trees to facilitate construction works
- Protecting drainage outlets along the line of flood defence works with non-return flap valves;
- Once construction is completed, ongoing maintenance of the river channel, trash screens etc.

13.4.1 Construction Impacts

As the proposed flood relief scheme will extend over a number of different locations each is evaluated below.

Grange Stream in Donnybrook Commercial Park, Douglas Grange and Castletreasure townlands

Works will comprise regrading of the existing channel to remove sedimentation and the reinforcement of the channel banks with rock armour or gabions as required. Two existing coarse screens are to be removed along the channel and services diverted. Further to the east where the stream is already culverted a proposed 2.4m wide by 1.8m high new culvert will be constructed extending to the road at Donnybrook Hill. Within the commercial park the stream runs within a modified channel; a culvert at the eastern end and two open sections at the center and western end. The western open section is earth-cut with both banks defined by large boulders. The smaller central section is a stepped concrete channel. The western section was waded and metal detected and no archaeological features or finds were noted. The remainder of the stream running through the eastern section of the park is culverted below an existing road and hard standing area. The stream is part of the mill race to a flax mill (CO086-100) which stands immediately to the north of the culverted section.

Associated millhouses at the eastern end of the commercial park are listed in the RPS of Cork County Development Plan (2014) (RPS 00566). The NIAH also includes a number of buildings within the milling complex, including the former water mill (20908622), associated store or warehouse (20908628) and office (20908629).

A range of modern buildings and a road and car park surround the open sections of the stream suggesting significant amounts of ground disturbance has occurred in the recent past. The culverted section was constructed probably during the second half of the 20th century (it is shown as an open channel in 1933) and its construction is likely to have caused significant disturbance to surrounding areas. The proposed regrading and reinforcement works on the open channel will involve further ground disturbance. It is unlikely that *in situ* archaeological deposits survive in the area, however, any such deposits will be negatively impacted by the works. The works within the sections of open channel will have a negligible impact on the mill houses, flax mill and other associated buildings which are located at the eastern end of the park with limited visibility over the open channel.

The setting of the features may be negatively impacted by the works on a temporary basis, however this will be confined to the construction process.

The proposed culvert at the eastern end of the commercial park will be located to the south of the millhouses listed in the RPS (RPS 00566). The culvert will be within the setting of the millhouses and overlooked by them from the north. The visual amenity of the millhouses will be negatively impacted during the construction of the culvert, this will, however, be a temporary impact confined to the duration of construction. The setting of the buildings included in the NIAH will also be negatively impacted by the construction of the culvert. This impact will be temporary extending only through the construction process. The construction of the culvert will involve extensive ground disturbance within an area which has been previously disturbed. It is unlikely that *in situ* archaeological deposits survive in the area, however, any such deposits will be negatively impacted by the works.

The elimination of future flooding events from impacting the buildings will have a significant positive impact on them.

Ballybrack Stream in Douglas Community Park. Douglas townland

Works will include local regrading along the right (east) bank of the stream in the northern half of the park. In the southern half of the park works will comprise the widening and deepening of the stream channel.

The entire length of the stream within the park was waded and metal detected and no archaeological features or finds were noted. The stream is largely along the line of the 19th century mill race and at the southern end the eastern edge of the associated mill pond.

The construction works for the regrading, flood defence wall and channel widening and deepening will involve extensive ground disturbance. Such works may have a significant negative impact on sub-surface archaeological remains including elements of the mill infrastructure if they survive.

Church Road Culvert

The existing culvert will be replaced by a new, larger culvert. The construction works for the larger culvert will involve ground disturbance to previously disturbed ground. The proposed works are likely to have a negligible impact on cultural heritage remains.

Ballybrack Stream in, Ravensdale, Douglas. Ardarrig and Ballybrack townlands

Works will comprise channel widening and construction of new stone-clad flood defence walls along one or both banks, replacement of three modern bridges one of which will have a larger trash screen installed. The flood defence walls on both banks will extend and will tie into higher ground as necessary. The flood defence wall on the west bank of the stream will also tie into higher ground as necessary. The existing ICA Bridge will be removed and replaced. The existing Ravensdale Lower Bridge is to be replaced with a wider bridge. The cycle track bridge will be replaced and a larger trash screen will be installed.

The stream was waded and metal detected along its entire length and no archaeological features or finds were noted. The construction works for the flood defence walls, channel widening and bridge replacements will involve extensive ground disturbance. Such works may have a significant negative impact on sub-surface archaeological remains, if they survive. A pair of semi-detached two storey houses (20871048) and a detached two storey house (20871047) are listed in the NIAH on Church Road. They lie 20m and 10m (respectively) east of the channel where channel widening and a flood defence wall will be constructed. The proposed works may temporarily negatively impact the setting of the houses and the flood defence wall may permanently have a negative impact on the visual amenity of the houses. The elimination of future flooding events from impacting the houses will have a significant positive impact on them.

Tramore River at Douglas Mills/St Patrick's Woollen Mills in Grange townland

Works will comprise the construction of a new 1.2m high flood defence wall along the south bank of the Tramore River and the construction of new reinforced concrete bridge parapets 1.2m high.

The river, at this location, runs within a modified concrete channel. The construction works for the flood defence wall and parapet walls will involve ground disturbance.

The woollen mill (CO074-095) is located less than 20m to the south. A road and car park lie between the mill and the river channel. The construction of these combined with the modifications to the river channel suggest significant amounts of ground disturbance have been undertaken in the recent past. The construction works for the flood defence wall will involve further ground disturbance. It is unlikely that in situ archaeological deposits survive in the area, however, any such deposits will be impacted by the works. The proposed works are likely to have a minor impact on subsurface archaeological remains. Douglas Woollen Mills is included in the RPS of Cork County Development Plan (2014) (RPS 00482) and also included as St Patrick's Woollen Mills (Industrial Estate) (RPS 01243). The river is approximately 20m north of the building and lies within the curtilage of the mill. It is also listed in the NIAH as a former water mill (20871032) and two engine houses (20871030 and 20871031) in Douglas Commercial Estate. A terrace of eight houses (20871033) immediately south of the river is also listed in the NIAH. The proposed works may temporarily negatively impact the setting of the buildings and the flood defence wall and parapets may permanently have a negative impact on their visual amenity. The elimination of future flooding events from impacting the buildings will have a significant positive impact on them.

Tramore River at Lehenaghmore Industrial Estate. Doughcloyne and Lehenagh More townlands.

Works will comprise the construction of a new trash screen, a slight realignment of the channel and defence walls.

The stream was waded and metal detected along its length and no archaeological features or finds were noted.

The construction works for the flood defence walls and trash screen will involve extensive ground disturbance. Such works may have a significant negative impact on sub-surface archaeological remains, if they survive.

Tramore River at Lehenaghmore Industrial Estate Culvert. Doughcloyne and Lehenagh More townlands.

Works will involve removal of the existing culvert network and replacement with a single 3m wide and 1.4m high concrete culvert. The construction works for the larger culvert will involve ground disturbance to previously disturbed ground. The proposed works are likely to have a negligible impact.

Tramore River upstream of Togher Road Roundabout, Togher. Doughcloyne and Lehenagh More townlands.

Works will comprise the construction of a new 3m wide by 1.4m high concrete culvert to replace the existing 2.5m wide by 0.9m high open channel.

The stream was waded and metal detected along its length and no archaeological features or finds were noted. The construction works for the culvert will involve extensive ground disturbance. Such works may have a significant negative impact on sub-surface archaeological remains, if they survive. A single-storey house listed in the NIAH (20870009) is located immediately west of the channel and its grounds define the western bank of the river.

The proposed works will impact the grounds of the house and will negatively impact its setting. The elimination of future flooding events from impacting the house will have a significant positive impact on the house.

Tramore River at Togher Roundabout and Togher Road, Doughcloyne and Lehenagh More.

Works will comprise the removal of the existing culverts and their replacement with new concrete culverts. The construction works for the larger culvert will involve ground disturbance to previously disturbed ground. The proposed works are likely to have a negligible impact. The gate lodge to Doughcloyne House listed in the NIAH (20870008) is located on the western side of Togher Roundabout. The proposed works to the road may temporarily negatively impact the setting of the building. The Church of the Way of the Cross listed in the NIAH (20870007) is located on the western side of Togher Road. The proposed works to the road may temporarily negatively impact the setting of the church.

Tramore River at, Togher Road, Togher. Deanrock and Lehenagh More.

Works will involve widening the existing channel by 1m over this stretch and the construction of a new concrete retaining wall with a 1.2m high railing on the south bank.

The river at this location is within a modified concrete channel. The construction works for the retaining wall will involve ground disturbance, however, as this channel has already been modified it is unlikely that *in situ* archaeological deposits will be impacted. The proposed works are likely to have a negligible impact.

13.4.2 Operational Impact

The operation of the flood relief scheme will have a positive impact on buildings and recorded monuments listed in the RPS of the Cork County Development Plan (2014), NIAH and RMP where the risk of flooding will be significantly reduced. No negative operational impacts on archaeology, architecture and cultural heritage are expected as a result of the construction of the scheme.

13.4.3 Potential Cumulative Impacts

The construction of flood relief walls adjacent to a number of buildings listed in the RPS and NIAH and recorded monuments listed in the RMP will reduce the visual amenity of the watercourses within the urban environment.

13.5 Mitigation Measures

13.5.1 Construction Mitigation Measures

Construction work on the proposed development site will require extensive ground disturbance in a number of locations. Some of these areas have been previously disturbed. However, *in situ* localised sub-surface deposits may survive in places. Archaeological monitoring of ground works will be carried out at a number of locations including:

- Ballybrack Stream, Douglas townland, in Douglas Community Park
- Ballybrack Stream in Ardarrig and Ballybrack townlands, Ravensdale, Douglas
- Tramore River at Doughcloyne and Lehenagh More townlands, Lehenaghmore Industrial Estate
- Tramore River at Doughcloyne and Lehenagh More townlands upstream of Togher Road Roundabout, Togher

Intermittent archaeological monitoring/inspections of subsurface disturbance will be carried out in the following areas:

- Grange Stream in Grange and Castletreasure townlands in Donnybrook Commercial Park, Douglas
- Tramore River at St Patrick's Woollen Mills/ Douglas Mills in Grange townland

Any archaeological features identified during archaeological monitoring 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.

Two structures included in the RPS in Cork County Development Plan (2014) are in proximity to the proposed works; St Patrick's Woollen Mills which is included twice in the RPS, listed as St Patrick's Woollen Mills (RPS 01243) and Douglas Woollen Mills (RPS 00482) and millhouses associated with the milling complex at Donnybrook Commercial Park (RPS 00566).

All construction works will be securely fenced off and separated by a buffer zone from the Protected Structures. Intermittent archaeological monitoring and inspection of the buildings will be undertaken.

A number of buildings included in the NIAH are in proximity to the proposed works. In Douglas a number of these are adjacent to the works areas; a terrace of eight houses (NIAH 20871033) near Tramore River at Douglas Mills/St Patrick's Woollen Mills and the former water mill (20908622), associated store or warehouse (20908628) and office (20908629) associated with the milling complex at Donnybrook Commercial Park.

In Togher one of these is adjacent to the works areas; a single-storey house (NIAH 20870009) near Tramore River upstream of Togher Road Roundabout, Togher. Archaeological monitoring and inspection of the buildings will be undertaken.

13.5.2 Operational Mitigation Measures

No operational mitigation measures are required.

13.6 Residual Impacts

The risk of flooding of a number of structures and buildings included in the RPS of the CDP (2014), the NIAH and the RMP for Co Cork will be significantly reduced. No other residual impacts on the archaeological, architectural and cultural heritage are foreseen if the proposed mitigation is undertaken.

13.7 References

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