

PROJECT:

Fermoy Weir, Fermoy, Co. Cork

SCOPE:

Underwater Archaeological Impact Assessment (UAIA)

PREPARED BY:

Julianna O'Donoghue and Caitlyn Haskins

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T.J. O'Connor & Associates

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Abstract

Mizen Archaeology was engaged by *T.J. O'Connor & Associates* on behalf of *Cork County Council* to undertake an Underwater Archaeological Impact Assessment (UAIA) in advance of proposed works to Fermoy Weir, Fermoy, Co. Cork. The underwater archaeological impact assessment included both a desktop study and a site inspection. The Fermoy weir had deteriorated over the last few years, as was first highlighted in 2016 by Inland Fisheries. This UAIA is to be used as guidance in the development of a design for weir remediation works and the upgrade of fish passage through the weir. The weir itself, the quay wall, Fermoy Bridge, and the historic town of Fermoy all have one or several cultural heritage designations.

1.Introduction

Mizen Archaeology was engaged by *T.J. O'Connor & Associated* on behalf of *Cork County Council* to undertake an Underwater Archaeological Impact Assessment (UAIA) in advance of proposed works to Fermoy Weir, Fermoy, Co. Cork. The underwater archaeological impact assessment included both a desktop study and an underwater survey. The underwater survey was carried out in June 2020.

The Fermoy weir has deteriorated over the last few years, as was first highlighted in 2016 by Inland Fisheries. The initial damage to the weir was on the section east of Fermoy Bridge along the section referred to as the Mill Race Weir Wall. Cork County Council commissioned a survey of the weir in 2018 which was completed in August 2018 to determine its condition.

Attempts to advance a project to address the remediation of the weir in Fermoy and the upgrade of fish passage through the weir have been underway for well over a decade. Fermoy Town Council were the owners of the weir at Fermoy Bridge. With the dissolution of Town Councils in June 2014, the ownership transferred, along with the Town Council's functions, to Cork County Council. The underwater archaeological impact assessment is to be used as guidance in the development of a design for weir remediation works and construction of a fish passage.

1.1 Convention, Legislation and Guidelines

The archaeological impact assessment was undertaken with due regard to the following national and international protective conventions, guidelines and legislation:

- National Monument Act, 1930, amended 1954, 1987, 1994, and 2004
- Heritage Act, 1995
- National Cultural Institutions Act, 1997
- The Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous) Provisions Act, 1999
- Frameworks and Principles for the Protection of the Archaeological Heritage, 1999, Departments of Arts, Heritage, Gaeltacht and the Islands
- Local Government (Planning and Development) Act, 2000
- European Convention on the Protection of the Archaeological Heritage (the 'Valletta Convention') ratified by Ireland in 1997
- Council of Europe Convention on the Protection of Architectural Heritage of Europe (the 'Granada Convention') ratified by Ireland in 1997

- International Council on Monuments and Sites (ICOMOS), advisory body to UNESCO concerning protection of sites and recommendation of World Heritage sites ratified by Ireland in 1992.

2. Receiving Environment

2.1 Location

The Blackwater or Munster Blackwater is known as *Abhainn Mhór* or Avonmore (The Great River) in Irish. Some early English maps referred to it as the Blackwater- Norden's map of Ireland 1610, for example, which was published with the state papers of Henry VIII.

The river has a total length of 168 kilometres and rises on the slopes of Knockanefune Mountain in County Kerry. Its course is influenced by a series of ridges and valleys that follow a west-east axis as it flows into County Cork, through the towns of Mallow and Fermoy. It then enters County Waterford where it continues through Lismore, before abruptly turning south at Cappoquin and exiting into the sea at Youghal Harbour.

2.2 Soils and Geology

There are two different soil types separated by the Blackwater River. To the north of the river, the principal soil type is acid brown earths (70%) associated with grey brown podzolics (15%) and gleys (15%). To the south, the principal soil type is brown podzolics (60%) associated with acid brown earths (20%) and gleys (20%). Similarly, there is a change in the bedrock at the River Blackwater. To the north the bedrock is primarily limestone, and to the south it is sandstone.

3. Scope of Works

The report assesses the impact on underwater archaeology regarding riparian and intra-riverine works associated with Fermoy. The proposed works will include the following:

- General weir repairs, strengthening & improvement works
- Construction of a new fish bypass channel on the bank of the river

The primary objective of the current project is to assess options for and then develop and design a cost effective and sustainable Project to deliver the proposed works (Fig. 1). Proposed remedial works

to the weir were put forth by Trevor Wood in the 'Fermoy Weir Conservation Engineering Preliminary report' [2020; unpublished]. The proposed conservation works comprise the following measures;

1. works to the weir upstream of Fermoy Bridge: removal of concrete apron, resetting of limestone setts on top of the random rubble fill to create a uniform crest level and uniform slope, addition of an open texture geotextile mat to prevent core material being washed out, undercut/missing stonework in the upstream and downstream heel and toe to be reset on concrete heel and toe footings, addition of rock armour on the upstream and downstream side of the weir to protect the toes of the two slopes and reduce the risk from undercurrents undermining the downstream side in the future.
2. Existing fish pass: temporary remedial works removed, section of side wall reconstructed with new limestone to match the existing, remaining side walls pointed with natural cement, any other missing stonework replaced with any out of position stonework reset. As a new bypass channel is to be constructed, this fish pass will need to be effectively decommissioned. It is intended to do this by installing stonework across the current channel to the same height of the stonework side walls, solid geotextile mat laid and fill material with limestone setts to match those of the main slope to create a smoother transition from the crest to the toe.
3. Works to the weir downstream of Fermoy Bridge: reconstructed with any of the stonework that can be relocated locally and new stonework to match the existing; concrete core pored for the new sections; injection of natural cement into the fill at the core of the wall for the remaining existing mill race weir; stonework facing pointed in natural cement and downstream face of the weir protected by adding rock armour.

The proposed works are in architectural conservation areas, while Fermoy Bridge, weir and Niall Crowley Quay walls are Recorded Protected Structures in the National Inventory of Architectural Heritage (NIAH) and also in the Fermoy Development Plan, 2009- 2015.

The UAIA will describe the existing environment directly relating to the underwater heritage in the vicinity of the proposed development and address the potential impacts of the proposed works and the mitigation measures needed to address the impacts.

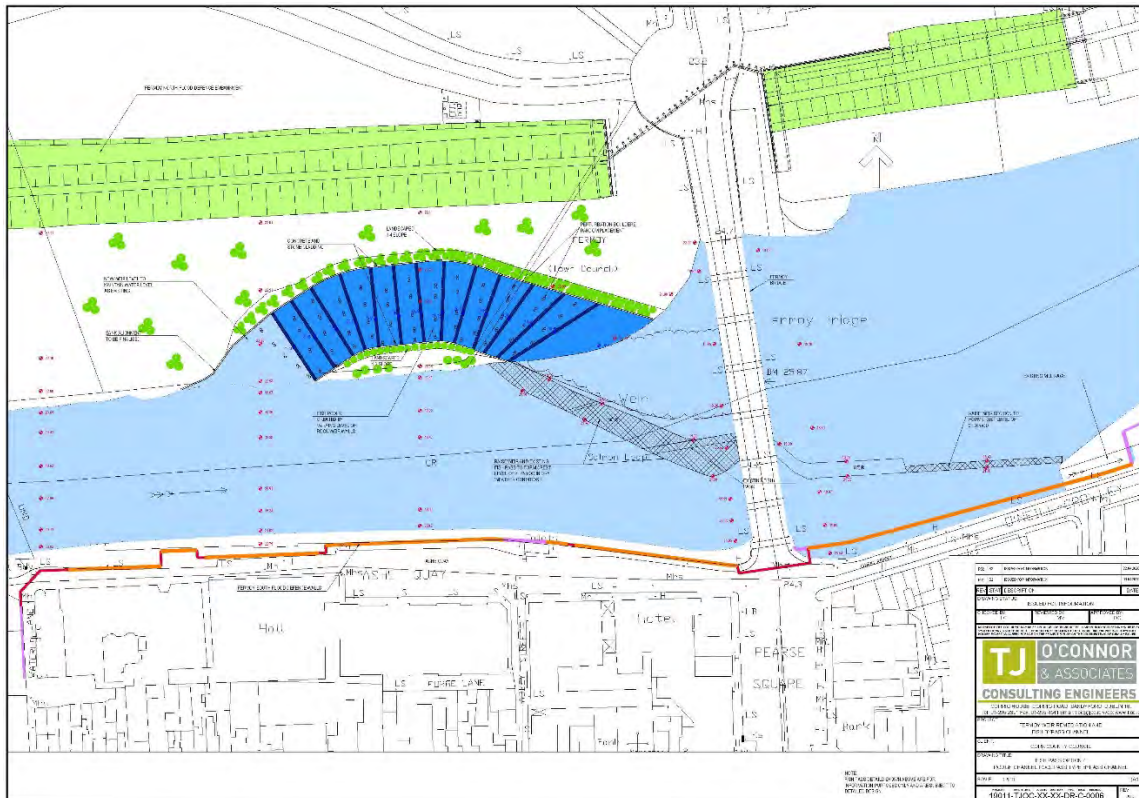


Figure 1: Fish Pass Option 4 (Fermoy Weir Remediation & Fish Bypass Channel Project- Inception Report 2019).

4. Methodology

4.1 Desktop Study

The following were consulted to complete the desktop study:

- The Record of Monuments and Places (RMP) compiled by the Archaeological Survey of Ireland comprises lists, classifications of monuments and maps of all recorded monuments with known locations and zones of archaeological significance. The monument records are accessible online from the National Monuments Section (NMS) of the Department of Arts, Heritage and Gaeltacht (DAHG) at www.archaeology.ie. These were used to establish the wider archaeological context of the site.
- OSI: Ordnance Survey Ireland historic and contemporary maps were examined to measure the changing landscape surrounding the weir.
- The Excavations Bulletin online database (www.excavations.ie) which contains summaries of all archaeological excavations in Ireland, was consulted to review archaeological investigations done previously in the area.
- Cartography: Several historic maps and charts were examined (see references below for a full list).

- Aerial Photography: A variety of low and high-altitude aerial photography was examined (see references below for full list).
- Documentary sources: Several sources were examined. For a full list of all sources examined see Bibliography below.

4.2 Wade Survey

Wade and handheld metal detection surveys were carried out on the weir, in the surrounding riverbed, and along the adjoining riverbanks.

5. Results

5.1 Historical and Archaeological Overview

Prehistoric Period

There is significant evidence for activity dating back to the Mesolithic in the Blackwater Valley. Fieldwalking in several locations in the Blackwater Valley has produced a number of microliths and other Early Mesolithic tools (O'Brien 2012, 34). A flint scatter (CO035-063----) was found c. 2km upstream of Fermoy Bridge, which may also contain Mesolithic material, although this is not certain. Flint blades and flakes were also recovered during road construction works at Rath-healy 3 on the M8 Rathcormac to Fermoy road, c. 1km downstream (*ibid.*). Abundant evidence of prehistoric occupation of the area was uncovered during works on the N8 Rathcormac/Fermoy by-pass, most at a distance of c. 900m- 1km from Fermoy Bridge. No evidence of archaeological significance was recorded in a UAIA of a section of the Blackwater River for the N8 Rathcormac/Fermoy by-pass (Dunne, 2004). However, evidence from the surrounding region highlights the importance of the Blackwater as a navigable route.

Early Medieval Period (AD 400-1169)

It is reputed that Fermoy developed from an Early Medieval monastery founded in the 7th century by St. Finnchua on the banks of the Blackwater. A Cistercian abbey of *Castrum Dei* was founded in 1170 by Donal Mór O'Brien and later became known as Mainistir Fir Muighe. There are no surface remains of the abbey, but it is locally believed to have stood between Pearse Square and Abbey St (Power *et al.*, 200).

Medieval (AD 1169-1600)

Alexander Fitzhugh, in his charter of 1290 to the religious house of St. Mary of the Bridge of Fermoy, granted the monks licence to fish in the rivers on the donor's lands adjacent to the rivers Blackwater and Awbeg (Seetman 1875, 182). The Ecclesiastical Taxation of Ireland of 1302-1309 lists a mill in the property of Priory of St. Mary the Virgin of the Bridge in Fermoy (Sweetman and Hancock 1886, 275). At the time of the dissolution of the monasteries in 1541, the Cistercians of Fermoy owned two castles, a thousand acres of land, and a mill including a weir (Pochin Mould 1991, 86). According to Power, the weir- which was constructed to power the mill- raised the water level in the traditional fording point leading to the monastery operating a ferry (Power 2009).

Post-Medieval (AD 1600-present)

In 1624, the town of Fermoy was in the hands of Sir Richard Boyle who was responsible for the construction of a wooden bridge across the Blackwater, which replaced the ferry associated with the Cistercian Abbey (Brunacardi 1985, 1-3). Designed by an engineer named Curteis the bridge cost 3500 and used 800 tons of 'choice timber' (Power 2009, 189). The bridge was swept away in the flood of 1628 and is said to have been replaced in 1687 when Robert Boyle had a thirteen-arch stone bridge constructed at a cost of £1,500 (*ibid.*, 189). Daphne Pochin Mould argues that it was built in 1689 for the much more considerable amount of 37,500 (Pochin Mould 1991, 107). However, a sketch by Thomas Dineley from 1681 shows a multi-arches bridge crossing the Blackwater at Fermoy (Fig. 2). The bridge is shown from the east, looking upstream, and to the left of the sketch there is an indication of what may have been a mill race or fish pass. There was a fishery at Fermoy mentioned in a 1638 letter from Lord Roche to the King. Lord Roche had built a weir at Fermoy and he had been sued in connection with it (Went 1964, 19). The weir was ordered destroyed, but it is possible that the mill race or fish pass in Dineley's sketch may be a remnant of Lord Roche's fishery. The bridge in Dineley's sketch may represent a relatively temporary structure in place prior to the construction of the stone arch bridge.



Figure 2: 'Formoy Bridge over the Black-water', Thomas Dineley (1681).

Lewis (1837) wrote that, “the town is finely situated on the opposite banks of the river Blackwater, over which is handsome stone bridge of 13 arches, widened about 40 years since by the late Mr. Anderson” (Lewis 1837, 623). John Anderson was a Scotsman who had purchased the Fermoy estate in 1791, after having established himself as an enterprising trader in Cork City for the previous eleven years and immediately set about redeveloping the town. He laid out the whole town and the big corn mills downstream from the bridge; and for the bridge itself, he had it widened and added six arches in 1799 (Pochin Mould, 108; O’Keefe and Simington 1991, 169-170).

A sketch of Fermoy Bridge by Richard England in 1816 (Fig. 3) shows the version of the bridge as expanded by Anderson in 1799. The weir is clearly shown in this sketch. Interestingly, the southern portion of the weir, which runs almost east-west, appears to be in the same position as the corresponding portion of the upstanding weir today. This is the same section where the breach has occurred. However, the northern portion of the weir runs roughly N-S at the downstream side of the bridge. This is opposed to running on a NW-SE curve on the upstream side of the bridge, as it does today. It is possible that this was an artistic error, however, as the only known photograph of the earlier bridge shows the weir passing underneath the bridge, as it does today (Plate 1).

A parish register from this period notes that the “...mouldering walls of the Abbey, the church and the graveyard attached to the latter, were situated close to the river, on the south bank west of the

bridge” (Power 2009, 44). These were completely levelled, and the stones used in the building of the new town, which included the construction of quay walls, a mill, a mill race, and a weir.

Townsend’s Statistical Survey of the County of Cork published in 1810 notes the difficulty in constructing the weir for the flour mill:

“This was an undertaking of considerable risk and difficulty, by reason of the great floods in the Blackwater... A broad and deep mill race from the river, immediately below the bridge, was however drawn, notwithstanding this risk and a flour mill built.” (Townsend 1810, 491).

The mill operated by Mr. D. Reid was opened in 1802 and by 1810 was producing 12 to 15,000 barrels of wheat per annum, selling at three shillings per hundred weight dearer than that of any other mill in the neighbourhood.

Townsend also noted the presence of a paper mill in Fermoy (*ibid.*, 468). The mill which was located to the east of the flour mill fed off of the same mill race appears on the 1st edition Ordnance Survey map (1844) but had been demolished by the time the 2nd edition map (1905) was produced.

The present Fermoy Bridge was designed by A.O. Lyons and constructed in 1864/65 by Joshua Hargreave and funded by the County Grand Jury (Plate 4). It is constructed of well-dressed limestone ashlar masonry with rounded cutwaters and contains seven wide segmental arches varying between 11.58m and 14.63m. The 14.5m wide bridge is a designated archaeological monument (CO035-073). It is also a registered in Fermoy Town Council’s Record of Protected Structures (No. 199).

The weir at Fermoy Bridge was constructed as a component of the nearby mill complex in order to increase the waterpower (Plate 2). It stretches across the river diagonally in a NW-SE orientation encompassing the two southern most arches of the bridge which supply water to the mill race. A fish-pass is incorporated into the weir extending through the third (from south) arch (Plate 3). The mill race runs parallel to O’Neil Crowley Quay (formerly Artillery Quay) and still contains the sluice gates.



Figure 3: Fermoy Bridge, 1816- showing the weir and bridge prior to the replacement of the bridge in 1864/65 (NLI).



Plate 1 Photograph of Fermoy's 13-arch stone bridge, which was demolished to make way for the new bridge in 1864 (Niall Brunicardi Collection).



Plate 2: Artillery Quay, Fermoy, Co. Cork by R. French, c. 1865-1914 (The Lawrence Photograph Collection: NLI).



Plate 3: Salmon Leap, Fermoy, Co. Cork by R. French, c. 1865-1915 (The Lawrence Photograph Collection: NLI).



Plate 4: General View, Fermoy, Co. Cork by R. French, c. 1865-1914- showing the weir and the bridge constructed in 1864/65 (The Lawrence Photograph Collection: NLI).

5.2 Cartographic Information

In 1598, Ortelius's map of Ireland marked 'Armoye' along the River Blackwater with a structure, which could represent a town or the Cistercian Abbey (Fig. 4). Fermoy, both the town specifically and the larger region, was frequently marked as 'Armoy' on early maps, all the way through to the 18th century, when Bernard Scalé marked the region as 'Armoy or Fermoy' (1776). The Down Survey of 1656-1658, however, denoted the town as 'Fermoy' and marked the banks of the river with connected circles to denote the ferry crossing (Fig. 5).

By 1732, Moll depicts Fermoy with a bridge instead of a ferry across the river (Fig. 6). Taylor and Skinner's 1777 *Road Maps of Ireland* shows the bridge and adjoining road layout in Fermoy in greater detail (Fig. 7). A road is shown running roughly parallel to the Blackwater along the northern bank, while another runs east along the southern bank from the bridge.

The first appearance of the weir was thin line drawn lightly through the river underneath Fermoy bridge on the 1st edition OS 6-inch map (1841-2; Fig. 8). Notably, the line of the weir passes under the bridge, following the same line as it does today. At the south-eastern end of the weir, the river feeds a mill race which leads towards a flour mill and, further east, a paper mill. On the bank north-west of

the bridge, where the proposed fish bypass channel would be situated, is a greenfield associated with Fermoy House.

The 2nd edition OS 25-inch map shows no development in the greenfield (1931; Fig. 9). It does, however, show the weir in greater detail. A ‘fish pass’ is marked on the map midway along the weir to the west of the bridge. The weir is also distinctly narrower downstream of the bridge. The flour mill is labelled as a ‘corn mill’ and the paper mill has been replaced by ‘Island House’. A boathouse is recorded on the 2nd edition OS map of 1905 on Ashe Quay formerly West Quay. This boat-house and nearby smithy has long since disappeared.

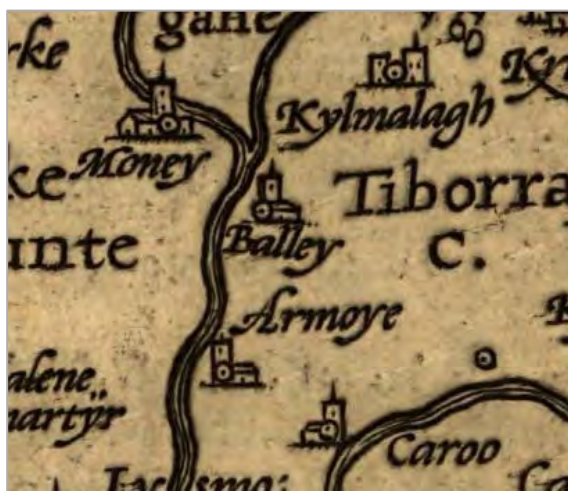


Figure 4: (left) Extract from A. Oretlius' 'Hiberniae, Britannicae Insulae nova descriptio' 1598 (Library of Congress).



Figure 5: (right) Extract from Sir W. Petty's 'The Down Survey of Ireland: The County of Corke' 1656-58 (Library of Trinity College, Dublin).



Figure 6: (left) Extract from H. Moll's 'A pocket companion of Ireland', 1732.



Figure 7: (right) Extract of Taylor and Skinner's Road Maps of Ireland- Map 122, 1777.

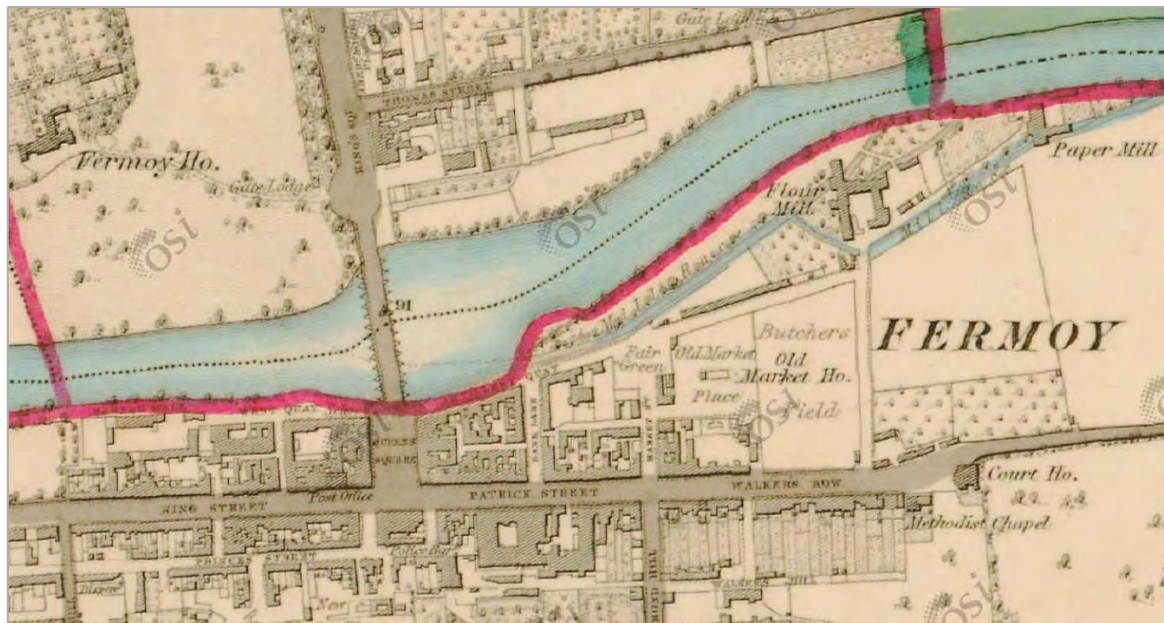


Figure 8: Extract of 1st edition OSI map- sheet 35, 1844.

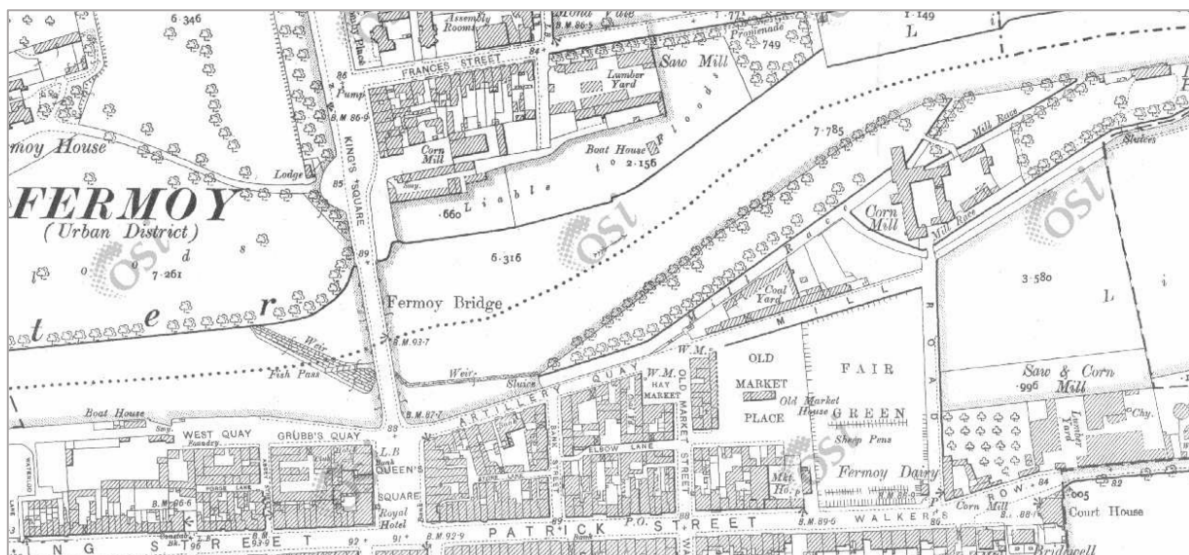


Figure 9: Extract of 2nd edition OSI map- sheet 35, 1905.

5.3 Recorded Monuments (RMPs and SMRs) and Protected Structures (NIAH)

There are eight RMPs and SMRs within a 500m radius of Fermoy Weir (Appendix A). The weir itself falls within the zones of notification for both the historic town of Fermoy (CO035-107) and Fermoy Bridge (CO035-073) (Fig. 10). Additionally, there are more than one hundred thirty Recorded Protected Structures listed on the National Inventory of Architectural Heritage (NIAH) (Appendix B). Of particular relevance to the proposed works is the listing of Fermoy Bridge (NIAH 20821054). O'Neill-Crowley Quay wall is also listed (NIAH 20820002) as a protected structure.

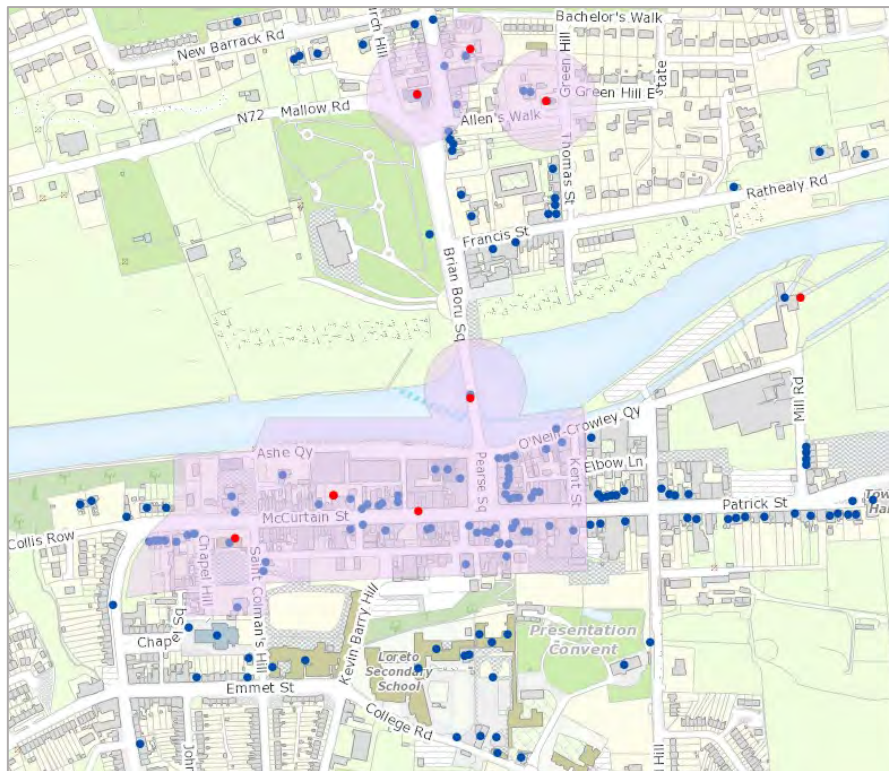


Figure 10: Map of RMPs and SMRs (red) with zones of notification (pink) and NIAH Recorded Protected Structures (blue) within 500m of Fermoy Weir (NMS- Historic Environment Viewer).

Fermoy Bridge is a designated archaeological monument and a Recorded Protected Structure by the NIAH with a regional rating with archaeological, architectural, technical, and artistic categories of special interest.

The NIAH records Fermoy Bridge as follows:

Seven-arch limestone road bridge over River Blackwater, dated 1864 and 1865, and built at site of seventeenth-century bridges and of medieval ferry. Coursed rock-faced ashlar piers and spandrels, snecked to parapets having cut-stone copings, channelled ashlar voussoirs to segmental arches, with cut limestone string course between arches and parapets. Parapets to road having dressed snecked facing. U-cutwaters to piers, with carved limestone caps and imposts, latter continuing as course to underside of arches and to landward abutments, and rock-faced ashlar below. Carved limestone plaque to west parapet wall. Southern three arches accommodate mill race, bounded to north by weir. Rubble limestone approach wall to north side of east parapet marking line of approach to earlier bridge. Wall contains inserted keystone with date 1718, and sandstone overflow arch.

This substantial road bridge is the latest structure at this site, the earliest having been erected in the late sixteenth century. The bridge was commissioned by John Anderson, founder of Fermoy and was

executed by Joshua Hargreave to a design by A. Oliver Lyons. It carries the main Dublin to Cork road and in the past, Fermoy was also on one of the main mail coach routes. Its structure of large blocks in rock-faced limestone gives it an imposing and solid appearance. Evidence of fine stone crafting can be seen in these blocks and in the dressed coping and cutwaters (www.buildingsofireland.ie).

The quay wall is a recorded protected structure that was built around 1820. It is constructed of limestone rubble with dressed coping and incorporates a blocked-up round-headed doorway which provided access to the sluice gate. The weir and quay wall are included in Fermoy Town Council's Record of Protected Structures (No. 02). They are also recorded as protected structures in the NIAH Ref. Nos. 2080002 and given a regional rating of architectural and technical categories of special interest (www.buildingsofireland.ie).

The mill complex, (Reid's Mill), built in 1802 is a recorded protected archaeological monument, CO035-025 and is also a protected structure, Reg. No. 20821055, that the NIAH have given a regional rating with architectural, historical, and technical categories of special interest. It is now in use as an office block. The NIAH records the mill complex as follows:

Detached L-plan five-storey former water mill, built 1802, extended in 18040s, reduced in size following fire in 1960s, and now in use as offices, having nine-bay north-south block, with multiple-bay east-west block at right angles. Four and five-bay inner elevations, and two-bay gables. Recent single-storey lean-to extensions to south elevation and to south-west corner and having fire escape to east gable. Flat roofs with slate-clad veneer to gables and to south elevation. Rubble sandstone walls, with dressed quoins. Square-headed openings with dressed stone jambs and voussoirs, having concrete sills and recent render reveals, with replacement uPVC windows. Recent square-headed openings to north gable with render surround. Round-headed arches in west elevation of north-south block matched by two in east elevation, one in east gable, and marking millraces, arches having cut sandstone voussoirs and jambs, and northern race retaining cast-iron millwheel lacking paddles. Millrace, fed by River Blackwater, has rubble stone walls, with two-arch bridge to front of arches of west elevation.

The sandstone masonry of this mill is characteristic of such buildings in North Cork. The invention of the vertical water wheel in the late eighteenth century, combined with new forms of gearing which enabled the power to be transmitted to several sets of millstones, encouraged the building of large-scale mills at this time. It was built by Mr D. Reid in 1802 and was part of a largely demolished flour mill complex, one of the largest in Ireland. The retention of the waterwheel and mill stream make this site a notable part of the heritage of Fermoy (www.buildingsofireland.ie).

5.4 Topographical Files

The Topographical files list no record for the townlands of Carrignagroghera, Grange East or Rath-Healy. Two entries are recorded for Fermoy townland;

1. Wk147/ RIA 1877:109 – Iron rotary key. It was registered twice.

“Iron key with wards on each side of barrel. Plain oval handle. Length four inches and three quarters. Found under one of the piers of the old bridge of Fermoy which was taken down in 1864. Presented by Sir Jephson Norreys.”

“Key. Iron_much rusted_wards at each side of shank, latter piped_bow oval. Length 4 7/8 inches_Greater diameter of bow 1 3/4 inch Wt. [] Found under one of the piers of the old Bridge of Fermoy_given by Mr. Edward Galwey to Sir D. Jephson [Norrey] and by him presented to the Academy Museum Octr. Antiq. Com. Min. 26th Novr.”

2. RIA1906:1 - Ceramic vase, Ó Ríordáin and Waddell type Bipartite

“Sepulchral Vessel Sepulchral Vessel of the food vessel type_restored_with four bosses encircling shoulder_found containing burnt bones, at Fermoy, Co. Cork. Presented by William [Wiscon]-Becher Fermoy, Co. Cork [sketch] ht. 4 1/2" di of shoulder 6 5/8" di of mouth 5 5/8" di of base 2 1/4" See Journ. Cork Hist & Arch. Society 2nd series vol XI no.68, p.187”

5.5 Previous Archaeological Work

There are ten previous archaeological investigations recorded in the Excavations Bulletin within a 500m radius of Fermoy Weir (Appendix 3). One of the listed investigations was a dive survey further downstream in the Blackwater (2004:0327 and 2004:0263). No archaeological features or artefacts were identified during the dive survey.

Another underwater archaeological impact assessment was undertaken in 2011 in association with the Munster Blackwater River-Fermoy South Drainage Scheme, which included an assessment of the weir, as it had been proposed to construct a new fish-pass on the weir as part of the project (O'Donoghue, 2011). The dive survey for the assessment recorded a series of irregularly spaced upright timbers on the riverbed. These timbers were found 2-3m to the east and west of the bridge and comprised vertically disposed rounded post-like and larger, squared baulks. The timbers were believed to represent the remains of scaffolding used in the construction of the current stone bridge

built in 1864 or an earlier structure- possible part of a timber bridge or an earlier timber weir or fish trap.

The same assessment recorded that two stone object were previously recovered from the vicinity by local diver, Timothy Carey. The objects were a possible headstone and an abraded conical stone that may have been a tomb final.

5.6 Underwater Survey

The underwater survey of Fermoy Weir took place in May 2020 during optimum weather conditions. As a result of the combination of weeks of dry weather and the damage to the weir, the entirety of the weir was above water and the river both upstream and downstream was relatively shallow.

The riverbed upstream of the weir was silty with frequent stone inclusions averaging 0.25m x 0.12m x 0.16m (Plate 5). Downstream of the weir, the riverbed is composed of medium to large stones north of the fish pass. Under the bridge, the riverbed is sandy with fewer stone inclusions and is generally shallower. East of the bridge, on the downstream side of the weir, there are occasional collapsed stones from the weir visible up to 2m out from the weir, and the riverbed drops off sharply in many places.

A series of irregularly spaced upright timbers were recorded in the course of a dive investigation by Mizen Archaeology in 2010. The timbers were found 2-3m to the east and west of the bridge. They comprise vertically disposed rounded post like timbers and larger squared baulks. A dendrochronological analysis of one of the timbers was undertaken for this current assessment. The sample had raw ring-width PISY data of 98 years, was grown in Scandinavia and was felled after AD 1751. Unfortunately, no evidence of bark, sapwood or the waney edge was present, therefore it is impossible to quantify how many years of growth have been lost. But it can at least be determined that it postdates the ferry crossing, the wooden bridge of the 1620's and the construction of the stone bridge in 1687. It may be associated with the 1799 bridge widening works or with the construction of the present bridge in 1864.

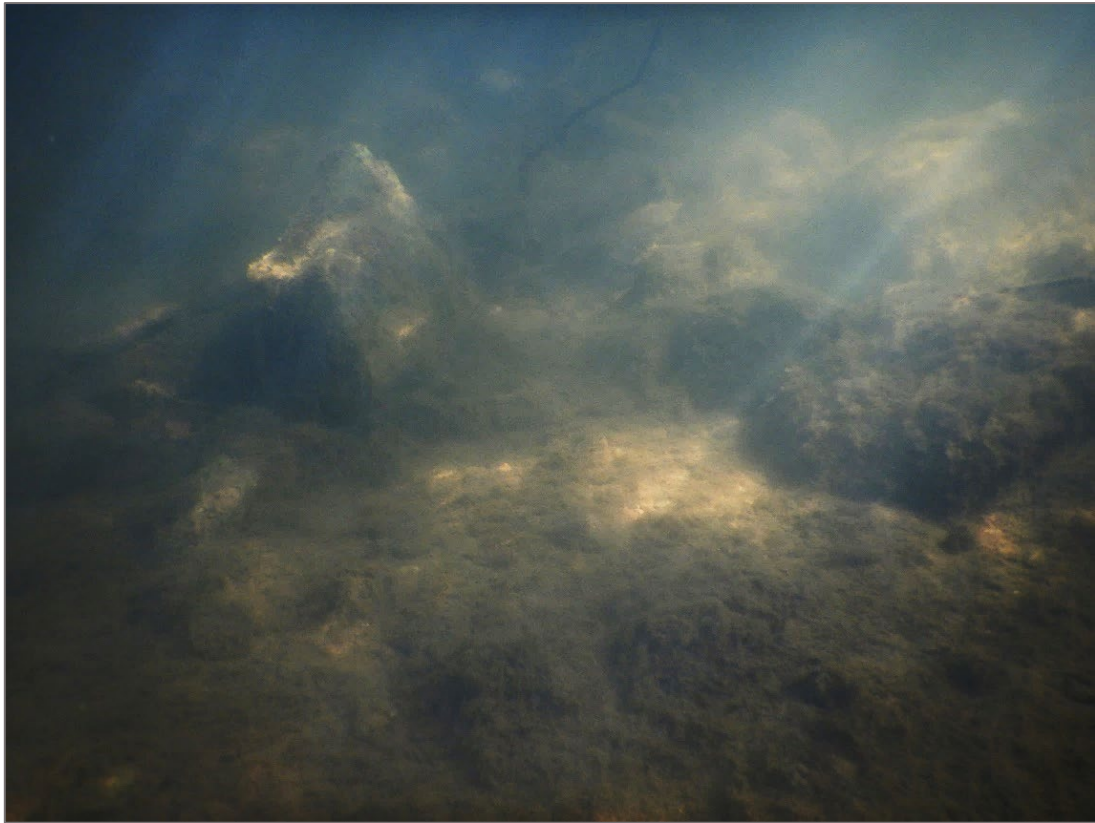


Plate 5: Riverbed upstream of weir.

Weir

The north-western limits of the weir are connected to an earthen riverbank. Upstream of the weir a small section of stone revetment wall remains in the bank (Plate 6), while downstream a stone revetment wall survives in poor condition for c. 19m. At the opposite terminal, at the SE, the weir connects to a headrace that formerly served a substantial mill complex.

The weir is an interesting structure displaying three distinct forms of construction.

- (1) The north-western part comprises a c. 74m structure extending diagonally across the river from the riverbank to Kent Bridge.
- (2) At the bridge, the weir is built up against one of the piers and forms a semi-circular shape in plan.
- (3) The south-eastern part (east of the bridge) leading to the mill race has a vertical upstream face and stepped downstream face.



Plate 6 North bank with section of quay wall visible, face of weir to far right. Taken from south.

North-western section (upstream of bridge)

This part of the weir is triangular in profile having a vertical upstream elevation of up to 1m in height above the riverbed and a broad sloping glacis. Nothing of the original upstream face is visible, excepting a small section on either side of the fish pass. It has largely been replaced by hessian concrete bags (Plate 7). Limestone rubble which appears to have originated from the weir is strewn on the riverbed at the base of the upstream elevation.

The limestone crest and glacis has been covered in concrete in recent times, though it is partially exposed where the concrete has eroded to the south of the fish pass. It is composed of vertically laid sub-rectangular stones which would have been sourced from the surrounding riverbed. The stones measure on average 0.22m x 0.10m x 0.28m deep and display significant erosion from flowing water. (Plate 8 & 9).

A thin horizontal timber fixed with metal stakes is visible among the stones in the eroded section (Plate 10). This was likely used during the construction to prevent stone slippage. Other timber uprights were noted beneath the concrete to the northwest of the fish pass but were barely discernible (Plate 11 & 12).

The riverbed is paved between the toe of the weir and north riverbank (Plate 13). It is constructed of vertically laid roughly hewn setts similar to those forming the glacis. The paving is coursed but displays different laying directions which are defined by thin timbers fixed with metal stakes (Plate 14 and 15). A distinct kerbing is visible to the east, marking the edge of the paved area.



Plate 7 Upstream face of western portion of weir, taken from south-west.



Plate 8 Exposed stone face of weir slope, located south of fish pass. Taken from east.



Plate 9 Concrete-covered slope of fish pass east of the bridge, showing paved stone area to the left. Taken from north-east.



Plate 10 Timber with stake, placed with the exposed rock slope of the weir, to the south of the fish pass, taken from west.



Plate 11 Timber connecting of the fish pass (right) and base of the weir (left). Taken from west.



Plate 12 Timber baulk underneath concrete of weir slope, with stones visible behind (left) of the timber and upright timber (right). Taken from east.



Plate 13 Aerial photograph showing the western extreme of the pier, with paved area shown in the acute angle formed by the weir and northern bank.



Plate 14 Paved area at base of weir, with quay wall in background behind vegetation. Taken from south.



Plate 15 Timber separating end of weir and paving stones, taken from north-east.

Under the bridge

Underneath Kent Bridge, the weir is built up against one of the piers which provides reinforcement. A wall of large, roughly shaped limestone blocks- averaging c. 1.1m x 0.40m x 0.50m abut the pier, with the upper two courses being visible (Plates 16 & 17). The glacis is fully exposed here - vertically laid sub-rectangular stones forming a semi-circular shape in plan (Plate 18).

The present bridge was constructed in the 1860s and, as the weir is shaped around the pier is likely that this portion of the weir was constructed at the same time.

The weir was originally constructed in 1799, as part of the industrial development of the town and the bridge, at that time, was a stone 13-arch structure. This portion of the weir, and possibly upstream of the bridge was reconstructed at the time of the bridge replacement in 1854/5.



Plate 16 Original rubble stone slope of weir capped by two courses of large cut limestone, ending at the end of the pier of Fermoy Bridge. Taken from south.



Plate 17 Original rubble limestone slope with two/three courses of large limestone cut stones overtop. Taken from south.

South-eastern Section

Immediately east of Kent bridge the design of the weir is in keeping with the north-western portion of the weir. It has a steep upstream face and the glacis is covered by concrete. Limestone rubble has been piled against the upstream face to a height of c. 2.5m high above the riverbed.

c. 34m to the east of the bridge the weir is breached for 6m in length and 1m in height (Plates 18 & 19). The collapsed section also marks the change in construction style.

To the east of the breach the weir has an upstream vertical face constructed of four rough courses of sandstone 1.2m above the riverbed, the average stone size being 0.41m high x 0.58m wide x 0.57m deep. A top course composed of similarly sized limestone sits c.50cm back from edge of the upstream face. A concrete coping has been added directly atop the limestone. It measures on average 0.60m high x 1.8m wide, but has been swept away in sections, especially those nearest the breaches (Plate 20).

The downstream slope of the weir is composed of four courses of stepped limestone blocks (Plate 21). The rubble core fill is visible in places (Plate 22). At the base of the stepped slope is a concrete apron which extends outwards for 2m.

The weir is severely damaged at the eastern end and most of the fabric of the weir has washed away, but some rubble stone and concrete are visible in the surrounding riverbed. A small number of larger roughly hewn stones were also identified on the riverbed, though there were significantly less than would have formed the totality of the breached section.

It appears that this section of the weir is of the original 1799 construction.



Plate 18 Eastern end of weir, before breached area. Taken from north.



Plate 19 Eastern end of weir, east of bridge. Note difference in construction after above. Taken from north east.



Plate 20 View from top of western end of weir, showing shaped concrete coping set back from stone courses. Taken from east.



Plate 21 Stepped courses of stone on north face of western end of weir. Taken from west.



Plate 22 Random rubble fill visible at small breach. Taken from east.

Fish pass

A pool-and-transverse fish pass is incorporated into the north-western part of the weir. Set at a 30° angle it measures 27m in length and c. 2.7m in width. The side walls are constructed of coursed, squared limestone blocks (avg. size 1.19m long x 0.43m high x 0.70m deep) and topped with wedge limestone coping on the south side wall and a concrete coping on the north side wall. The base is laid with slightly smaller cut stones (avg. size 0.77m long x 0.25m wide) (Plate 23). The fish pass is in poor repair with multiple areas of collapse, particularly at the western end and along the northern side wall.

Remedial works have been carried out on the fish pass and are visible at its eastern end (Plate 24), where an extension of timber and metal forms the final 9.9m of the fish pass.



Plate 23 Aerial of fish pass, showing paving stones at the base.



Plate 24 Aerial view of remedial works at eastern end of fish pass.



Western Extent of Wall



Cobbling



Breach in wier



Wall collapse



Fish Pass

In-situ stonework



In-situ stonework under bridge



In-situ stonework



Eastern extent of existing wier

Wall collapse



6. Impacts

1. Proposed works to weir upstream of bridge: removal of concrete apron, resetting of limestone setts on top of the random rubble fill to create a uniform crest level and uniform slope, addition of an open texture geotextile mat to prevent core material being washed out, undercut/missing stonework in the upstream and downstream heel and toe to be reset on concrete heel and toe footings, addition of rock armour on the upstream and downstream side of the weir to protect the toes of the two slopes and reduce the risk from undercurrents undermining the downstream side (Fig. 2).

Likely Impact: The proposed works will restore the character/appearance of the weir will have a significant positive impact on the underwater cultural heritage of the area.

2. Proposed works to existing fish pass: temporary remedial works removed, section of side wall reconstructed with new limestone to match the existing, remaining side walls pointed with natural cement, any other missing stonework replaced with any out of position stonework reset. As a new bypass channel is to be constructed, this fish pass will need to be effectively decommissioned. It is intended to do this by installing stonework across the current channel to the same height of the stonework side walls, solid geotextile mat laid and fill material with limestone setts to match those of the main crump weir slope to create a smoother transition from the crest to the toe.

Likely Impact: The removal of the ad-hoc modern repairs to the fish pass will help restore the character/appearance of the weir. Although it will not be restored to its original design the preservation of its sidewalls will retain a vestige of its original form. The proposed works will have a moderate positive impact on the underwater cultural heritage of the area.

3. Proposed works to weir upstream of bridge: reconstructed with any of the stonework that can be relocated locally and new stonework to match the existing; concrete core pored for the new sections; injection of natural cement into the fill at the core of the wall for the remaining existing mill race weir; stonework facing pointed in natural cement and downstream face of the weir protected by adding rock armour.

Likely Impact: The reconstruction of the damaged weir would make a positive contribution to the underwater cultural heritage of the area. It would also alleviate potential damage to the damage to

the 19th bridge. These works will have a significant positive impact on the underwater cultural heritage of the area.

The construction works have the potential to negatively impact on previously unrecorded archaeological remains which may be buried in the riverbed.

3. Proposed installation of new rock amour fish pass

It is proposed to construct a new rock amour fish pass adjacent to the weir on the northern bank.

Likely Impacts: The addition of a new fish pass on the adjacent riverbank will have a slight negative impact of the setting of the weir.

The remains of the drystone revetment wall on the northern bank will be demolished.

Evidence of human settlement along the Blackwater and its tributaries date back to the Late Mesolithic Period some 7000 years ago. Although no archaeological remains were evident on the riverbank during the assessment there is a potential that previously unrecorded sub-surface archaeological features and artefacts are preserved beneath the bank.

7. Mitigation Measures

There is a significant possibility of encountering and impacting previously unknown and unrecorded archaeological features and artefacts during ground disturbance works given its cultural context within the historic town/monastery and the use of the navigable Blackwater River from prehistory to the present day. All excavation works along the banks and within the river should be archaeologically monitored by an experienced underwater archaeologist under licence from the National Monuments Service.

Where possible, the damaged sections of the historic weir should be rebuilt with the original construction materials and bonded with appropriate hydraulic lime mortar suitable for underwater. All historic weir repairs and reconstructs should be undertaken by those with a proven track record in historic building works. All proposed new sections of the weir should be designed and constructed to sensitively match the existing character of the protected structures.

All mitigation measures are recommendations only. The ultimate decision rests with the National Monument Service of the Department of Culture, Heritage, and the Gaeltacht in collaboration with the National Museum of Ireland.

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‘Map 122- Road from Dublin to Cork’ *Road Maps of Ireland*. By Taylor and Skinner, 1777.

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Irish Placenames website: www.logainm.ie

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National Inventory of Architectural Heritage (NIAH): <http://www.buildingsofireland.ie/niah/>

National Monuments Service: www.archaeology.ie

9. Appendices

9.1 RMPs and SMRs

Within a 500m radius of the proposed works area

Number	Type	Location	Description
CO035-073----	Bridge	581142 598609	Road bridge (Wth c. 13.2m; long axis N-S) over River Blackwater, in Fermoy. Rusticated ashlar limestone construction. Seven large wide segmental arches, well-dressed chamfered-edged voussoirs; string course over arches links piered abutments at either end. Two southern arches span weir feeding mill race to Corn Mill (15214); overflow arch on N bank of river. Piers of ashlar limestone with rock-faced finish; rounded cutwaters. Internal face of parapet wall (roadside) of random ashlar limestone; stone plaque reads "Rebuilt/ 1864 and 1865/ XXVIII and XXIX Victoria/ A. Oliver Lyons Engineer/ Joshua Hargrave Contractor". Remains of an earlier approach road from N integrated into E side of present road leading to bridge; random-rubble construction of earlier road visible in E side wall of road causeway; top of sandstone arch also visible, inserted key stone dated "1718" in wall. Earl of Cork built wooden bridge here prior to 1626, replacing a ferry associated with the Cistercian Abbey (14384), designed by Curteis (Brunacardi 1985, 1-3). Bridge washed away in 1628 (O'Keeffe and Simington 1991, 169-70); replaced by 1687 with stone bridge with 13 semicircular arches (see Brunacardi 1985, 6-7 for illustration). Fortifications were constructed at bridge by Williamite Army in 1690 (Kerrigan 19880, 15). Bridge widened by Anderson in 1799 by adding 6 wide-spanning arches to W side; demolished in 1864 and replaced by present bridge (O'Keeffe and Simington <i>ibid.</i>).
CO035-107----	Historic town		On both sides of Blackwater River (see 14806), on main Cork-Dublin road. Not listed as one of Cork's market towns in 1299 (O'Brien 1993, 94); site then occupied by Cistercian abbey (14384). No evidence of town here until 17 th century when Richard Boyle established an English settlement which in 1637 consisted of about thirty households (MacCarthy-Morrogh 1986, 258). In 1685, Cox (Johnson 1902, 356) described it as 'a small market town' and in mid-18 th century, Smith (1750, vol. 1, 348) called it 'a small village'. Purchased by John Anderson in 1791 and flourished under his patronage in early 19 th

			century (Brunicardi 1980; Zajac 1995, 37); in 1837 consisted of 'a spacious square of handsome houses...and of several principal streets' (Lewis 1837, vol. 1, 623).
CO035-024001-	Graveyard	580984 598494	Lane (2003, 41) reported the discovery of 'a small number of disarticulated human bones in the redeposited sandy subsoil' during archaeological monitoring at nos. 8-10 McCurtain St., Fermoy and suggests that they may represent burials from a graveyard associated with the 12 th -century Cistercian abbey (vol. 4, 14384) some distance to the W.
CO035-024----	Religious house- Cistercian monks	580984 598494	On S bank of Blackwater River, within present town of Fermoy. Cistercian monastery located, according to Abbott (1928, 16), on S bank of Blackwater River 'west of bridge'. Locally believed to have stood between Pearse Square and Abbey Street. No visible surface trace survives. Founded in 1170 by Donal Mor O'Brien (Stalley 1987, 244); in 1227 was the principal instigator in the Mellifont conspiracy (Gwynn and Hadcock 1988, 132). Dissolved in 1539-41, 'when most of its landed possessions were said to be waste' (Stalley <i>ibid.</i>). Later used as a parish church, when described as 'a mean Gothic building' (<i>ibid.</i>) Finally demolished in 1804 and materials used to construct present town; pointed stone arch incorporated into property boundary on N side of McCurtain Street, may be part of abbey (Lennon 1987, 1); font, thought to be from abbey, now in Fermoy C of I church (14704). (Zajac et al. 1995, 38)
CO035-103----	School	580869 598444	In Fermoy. Rectangular structure indicated on 1842 OS 6-inch map named 'National School'. Free-standing rectangular two-storey structure with large extension to rear; gable-ended with chimneys atop gables. Entrance front (N) of 5 bays, central porch entrance, pointed sash windows with switch-line tracery. Rear elevation has similar pointed 1 st floor windows with rectangular sash windows in ground floor. Lower 2-storey addition to rear partially blocking 1 st -floor window on rear elevation of main building. Used as CYMS hall. Yard to rear.
CO035-025----	Mill- corn	5811530 598725	On S bank of River Blackwater, at E end of Fermoy. Ruins of large mill complex comprising of 3- and 5-storey buildings arranged around a yard. Complex partly destroyed by fire (FFIAS, 15) and subsequently rebuilt. Millrace taken from river by weir just W of Fermoy Bridge (14806); part of millrace diverted to feed Paper Mill (no longer survives) to E. L-shaped 5-storey corn mill (long

			<p>axis N-S; leg on S end of E side) on NW side of complex; stone-arched window opes, upper opes repaired with brick arches; interior empty shell. Wheel-pit inside W end of N wall, contains poncelot waterwheel (diam. c. 6.5m; Wth 1.4m): cast-iron axle; three rim-segments; cast-iron arms; curving wrought iron 'starts' with remains of wooden paddles. Wheel powered pit-wheel which in turn powered line shafts of original mill and subsequently line shaft into addition to N. Mill extended to N by 6-bay 5-storey addition (shown on 1842 OS 6-inch map): stone-arched window opes, upper arches repaired with brick, probably at same time as those on earlier mill. Waterwheel housed in enclosed wheel-pit within S end of extension, adjacent to wheel-pit of original mill. Contains poncelot suspension waterwheel (diam. 8m; Wth 2.4m): cast-iron axle; four rim segments; cast-iron arms; curved wrought-iron starts with remains of wooden paddles. Pinion wheel transfers power to mill. Much of ground-floor line shafts remain in both parts of mill. Three-storey square grain-drying kiln (int.: 6.25m E-W; 6.35m N-S) in NE corner of complex. This has pyramidal slate roof with central roof vent and houses an early 20th-century vertical grain-drying kiln, with a brick furnace in NE corner. East range of complex composed of offices and stores with 3-storey residential house at S end. Built by Mr D. Reid in 1802, it was one of largest corn mills in country, manufacturing 12-15,000 barrels of flour annually (Bunyan 1980, 16; Bielenberg 1991, 43). Most of complex demolished subsequent to site inspection and one waterwheel removed; corn mill in NW corner has been rebuilt as office block.</p>
CO035-060----	Church	581234 598955	<p>In Fermoy. Small rectangular church (long axis E-W) lit by three pointed windows in s wall with Y-tracery. Shallow chancel to W. Squat 2-storey pinnacle and embattled tower added to E with pointed door ope in S w all; date plaque over door read 'Presbyterian church 1839'. Refurbished 1998.</p>
CO035-102----	School	581144 599015	<p>Single-storey school in Fermoy; indicated on 1842 OS 6-inch map as rectangular structure, named 'Infant School'. Entrance front (W) of 4 bays, off-centre porch entrance with limestone plaque reads 'A.D. 1836'; large rectangular window opes with modern frames. Modern addition to rear.</p>

CO035-021----	Church	581082 598959	<p>In Fermoy, in commanding position on N side of Blackwater River. C of I parish church of Fermoy, known as Christ Church. Built in 1802 on new site to the design of A. Hargrave, and consecrated in 1809 (Brunicardi 1984, 4-6). Built of random-rubble dark stone with lightly coloured stone detail. Wide rectangular nave (long axis E-W) with tower at W end and shallow apse at E end roofed with hipped continuation of main roof. Triple-light round headed E-window of limestone. Large round headed window in side walls of nave have limestone surrounds; at W end of side walls is blind rectangular window-like niche with oval niche overhead, both outlined in light stone; similar features from sides of apse. Tall 2-storey tower at W end topped by spire; original spire removed in 1820s and replaced sometime later with the present one. Tall roundheaded door in S wall of tower is main entrance. Access to interior not gained. Mortar, or water stoup (H 10in; diam. 11in; D 6in) discovered in nearby garden in early 20th century, now in church; this has four carved faces, one damaged, set between vertical rolls (see Zajac et al. 1995, 38-9, plate 4); described by Day as a 13th/14th century mortar (Abbot 1928, 48); according to local tradition, came from nearby Cistercian abbey (14384).</p>
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9.2 NIAH

Within 500m of the proposed works area

Reg. No.	Date	Type/Name	Location
20821054	1860-1870	Bridge	181189, 98556
20821053	1810-1830	Fermoy House	181142, 98744
20821022	1800-1830	Christ Church	181127, 98906
20821051	1800-1840	House	181215, 98726
20821052	1800-1840	House	181242, 98735
20821046	1910-1930	House	181286, 98820
20821047	1860-1880	House	181289, 98786
20821048	1860-1880	House	181288, 98778
20821050	1820-1860	House	181290, 98767
20821049	1820-1860	House	181281, 98767
20821045	1840-1860	Abbeyville House	181191, 98764
20821044	1840-1860	House	181179, 98790
20821035	1820-1860	House	181169, 98842
20821034	1820-1860	House	181169, 98849
20821033	1820-1860	House	181166, 98854
20821032	1820-1860	House	181164, 98864
20821030	1835-1840	Church	181279, 98900
20821029	1895-1900	House	181260, 98910
20821028	1895-1900	House	181252, 98912
20821026	1800-1840	House	181174, 98895
20821023	1835-1840	School	181184, 98952
20821038	1840-1860	Entrance gate	181498, 98799
20820002	1800-1840	Quay wall	181290, 98516
20821055	1800-1850	Mill- water	181558, 98669
20820023	1800-1840	House	181178, 98458
20820022	1890-1895	Hotel	181163, 98468
20820012	1910-1920	Hotel	181149, 98469
20820037	1905-1910	Bank	181297, 98499
20820036	1900-1920	Bank	181279, 98492
20820035	1790-1810	House	181240, 98484
20820034	1820-1860	House	181231, 98481
20820027	1800-1840	House	181223, 98481
20820029	1900-1920	House	181234, 98469
20820030	1905-1910	House	181234, 98463
20820031	1905-1910	House	181234, 98456
20820032	1905-1910	House	181232, 98450
20820033	1930-1935	Bank	181230, 98439
20820039	1840-1880	House	181236, 98434
20820040	1910-1930	House	181241, 98435
20820041	1910-1930	House	181246, 98435

20820042	1910-1930	House	181261, 98435
20820043	1910-1930	House	181265, 98442
20820044	1910-1930	House	181270, 98441
20820020	1810-1830	House	181105, 98438
20820021	1910-1930	House	181105, 98430
20820145	1900-1910	House	181086, 98429
20820019	1900-1910	House	181082, 98426
20820018	1800-1820	House	181069, 98427
20820017	1800-1820	Two Plaques	181062, 98422
20820038	1800-1840	Warehouse	181332, 98506
20820046	1800-1840	House	181338, 98438
20820047	1800-1840	House	181343, 98436
20820048	1800-1840	House	181349, 98436
20820049	1800-1840	House	181355, 98438
20820050	1820-1860	House	181360, 98437
20820051	1915-1920	House pair	181369, 98443
20820016	1800-1820	House	181049, 98434
20820015	1880-1900	House	181012, 98427
20820014	1900-1920	House	180969, 98462
20820052	1820-1860	House	181413, 98446
20820053	1820-1860	House	181422, 98439
20820054	1820-1860	House	181428, 98438
20820055	1860-1865	House	181444, 98439
20820013	1930-1935	School	180910, 98437
20820011	1850-1860	House	180834, 98423
20820008	1850-1860	House	180811, 98423
20820006	1890-1910	Gate lodge	180788, 98413
20820056	1930-1940	House	181582, 98495
20820057	1930-1940	House	181582, 98488
20820058	1930-1940	House	181582, 98481
20820059	1930-1940	House	181583, 98474
20820078	1790-1810	House	181219, 98399
20820077	1790-1810	House	181212, 98394
20820076	1790-1810	Market house	181206, 98395
20820075	1790-1810	House	181198, 98394
20820074	1790-1810	House	181189, 98402
20820073	1810-1830	House	181144, 98400
20820072	1810-1830	House	181139, 98398
20820080	1790-1810	Render clock	181222, 98381
20820142	1800-1840	Limestone steps	181223, 98382
20820081	1810-1830	House	181239, 98399
20820082	1810-1830	House	181242, 98405
20820083	1810-1830	House	181253, 98396

20820084	1810-1830	House	181258, 98395
20820086	1810-1830	House and pedestrian way	181282, 98402
20820088	1820-1840	Warehouse	181311, 98396
20820089	1925-1920	Bank	181330, 98403
20820090	1860-1865	House	181341, 98405
20820091	1860-1880	House and shop	181370, 98408
20820071	1820-1840	House	181090, 98396
20820070	1810-1830	House	181049, 98399
20820094	1820-1860	House	181444, 98412
20820095	1810-1830	House	181453, 98411
20820096	1800-1840	House	181491, 98410
20820097	1800-1840	House	181501, 98412
20820098	1800-1840	House	181510, 98413
20820099	1800-1840	House	181534, 98413
20820100	1800-1840	House	181570, 98416
20820101	1800-1840	House with carriage arch	181588, 98413
20820102	1810-1830	Church	181610, 98413
20820103	1800-1840	Manse	181619, 98416
20820068	1900-1905	School	180908, 98382
20820067	1790-1810	House	180866, 98393
20820066	1790-1810	House	180859, 98392
20820065	1830-1835	Parish hall	180845, 98383
20820064	1910-1930	House	180833, 98385
20820063	1910-1930	House	180826, 98385
20820062	1910-1930	House	180820, 98384
20820061	1910-1930	House	180814, 98384
20820115	1905-1910	House	181232, 98366
20820141	1965-1975	Library	181184, 98358
20820069	1850-1860	Gate lodge	180950, 98360
20820114	1855-1860	School	180996, 98245
20820113	1880-1890	Chapel	180958, 98237
20820108	1905-1915	Oratory	180916, 98307
20820110	1810-1870	Church	180893, 98274
20820112	1850-1870	Parochial house	180930, 98247
20820109	1865-1875	Boundary walls	180860, 98283
20820111	1800-1840	House	180870, 98224
20820131	1845-1850	Retaining wall	181400, 98265
20820130	1820-1860	House	181369, 98239
20820123	1820-1860	Chapel	181234, 98275
20820122	1820-1860	Convent	181215, 98266
20820121	1820-1860	Chapel	181200, 98275
20820120	1920-1940	School	181188, 98251
20820119	1920-1940	School	181182, 98249

20820117	1850-1870	Convent	181150, 98258
20820118	1865-1875	Chapel	181128, 98235
20820124	1910-1930	Cast-iron fence	181216, 98225
20820129	1870-1890	Gate lodge	181249, 98131
20820128	1870-1890	School	181222, 98136
20820127	1890-1910	Chapel	181220, 98154
20820126	1870-1890	School	181201, 98156
20820125	1880-1920	Oratory	181173, 98154

9.3 Excavations Bulletin

2001:115- Ballynacarriga 1, Cork

Sites and Monuments Record No.: N/A

Licence No.: 01E567

ITM: E 580736m, N 598250m

Site type: Early Christian enclosures

This site was located in the townland of Ballynacarriga at chainage 4150 of the main bypass route and its intersection with the new Ballynacarriga Access Road. The site was large, ditch-defined, double-enclosure settlement of the Early Christian period, on the northern slope of a small valley; the main enclosure was on the valley floor, while the later, upper enclosure was on the slope of the valley. The main enclosed area was roughly square in plan, extending for 35m north-south by 40m as far the eastern CPO line. The upper enclosed area was roughly rectangular and formed by a northward extension of the eastern arm of the main enclosure that then turned westward.

Ditches

The ditch of the main enclosure was almost square in plan, with three of the rounded corners exposed during excavation. The fourth corner and the remainder of the enclosure are located beyond the CPO line to the east. The ditch was U-shaped in profile at the southern part on the flat of the valley floor, with an average width of 3m and depth of 1.75m, changing to a V-shaped profile on the northern part on the valley slope, with a width of 2.5m and a depth of 3m. The ditch widened to a maximum of 5m on the western run. There was no definite indication of an entrance to the enclosure, although the presence of natural gravels in the heavily truncated south-west corner of the ditch is the most likely candidate. Initial interpretation of the fills of the ditch indicate that the lower fills are a result of silting-up over a long period of time, with the upper fills a possible deliberate backfilling over a short period of time.

The enclosing ditch of the upper enclosure was a northwards extension of the east side of the main enclosure, which ran north for 47m and then turned, going west for 51m. This ditch was consistently a deep U-shape in profile, being 3.3m wide and 3m deep on average on the westward run and of

similar depth and width of 3m on the northward run. Initial interpretation of the fills of the ditch indicate that the lower fills are a result of silting-up over a long period of time, with the upper fills a possible deliberate backfilling over a short period of time. The presence of a heavy clay fill, predominantly where the cut of the ditch truncates natural gravel deposits, applied to the sides may indicate that the ditch had been waterproofed.

No evidence for extant banks inside or outside the enclosing ditches of both areas was recorded during excavation. However, this does not rule out the possibility that banks were once a feature of this site. Indeed, ditches of such size would have generated substantial amounts of upcast. This material, when utilised as a bank, would undoubtedly have added to the effectiveness of the enclosing element, whether for defensive or merely enclosing purposes. It is most likely that any bank was used to backfill the open ditches at some stage in the past. A local farmer related that in his memory the field in which the site is located contained lumps and hollows that had been machine-levelled approximately 40 years ago.

Interior features

The interior features of the main enclosure represented a long period of occupation. The focus of activity in the interior was in the south-western part of the enclosure, close to the possible entrance. The most readily recognisable housing features consisted of a large circular stake-hole structure, some 8.7m in diameter (Structure 1), which was truncated by a later rectangular structure (Structure 2) that was picked up in post-excavation. Two earth-cut souterrains with possible suggestions of timber lining were uncovered within the enclosure. Souterrain 1 was roughly horseshoe-shaped in plan and was located to the north of the circular house. Souterrain 2 was roughly rectangular with a small perpendicular offshoot and was located in the eastern half of the enclosure. A large subcircular cooking-pit, 5m in diameter, was located to the south of the circular structure. Further linear slot-trenches and post-hole alignments were present in this area and may represent further structural activity. Two poorly preserved corn-drying kilns and a small box furnace were excavated within the main enclosure.

The internal features of the upper enclosure were more clear-cut than those of the main area and consisted in the main of three circular structures, 2A, 2B and 2C. Structures 2A and 2B were of slot-trench construction, averaging 5m in diameter, and the slot-trench was 0.3m wide. Structure 2B was the better preserved of the two huts. The function of Structure 2C was less clear. Again, it was circular, but it had a double slot-trench and the southern portion was absent. Its close proximity to corn-drying kilns K2B and K2C suggest that it may have been a windbreak of some kind. Three corn-drying kilns, K2A, K2B and K2C, were uncovered in this enclosure; all were keyhole-shaped and had evidence for stone linings to both flue and chambers. A large rectangular feature, S2A, a possible souterrain measuring 6m in length, 0.9m in width and 0.9m in depth, was found close to the outer edge of the northern arm of the main enclosure.

The nature of the interior features of the enclosures plus the noticeable lack of finds, apart from two complete decorative glass beads, would suggest an Early Christian period date for this monument. The results of radiocarbon dating from the enclosing ditches support this finding, with the main enclosure ditch producing a 2-sigma calibration date of cal. AD 420–670 (cal. BP 1530–1280). The lowest fill of the upper enclosure ditch produced a 2-sigma calibration date of cal. AD 620–700 (cal.

BP 1320–1250). These dates show continuity on site potentially from the early 5th to early 11th century AD.

2001:171- 8-10 McCurtain Street, Fermoy, Cork

Sites and Monuments Record No.: N/A

Licence No.: 01E1075

ITM: E581103m, N 598486m

Site type: Urban- human remains

Monitoring of the excavation of foundation trenches here exposed a small number of disarticulated human bones in the redeposited sandy subsoil. The bones may represent the remains of people buried in the graveyard associated with the 12th-century Cistercian abbey some distance to the west of the site. The bones were removed only where they were disturbed by machine.

2004: 0327- Rathcormac/Fermoy Bypass Scheme, Cork (also 2004:0263)

Sites and Monuments Record No.: N/A

Licence No.: 04D070, 04R118

ITM: E 581954m, N 598756m

Site type: No archaeological significance

An impact assessment relating to a proposal to construct a new bridge over the Blackwater River at Fermoy, Co. Cork, was undertaken in May 2004. The new bridge is a strategic viaduct of a new section of the N8 Rathcormac/Fermoy bypass, which is currently under construction.

The riparian and intra-riverine works associated with this project include the construction of access roads, two settlement ponds and associated pile trenching, two river-edge hard stands to construct two coffer dams and temporary mid-channel piling. An investigative dive survey and underwater metal detection comprised the major components of the AIA.

The river is 47m wide at the construction site and is around 2-2.5m deep. The centre of the riverbed comprised small gravel with very little vegetation, possibly due to self-scouring from heavy and regular run-throughs. As one approaches both sides, sediment builds up rapidly and visibility (which extends to around 4m in mid-channel) is then reduced to near zero. The heavy sediment and frequent sunken trees and branches impeded the survey. No archaeological features or artefacts were noted at the proposed construction site, either in the river or on its associated riparian environs.

2004:0334- Scartbarry/Ballyoran/Fermoy, Cork

Sites and Monuments Record No.: N/A

Licence No.: A014/001

ITM: E 581108m, N 598830m

Site type: Monitoring

Monitoring took place of works within previously untested or unresolved locations along the route of the new N8 Rathcormac/Fermoy bypass between June 2004 and January 2005. These works occurred both within and outside the extents of the CPO and were initially monitored under licence 04E09948 (see No. 256 above). However, with the introduction of the National Monuments (Amendment) Act in the summer of 2004, the remaining archaeological investigations within the road-take took place under ministerial direction. Internal monitoring was designated the works number A014/001, while works occurring outside the extents of the CPO continued to be monitored under licence 04E0948.

Monitoring of works within the CPO took place at three locations along the road-take, in the townlands of Scartbarry, Ballyoran and Fermoy. Dense forestry or impenetrable wetland had precluded previous archaeological investigations of 1.1km of land at these locations during the earlier centre-line testing phase. During the course of monitoring at Scartbarry, a small area of burnt-mound material, measuring 1.7m by 1.2 by 0.1m deep, was excavated, while two post-medieval field boundaries were recorded within its vicinity (178297 087311 to 178323 087312).

Three excavations were carried out under separate licences or works numbers as part of this scheme. The sites comprised two fulachta fiadh, one excavated by Bruce Sutton at Fermoy Wood (No. 264 above, 04E1014) and A014/002 (Scartbarry 6), and a potential brushwood platform or trackway (Ballyoran Bog) excavated by John Tierney under an extension of the licence 04E1014 (No. 262 above).

Giant Irish Deer skeletal remains, including four skulls and large antlers, were retrieved from Ballyoran Bog in the course of road construction. These remains were retrieved from clay sediments, c. 1-1.5m below the peat stratum.

2005: 245- Newmarket Street, Fermoy, Cork

Sites and Monuments Record No.: N/A

Licence No.: 05E1412

ITM: E 581108m N 598830m

Site type: Urban

Testing of a proposed development site at Newmarket Street, Fermoy, Co. Cork, was undertaken as part of an impact assessment. The site is located within the constraint zone for the historic town of Fermoy (SMR 35:107). No archaeological finds or features were uncovered during testing.

2006:333 – Newmarket Street, Fermoy, Cork

Sites and Monuments Record No.: N/A

Licence No.: 05E1412

ITM: E 581108m, N 598830m

Site type: No archaeological significance

Testing of a proposed development site at Newmarket Street, Fermoy, was undertaken as part of an assessment. The site is located within the constraint zone for the historic town of Fermoy (CO035-107). Two test-trenches were excavated across the development area, but no archaeological features or deposits were uncovered.

2006:378- Newmarket Street, Fermoy, Cork

Sites and Monuments Record No.: N/A

Licence No.: 06E0105

ITM: E 581231m, N 598412m

Site type: No archaeological significance

Monitoring was undertaken of groundworks associated with the construction of a dwelling house at Newmarket, Co. Cork. The proposed site is within the constraint zone for a Church of Ireland church (CO022-171). No archaeological finds or features were uncovered during monitoring.

2007:257- Fermoy, Cork

Sites and Monuments Record No.: N/A

Licence No.: 07E0375

ITM: E 581108m, N 598830m

Site type: No archaeological significance

Monitoring was undertaken in areas of archaeological potential within the town of Fermoy during the excavation of service trenches for broadband cable. These trenches were excavated through the modern roadway and in areas previously disturbed by modern service trenches. No archaeological finds or features were encountered.

2009:145- Fermoy, Cork

Sites and Monuments Record No.: CO035-107

Licence No.: 07E0598 ext.

ITM: E 581108m, N 598830m

Site type: Post- medieval

Some groundworks were monitored as part of the Fermoy North flood alleviation scheme, Fermoy, Co. Cork. Groundworks included topsoil-stripping of large trench-like areas to accommodate the construction of flood protection walls and embankments close to the north bank of the River Blackwater. Trenching was undertaken along some streets/roadway to facilitate the laying of storm pipes.

Monitoring was confined in the main to three locations: the grounds of Fermoy House to the west of Fermoy Bridge (Trenches 1-5); on the floodplains to the east of the bridge (Trenches 6-9, 11 and 12); and the roadway to the north of the bridge, between the south end of St James' Place and the north corner of Francis' Street (Trench 10). All of the trenches, with the exception of Trench 10, were in greenfield areas.

In Trenches 1 to 5 a total of ten features were found. The first feature identified comprised an east-west curvilinear wall. The curved nature of the wall and its position suggest that it may have been a precursor to the concrete wall presently being installed in exactly the same location. A second interpretation is that it was a feature in an ornamental garden associated with Fermoy House.

There was an east-west-aligned linear feature within Trench 2. Due to the properties and the compaction of the fill, in conjunction with its direction, it is considered it may be the remains of an earlier cart track which accessed Fermoy House from the entrance to the east. A large area towards the central part of the track was not revealed and may still be present below the base of the excavation. It was noticeable at this point that the primary subsoil was deeper possibly overlying a natural hollow.

Two features revealed in Trench 2 were considered to be modern stone-filled drains and were representative of a series of similar features which criss-crossed the site.

A fourth feature in Trench 2 was more enigmatic. Although it does not appear to be the collapse of a structure, it may possibly be the foundation of one; it is similar in plan to a kiln. Due to the lack of depth of the excavated trench and without the presence of a section, it was not possible to further investigate this feature. It was preserved in situ.

Another feature in Trench 2 comprised three distinct elements: a stone cluster to the west and two areas of charcoal-rich material. No function was established and it was preserved in situ.

Another feature in Trench 2 was interpreted as a demolition pit pertaining to the earlier Fermoy House and it was also preserved in situ.

The seventh feature in Trench 2 comprised a subrectangular charcoal-rich spread, which may be the top layer of a pit, the provenance for which is unknown. This feature was preserved in situ.

The final feature in Trench 2 consisted of a cobbled surface. It was considered the cobbles were sourced from the banks of the nearby Blackwater River. They were set within the orange/brown subsoil, which can be seen as a hardened matrix around the stones. This feature is considered of post-medieval date and was preserved in situ.

A feature located in Trench 5 comprised a mixture of brick, rocks and mortar, it is possible the bricks and mortar were previously part of a structure but were considered to have being utilised as a soakway/drain and were of relatively modern date.

Only the top of the feature located in Trench 6 was revealed and represented as a vague outline at the base of excavation. The thickness of the foundations suggested a building(s) of considerable size, with internal subdivisional walls. It is considered these may be associated with a row of cottages portrayed on the 1842 first-edition OS map. It is also possible they are part of a workhouse that was known to have being within this area, the exact location of which has been lost (local information). All of these remains have been preserved in situ.

A feature located in Trench 4 appeared to comprise two phases of road construction comprising stone infill with redeposited subsoil between each phase. It is considered this road extended from the main entrance of Fermoy House to the dwelling.

In Trench 7 there was evidence for a row of buildings the exact function of which remains unknown. However, it is considered they are associated with the stable complex adjacent to the west and were either workshops or worker's cottages associated with Cotter-Jones Estate.

The final feature extended along the roadway approaching the north side of Fermoy Bridge. It comprised a section of a rough cobbled surface, 0.12m thick. It was 1.3m below the present road surface and directly overlaid the natural deposition. This feature was sealed by a thick layer of colluvium and may be the remains of the earliest road surface c. 1718, which is visible in the east section of Fermoy Bridge extending north.

2017:395- Island Mills, Mill Road, Fermoy, Cork

Sites and Monuments Record No.: CO035-025

Licence No.: 17E0643

ITM: E 5811510m, N 598699m

Site type: Mill complex

Test excavations were carried out for PORTAL Architects on behalf of UHPC International Ltd at Island Mills, Mill Road, Co. Cork.

The proposed development site is located on the south bank of the River Blackwater in the town of Fermoy. The c. 1.4 ha site is occupied by two large structures, a mill building (CO035-025), and a modern two-storey office building as well as a former on-site car park. A modern link corridor links the mill and the modern building. The mill building itself has been modified over time and converted to office space c. 1990, with a modern porch and annex added to the southern side. The site is currently vacant, having been most recently occupied by BUPA Healthcare.

The mill complex which lies in the core of the proposed development area is a Recorded Monument (CO035-025), a Protected Structure (RPS 200) and is recorded on the National Inventory of Architectural Heritage (Reg. No. 2081055). It is known from cartographic sources that the mill

complex was originally much more extensive than the standing remains, and there is high potential for associated structural remains to survive sub-surface.

The proposed works involve removing the link corridor and modern annex to the mill and construction an extension to the modern building, a new linking entranceway and a new standalone dispensary building to the south of the mill building. It is probably that groundworks associated with the proposed development will impact on the sub-surface remains of the historic larger mill complex. Any possible impacts on the standing mill building have been considered in a separate architectural report accompanying the planning application prepared by David Slattery Architect & Historic Buildings Consultant.

A draft archaeological impact assessment was prepared (Shiels 2017) which proposed that testing the footprint of the proposed development prior to construction would be required.

Test trenching uncovered the remains of an interior flagstone floor surface, external wall and exterior cobbled yard. All uncovered features are associated with the mill complex.