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Portmarnock South Phase 1B

Archaeological Report

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For
St. Marnock's II DAC and Clear Real Estate Investments plc

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1. Introduction

1.1 This report describes the archaeological and historical context of the lands proposed for residential development at Portmarnock and Maynetown townlands Co Dublin. The lands are owned by St. Marnock's II DAC and Clare Real Estate Investments plc and are located south of Station Road, to the west of the Coast Road (R106) and the Baldoyle Estuary, north of the Mayne Road (R123) and to the east of the Dublin-Belfast Railway Line (Figure 1).

Figure 1 Site Location

1.2 The report describes the archaeological findings as a result of investigations (geophysical survey, test trenching and excavation) taking place from 2000-2015 and archaeological monitoring for the previous phases of works (Phase 1A and 1B 2016-2017). Consultation has taken place with the National Monuments Service and Fingal County Council throughout all previous phases of archaeological investigation and excavation works.

1.3 The report also provides an overview of the conservation measures previously agreed with the authorities (Gowen 2009) to ensure the sensitive incorporation of the upstanding monument, a mound DU015-014 in Portmarnock townland and how these measures apply to the present design concept.

1.4 Mitigation measures are suggested to ensure the ongoing protection in the form of preservation by record and insitu of previously recorded monuments and newly identified sites within and adjacent to the proposed development works.

1.5 Consultation has taken place with the design team members and both above ground monuments and below ground archaeological remains have been considered within the design detail. Meetings have taken place with Fingal County Council and their community archaeologist on the 2nd and 16th of August and on the 23rd of November 2017. The National Monuments Service have also been advised of the proposed development and as part of the licence requirement, reports associated with the 2016-2017

findings have been submitted to the Department of Culture, Heritage & Gaeltacht (DCHG). A meeting took place with the National Monuments Service on the 29th of August informing them of the archaeological findings to date and the proposed extent and elements of the development.

1.6 Following comments issued by the National Monuments Service on the pre-application report (23rd October 2017), a meeting was held with An Bord Pleanála (25th October 2017) as part of the pre-application consultation process. In its issued opinion An Bord Pleanála requires:
'*further consideration and or amendment of the archaeological report, having regard to the submission of the Department of Culture, Heritage and the Gaeltacht to An Bord Pleanála (dated 23/10/17). This consideration should address inter alia an assessment of the impacts and likely impacts from the construction of the proposed regional wetland area and the associated development including the outfall into Baldoyle Bay*'.

1.7 A meeting was held with the National Monuments Service of the DCHG on the 22nd of November 2017 to agree an approach and to facilitate advancing the necessary archaeological works in order to complete this application to the satisfactory conclusion of the heritage authorities. The advice from the authorities and discussion at this meeting has assisted in informing the mitigation strategy. Appendix 2, itemises the responses to the comments issued by the Department (23rd October 2017).

1.8 The archaeological assessment is based upon the following sources: the Record of Monuments and Places (RMP) constraints maps and files of the Archaeological Survey of Ireland; the topographical files of the National Museum of Ireland (NMI); historical maps published online by Ordnance Survey Ireland and held by the Map Library of Trinity College, Dublin; the Excavations Bulletins (which contains summary accounts of all excavations carried out annually in Ireland, www.excavations.ie); the Fingal Development Plan 2017-2023; the Shipwreck Inventory of Ireland and Irish Wrecks Database; and a number of other published and unpublished documentary sources outlined in the reference section at the end of the report. It also relies on information contained in previous archaeological reports undertaken by Margaret Gowen & Co. Ltd within the study area (see reference section).

2. Planning History and a Description of the Proposed Development

2.1 The development of lands at Portmarnock is occurring on a phased basis and is taking place in accordance with the Portmarnock South Local Area Plan (July 2013).

2.2 The development of the application lands is taking place under the Strategic Housing Development Planning Applications which is considered for developments of 100 or more residential units. This new type of application has been introduced as part of Rebuilding Ireland to speed up the planning application process and accelerate the delivery of larger housing and student accommodation proposals (An Bord Pleanála (ABP) 2017).

2.3 This report is an amended version of the archaeological report submitted to ABP as part of the Stage 1:Pre-Application Consultation in order to establish if there is a reasonable basis for an application or whether further consideration or amendment to the documents are required. It takes into consideration comments issued by the NMS and Fingal County Council and includes the results of strategic test excavation in Maynetown townland that targeted linear crop marks at the wetland area and outfall pipeline.

2.4 Previous archaeological work including a conservation plan for the preservation in situ of two recorded monuments, Portmarnock mound DU015-014 and Maynetown enclosure DU015-055 was undertaken in

relation to planning permission being granted under register reference F07A/0947, Condition 14 (Appendix 1).

2.5 Approval for Phase 1A was granted under planning permission F13A/0248, and archaeological monitoring and investigation was undertaken (Appendix 1). Reports in relation to the archaeological findings from Phase 1A have been submitted to the Department to satisfy the requirements of Condition 28.

2.6 The proposed development comprises 150 residential units, temporary pumping station and 24 hour waste water holding tank, surface water outfall and storm water wetland area (including an outfall to Baldoyle Bay) and the site area is 7.58Ha (shown in Figure 2 and detailed in Appendix 5). The storm outfall will link to a proposed regional wetlands area (Figure 4) and outfall pipes, located in Maynetown townland within the Portmarnock lands adjacent and west of the Coast Road.

2.7 The construction compound will be located to the south of the residential build, west of the townland boundary. The compound will contain site huts, welfare facilities and material storage areas including bunded areas for storage of oil and lubricants. The construction site will be fenced off where practical and a temporary traffic management system installed including temporary haul roads.

2.8 The storm water wetland consists of a continuously wet area approximately 300mm deep to enable the growth of bottom rooted plants which provide treatment of the storm water as it flows through the wetland in normal weather conditions. During extreme events of rainfall and high tides, water depth can increase to a depth of c 2.5m for a short period during tide locking.

2.9 The wetland is formed by excavating to an average depth of c 2.5m and shaping the sides to obtain the form required. Due to the impervious nature of the subsoil it is unlikely that the wetland will need to be lined. A concrete forebay (this is set into the ground and will be topsoiled over and seeded back to grassland) is also provided to trap silt from the site storm sewer collection system before storm waters overflow into the wetland. A 525mm diameter outfall pipe is provided from the wetland which in turn discharges into Baldoyle Estuary.

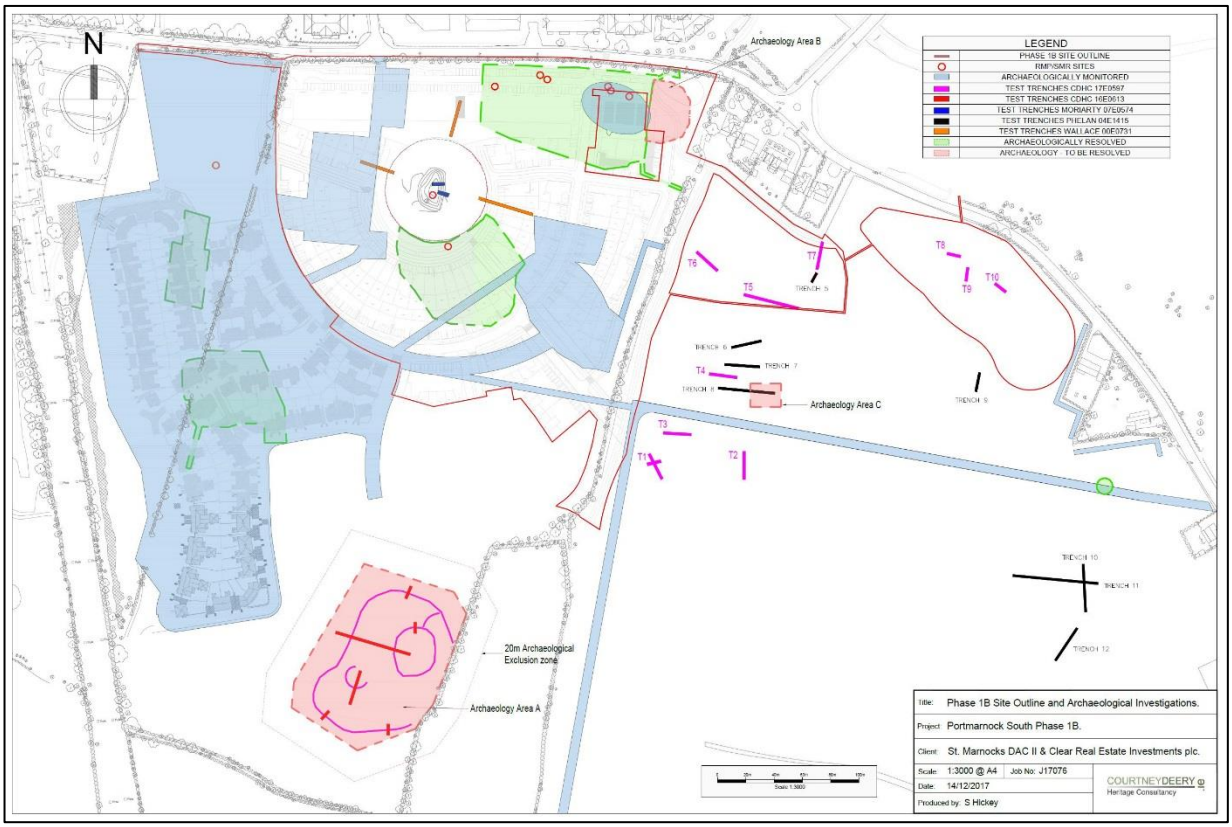


Figure 2 Extent of Portmarnock South Phase 1B outlined in red, green areas have been archaeologically excavated and areas in pink (Archaeology Areas A, B, C) are to be resolved. The blue area has been archaeologically monitored. Detailed drawing Appendix 5

2.10 The proposed storm outfall will necessitate the following construction work in the Estuary (below the high water mark) (HWM) (Figure 3).

- Installation of a 525mm diameter concrete outfall pipe.
- Construction of a concrete base slab and wing walls at the outfall location.
- Reinstatement of the disturbed foreshore. An area of approx. 20sqm of the foreshore (i.e. below the HWM) will be disturbed to enable construction of the concrete base slab and wing walls of the outfall structure. Approx. 35sqm above the HWM will also be disturbed for the same purpose. There will be no disturbance of the Annex 1 habitat.

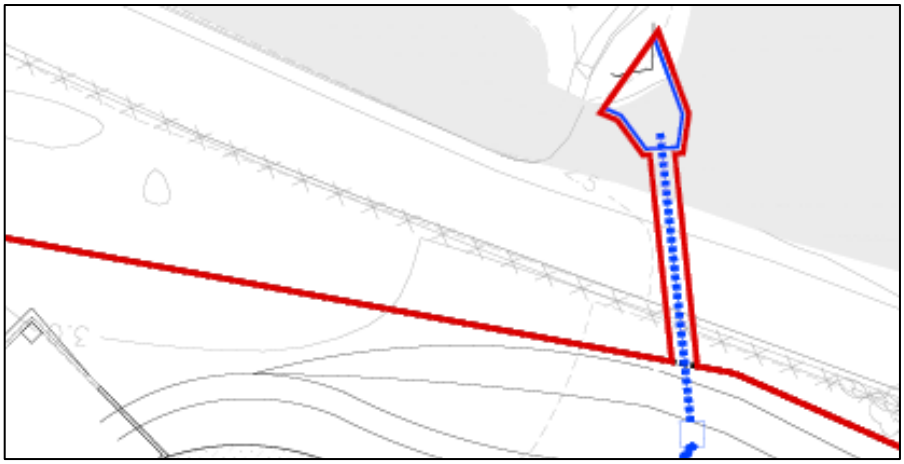


Figure 3 Detail of the storm outfall works

2.11 As the installation of a section of the concrete base and wing walls for the storm water outfall is below the HWM will necessitate a Foreshore Licence Application to the Department of Housing, Planning, Community and Local Government. This application is in preparation and will be made after the planning application to An Bord Pleanála.

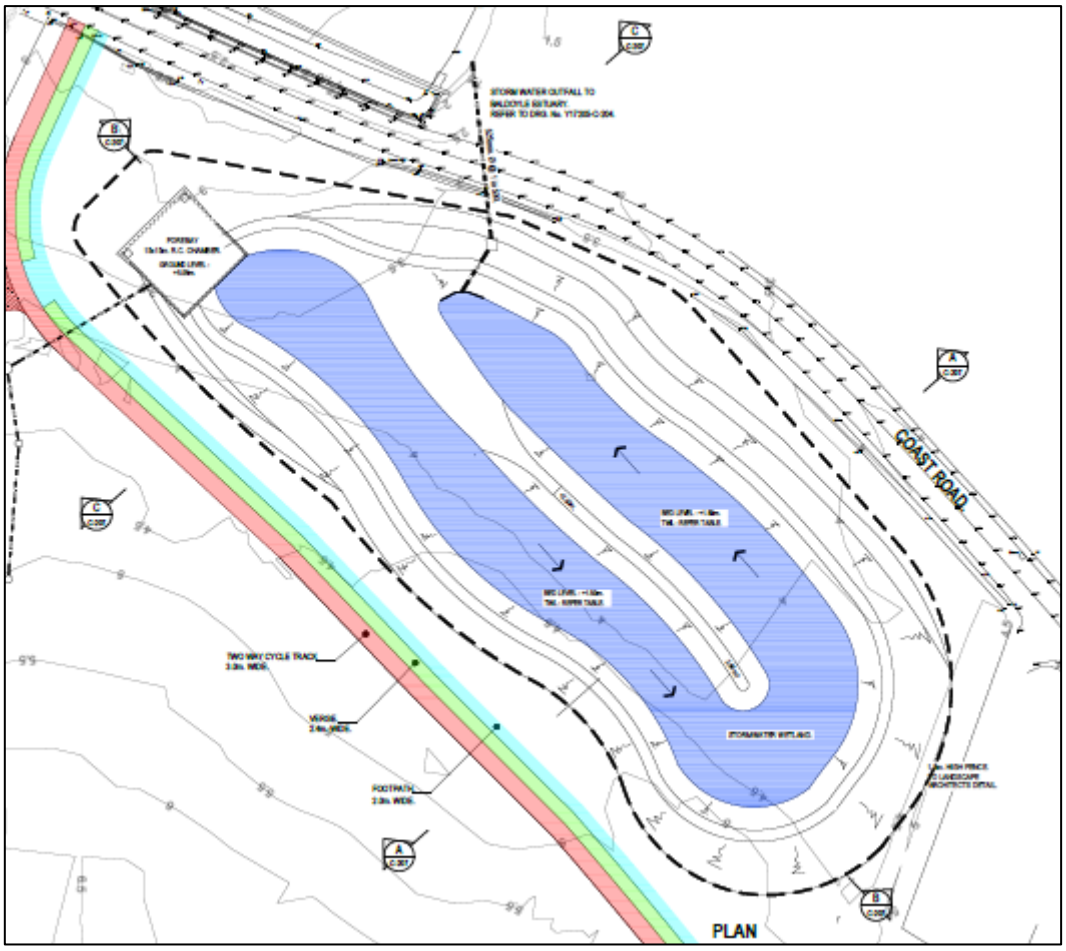


Figure 3A Plan of regional wetland area and storm outfall

2.12 A large portion of the proposed development lands have already been examined through archaeological excavation (Moriarty 2008, medieval settlement and McLoughlin 2017, enclosure site) and have been monitored and archaeologically assessed as part of the enabling works for Phase 1A (Walsh 2014, site compound and McLoughlin 2016, haul roads, attenuation ponds, drainage, fowl sewer, utility services and embankments) (Figure 4 - Figure 6) (Appendix 5).

2.13 Previous to the above phases of work, investigations of the wider Portmarnock lands (which includes the present application area) included geophysical survey (Sheils et al 2000, Nicholls 2002 and Leigh 2004) and archaeological testing (Wallace 2000, Phelan 2004, Moriarty 2007) (Figure 4). Testing established the existing buffer zone around the Portmarnock mound (DU015-014) and identified the medieval settlement (DU015-031001-006) which was subsequently excavated (Moriarty 2008, Licence No. 08E0376, Planning Ref F07A/0947). All findings in relation to these investigations are discussed further in the Archaeological Context (Section 3) of the report.

2.14 The report firstly describes the archaeological elements within and to the south of the residential lands and then discusses the archaeological elements and investigations that have taken place within the lands where the associated infrastructure works are taking place, namely, the storm water outfall, the regional wetlands area and the surface water outfall pipelines.

3. Archaeological Context: Investigations 2000-2015

3.1 A phased programme of archaeological investigations and resolution took place on the Portmarnock lands over the period from 2000 to 2008. As a result, two significant recorded monuments, the Portmarnock mound DU015-014 and the Maynetown enclosure DU015-055 have been preserved in situ in accordance with a multidisciplinary conservation plan which was agreed with the National Monuments Service of the Department of Environment, Heritage and Local Government (now the DCHG) and Fingal County Council. The Portmarnock mound (DU015-014) forms part of this application and details about how it will be incorporated into the development are discussed in Section 4 and 5 of this report. This monument will form a focal point and a green area within the proposed residential development.

3.2 In addition to this, a medieval settlement containing six well defined property plots, previously identified by geophysical survey, aligning Station Road to the north of the development lands, was archaeologically excavated (Moriarty 2008 08E0376) (RMP DU015-0136001-006). The area of excavation was roughly rectangular in plan and measured c. 50–70m north–south by 110m. The remains of at least four truncated buildings were identified, along with metalled surfaces and wells. A possible medieval metalled road surface was also exposed and recorded and subsequently was placed on the archaeological record as DU015-137.

3.3 During the period 2000-2008, geophysical survey and test excavation of the lands assisted in defining the location and extent of below ground features of an archaeological origin throughout the wider development lands, including lands for this application (Figure 4).

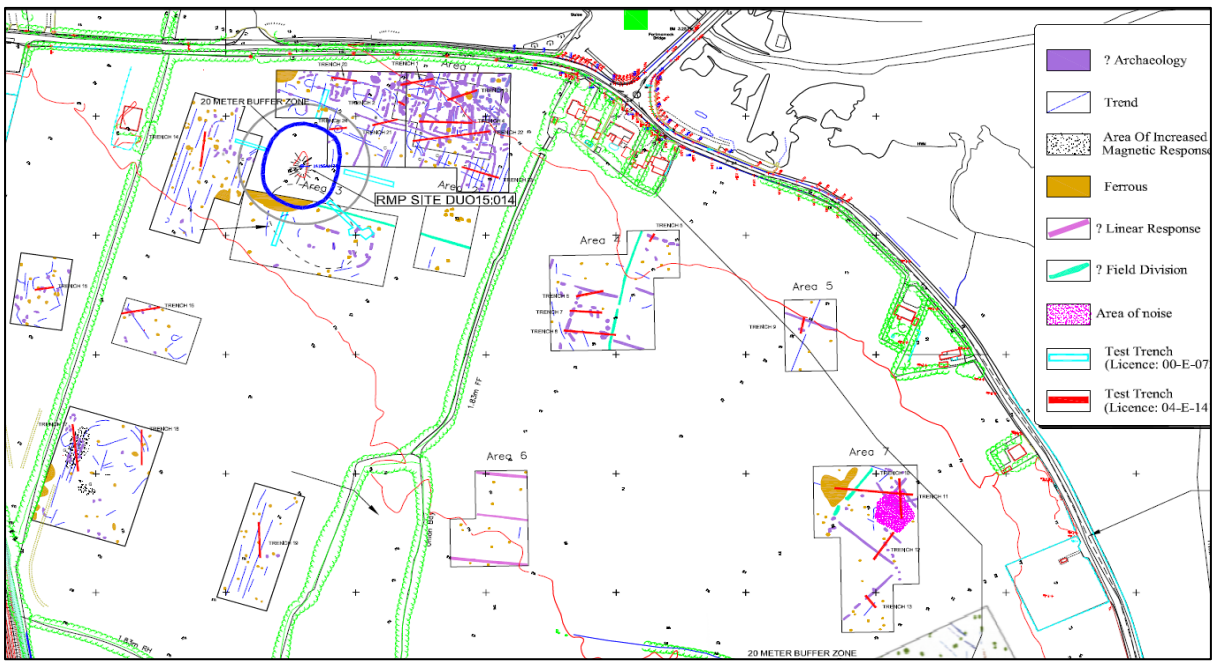


Figure 4 Summary of geophysical survey and archaeological testing on the Portmarnock lands 2000-2008.

3.4 However, with recent phases of work it has been demonstrated that topsoil stripping as an archaeological exercise within the lands is particularly beneficial for detecting sites that have been previously 'sealed' and therefore cannot be effectively detected by geophysical survey and/or surface test excavation.

3.5 Individual small scale features such as the burnt mound/pit identified in 2004 by testing (Phelan 2004) (Figure 4 and 6) can and will be resolved through excavation at the appropriate time and this application avoids this feature.

3.6 The conservation plan and compliance document (Gowen 2009) and previous archaeological test excavation and excavation reports (Moriarty 2009) recommended archaeological resolution/excavation of any further remains should they be revealed during the course of monitoring or investigation within the remaining development lands at Portmarnock.

3.7 In 2012 archaeological monitoring was carried out of topsoil stripping for the establishment of a site compound and the carrying out of enabling works associated with the development permitted under planning permission register reference F07A/0947 (Walsh 2014a, Licence Ref. 12E0358). The enabling works comprised the construction of a site entrance and compound, the erection of fencing around the mound site DU015-014 and the Maynetown enclosure site DU015-055, the erection of hoarding along the northern perimeter of the site and the excavation of a c.100m long trench along the western boundary of the site for power cables. No archaeological features were encountered during the course of the topsoil stripping. No further work was carried out pursuant to planning permission register reference F07A/0947 and this planning permission has now lapsed.

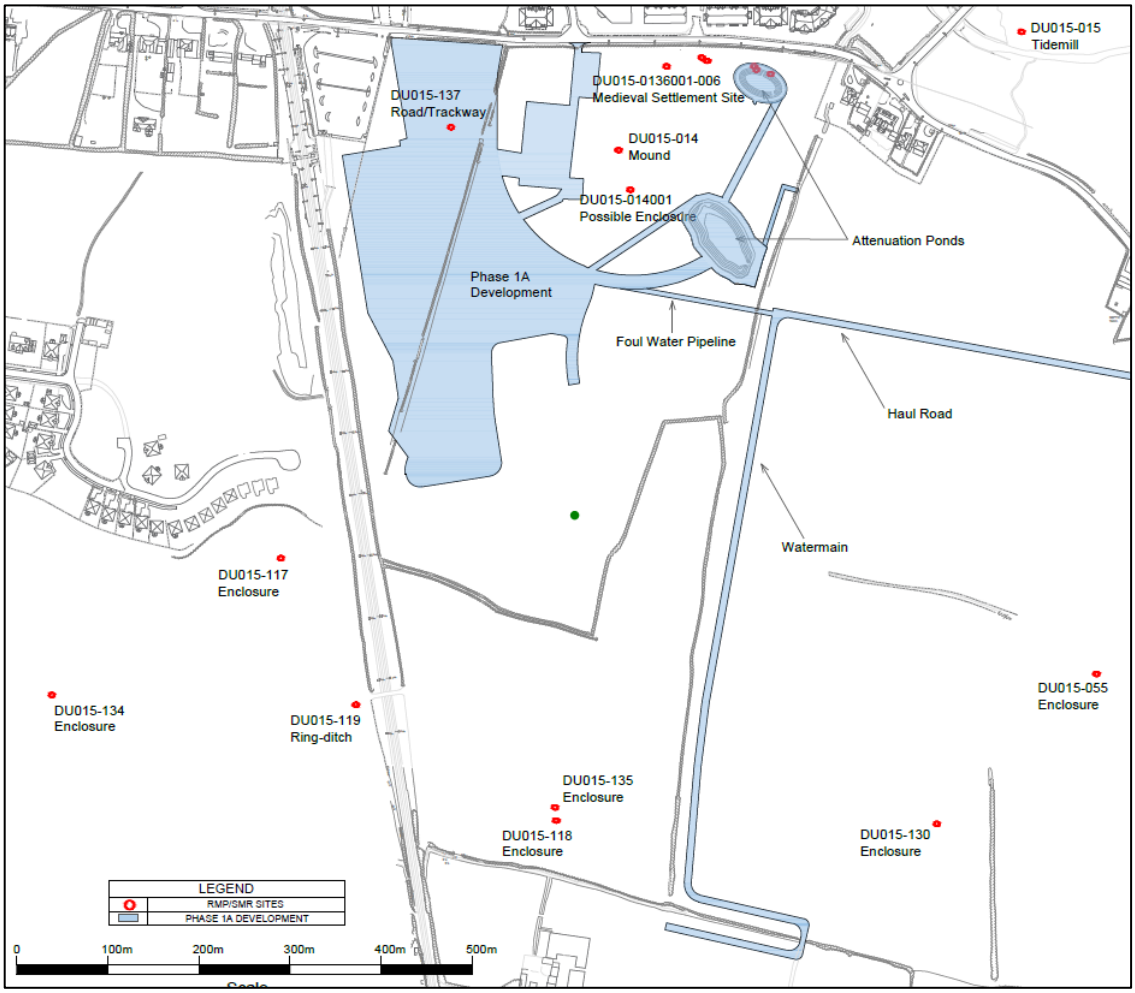


Figure 5 Phase 1A development – archaeologically monitored area and SMR/RMP sites

4. Archaeological Context: Investigations 2016 – Phase 1A

4.1 The lands at Portmarnock are being developed on a phased basis and planning permission was granted in 2014, under register reference F13A/0248, for the Phase 1A development (Figure 5). Condition No. 28 of the Phase 1A planning permission required archaeological monitoring of all ground works within the proposed development site. This condition was put in place by Fingal County Council in order to facilitate the recording and protection of any items of archaeological significance that the Phase 1A site may possess.

4.2 Monitoring of the topsoil stripped lands in the Phase 1A development area has revealed five discreet areas of archaeology (Areas 1-5) as well as a substantial ditched enclosure (Area 6) and an extension of a previously excavated medieval settlement (Area 5a). Areas 1-5 and 6 have been excavated and preserved by record (Figure 6). Area 5a has not been excavated at this point and is located within the present application lands. All archaeological monitoring in relation to the Phase 1A development is now complete (McLoughlin 2017a). The areas are described in further detail below and are shown in Figure 6:

Area 1 Three ditches, two east-west and one north-south were identified in this 2.2m wide trench and all contained varying quantities of medieval pottery, animal bone and sea shells (Area 1).

Area 2 The remains comprised a metalled surface (the surface of which was sealed by a deposit of brown silty sandy clay and yielded sixteen sherds of medieval pottery), a north-south post-

medieval drainage ditch, a pit and an east-west field boundary ditch which appeared to be relatively modern. This area is located immediately east of Moriarty's 2008 excavation (Area 2).

Area 3a A cereal drying kiln and linear feature containing animal bone and sea shell was excavated and proved to be an internal feature of the ditched enclosure (Area 3) which was subsequently excavated in 2017.

Area 4 Extension to medieval road/trackway excavated in 2008 (subsequently allocated SMR No. DU015-137) – Monitoring of topsoil stripping for the area of the phase 1A houses uncovered patchy remnants of this trackway to the north of the previously excavated section and an additional area of metalling adjacent to the trackway. To the south no trace of this trackway survived (Area 4).

Area 5 A burnt mound waterhole was excavated along the east end of the sewer/ foul main pipeline and comprised a large sub-oval pit. The pit was filled with black soil containing charcoal and burnt stones and produced a Bronze Age date (Area 5).

Area 6 Monitoring in conjunction with an analysis of aerial photography (Plate 1) revealed the presence of a sub-rectangular below ground enclosure (Figure 6, Area 6). The top fill of the outer enclosing ditch consisted of soils/ fill material of a considerable depth that are very similar and difficult to distinguish from the surrounding subsoil. This would explain why this site remained largely 'invisible' to geophysical survey and/ or test trenching which was carried out previously.

4.3 Archaeological excavation of this feature commenced in August 2016 as part of a 9.5 week programme. A substantial sub-rectangular ditched enclosure with an internal ditched enclosure was fully excavated under licence number 16E0101. A wooden artefact (hoop) found at the bottom of the external ditch provided a date of 1238±27 BP (calibrated to AD 686-876) providing a firm early medieval context for the site. This area is now archaeologically resolved and the preliminary report submitted to the National Monuments Service and Fingal County Council and the Phase 1A development works have proceeded. The post-excavation works including specialist analysis of finds and environmental material are currently underway.

Figure 6 Archaeological investigations summary map Phase 1A and location of recorded monument

5. Archaeological Context: Investigation and Excavation 2017 – Phase 1B

5.1 Targeted test excavation of a possible sub-surface enclosure (Figure 6, SMR DU015-014001 marked as Area 3) identified through aerial photography (Plate 1) took place during the Phase 1A investigations (August 2016) and confirmed the presence of a sub-surface ditched enclosure buried deeply under 50-70cm of redeposited natural soil (similar to the sub-rectangular enclosure excavated in Area 6 within the Phase 1A development site). The sub-surface enclosure appeared to correspond with the plan form as seen on aerial photography.

Plate 3 Aerial photograph showing excavated enclosures and newly discovered enclosure to the south

5.2 The enclosure was bisected by a previously archaeologically excavated (McLoughlin 2017, Licence No. 16E0101) pipeline / haul road, and its northern extent is contained within the conservation area devised for the mound at Portmarnock (DU0015-014). Two features were identified during monitoring for the pipeline / haul road and resolved (Area 3a) but no ditch was apparent. Further to consultation with the National Monuments Service of the DCHG, it was agreed that the ditched enclosure (except the northern portion within the constraint area for the mound) could be excavated and preserved by record. Excavation of this site took place from January 2017 over a 14 week period (licence No. 16E0613) and the post excavation process is now underway and the preliminary report has been submitted to the authorities (Mc Loughlin 2017).

5.3 The enclosure was slightly elliptical or sub-circular in plan and measured a maximum external diameter of 77m east-west x 70m north-south (68m east-west x 60m north-south internal diameter), with an entrance to the east (within the pipeline / haul route). During the test excavation a wooden hoop artefact was recovered from close to the bottom of the ditch and this has been dated to 1348±27 BP (calibrated to AD 641-763) firmly placing the ditched enclosure in the early medieval period and suggesting that this

enclosure (Area 3) and the previously excavated enclosure in Area 6, (Licence No. 16E0101) are contemporary in date.

5.4 Significant finds recovered from the ditch during the excavation include early medieval pottery imported from the eastern Mediterranean (rare in Ireland and dated to c.450-600AD), a wooden dish preserved in the base of the ditch, stone tools and worked antler artefacts. A huge volume of animal bone was recovered from the ditch and this includes whale/cetacean bones. Cereal drying (kilns) and metalworking activity were evident on site and there was one human burial (adult, male, approx. 40-45 years in age and 410-607AD in date) excavated within the enclosure.

6. The Application Lands

6.1 Both geophysical survey and test trenching have taken place throughout the proposed application lands. The access road, compound area, haul roads, attenuation ponds and infrastructure and the foul outfall pipeline have all been subject to archaeological monitoring and where necessary archaeological investigation. Within the residential application area, all areas that were revealed to contain archaeological deposits have been archaeologically excavated apart from Area 5A (Figure 4 and 6) (Appendix 5) and the recorded monument, the mound (DU 015-014), which has been preserved in situ surrounded by a protected buffer zone.

6.2 **Area 5A – Medieval Findings within the residential application lands**

During archaeological monitoring of the Phase 1A lands and associated infrastructure, features of a possible medieval date were located to the east of the previously excavated medieval settlement (Figure 4, Area 5A, 40m x 70m) (northeast corner of the proposed application development lands) (Plate 2 and 3) (Appendix 5). These features possibly represent a continuation of the medieval settlement (outside and on the periphery of the main concentration of excavated medieval features). The medieval village was the subject of a previous excavation adjacent to Station Road (Moriarty 08E0376, DU015-031001-006).

The newly discovered remains were covered with terram and topsoil was reinstated pending resolution of this area in advance of any future development proposals. As per the comments of the NMS (Appendix 2) an archaeological licence has been sought from the authorities to excavate this site in its totality in advance of construction.

Plate 2 Newly revealed stone linear feature – northeast corner of the site

Plate 3 View to the proposed excavation area (Area 5A)

6.3 The Mound (DU015-014)

SMR No: DU015-014
Class: Mound
Townland: Portmarnock

Status

The mound at Portmarnock is on the Sites and Monument Record as DU015-014 and as such is protected by the National Monuments Act 1930 and amendments. It is also listed as a protected structure (RPS No. 0475) in the Fingal Development Plan 2017-2023 and described as an archaeological site of a flat topped mound.

Description

This flat-topped mound is located on a slight rise and enjoys extensive views of the coast but restricted views to the north. The mound is oval in plan (dims. 27m N-S; 14m E-W; H3.5m). Morris (1939, 182-3) has associated this site with the burying place of 'Maine' son of Medb and Ailill which is mentioned in the Metrical Dindsenchus.

Originally the monument may have been considerably larger as according to a local landowner it was severely damaged in the early 1970's when an attempt was made to level it during field clearance works. In 2007 vegetation was removed and a detailed topographical survey of the mound was undertaken in order to provide an accurate record of the existing topography prior to test excavation taking place (Figure 7).

Two test trenches (Figure 8) were hand excavated (Licence no. 070754) into the eastern side of the mound and revealed the mound has been severely disturbed by modern activity. Intact mound deposits did survive and comprise dumped clay that contained infrequent pieces of shell and charcoal as well as occasional sherds of medieval pottery, suggesting that the mound may in fact be medieval in date and may be associated with the medieval village to the north-east (Moriarty 2008:477 www.excavations.ie).

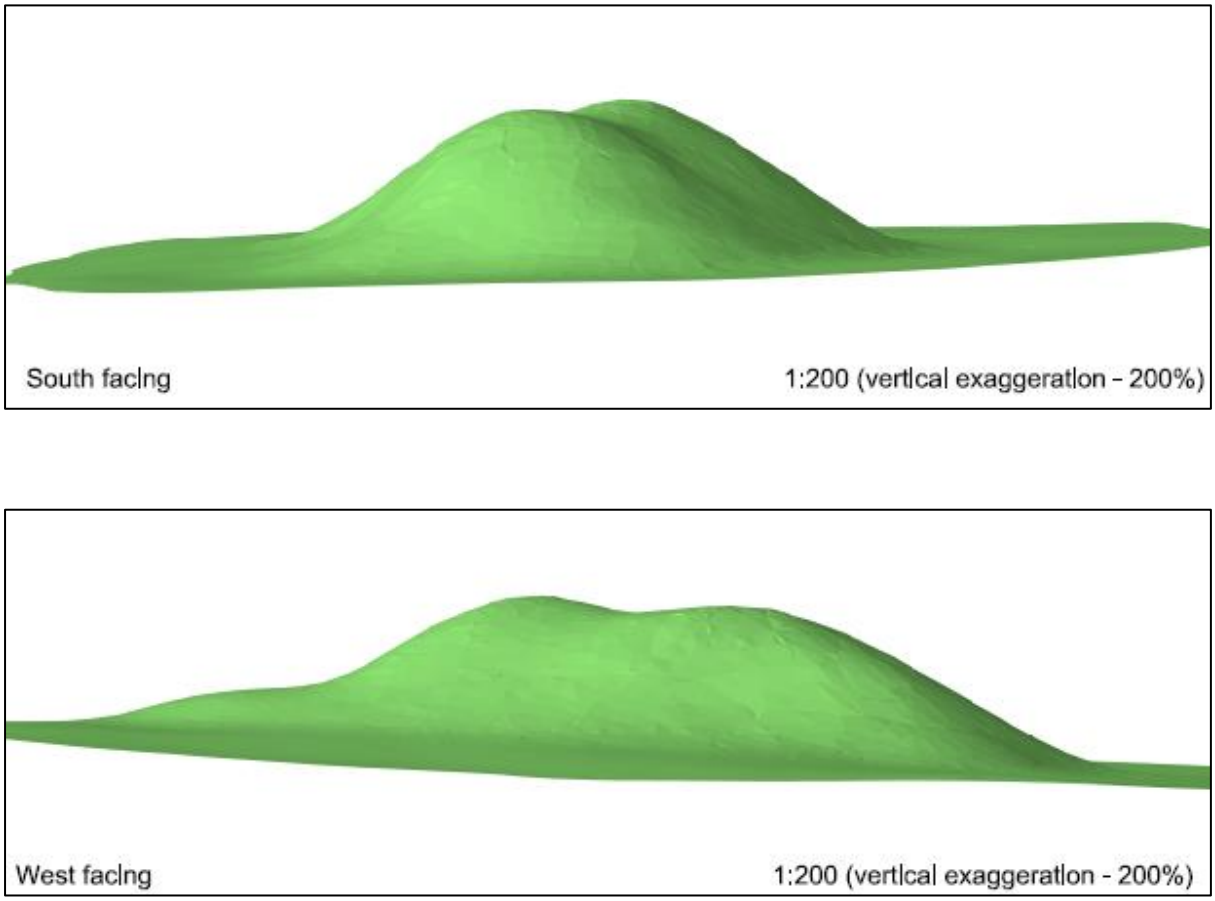


Figure 7 Detailed topographical survey of the mound looking south and west

Test excavation south of the mound identified an oval enclosure, this has now been excavated and a wooden artefact from the basal fill of the enclosing ditch has provided an early medieval date for the site (AD 641-763). A landscape plan was developed for the mound's preservation in open space (Gowen 2009).

Ownership
The monument is located within lands proposed for residential development and will be taken in charge by Fingal County Council once the development has been completed.

Location and appearance
The mound at Portmarnock (DU015-014) is situated on a very gradual north-facing slope in what used to be a large tillage field. From the mound there are extensive views of Portmarnock Bay to the east and Howth Head to the south east.

At the time of archaeological investigation of the mound in 2008 it appeared as an oblong shaped knoll measuring 27m north-south by 14m east-west and approximately 3m in height. However, this is unlikely to represent is original dimensions as it was disturbed in the early 1970s when a local farmer attempted to level the monument during field clearance (Moriarty 2008).

The top of the mound has a noticeable dip near its mid-point which gives the monument a double humped appearance. Moriarty noted that this unusual profile is remarkably similar to the outline of Howth Head and it is possible that the mound was modelled on this prominent landmark. However, it seems more likely that this humped appearance was related to the modern disturbance mentioned above.

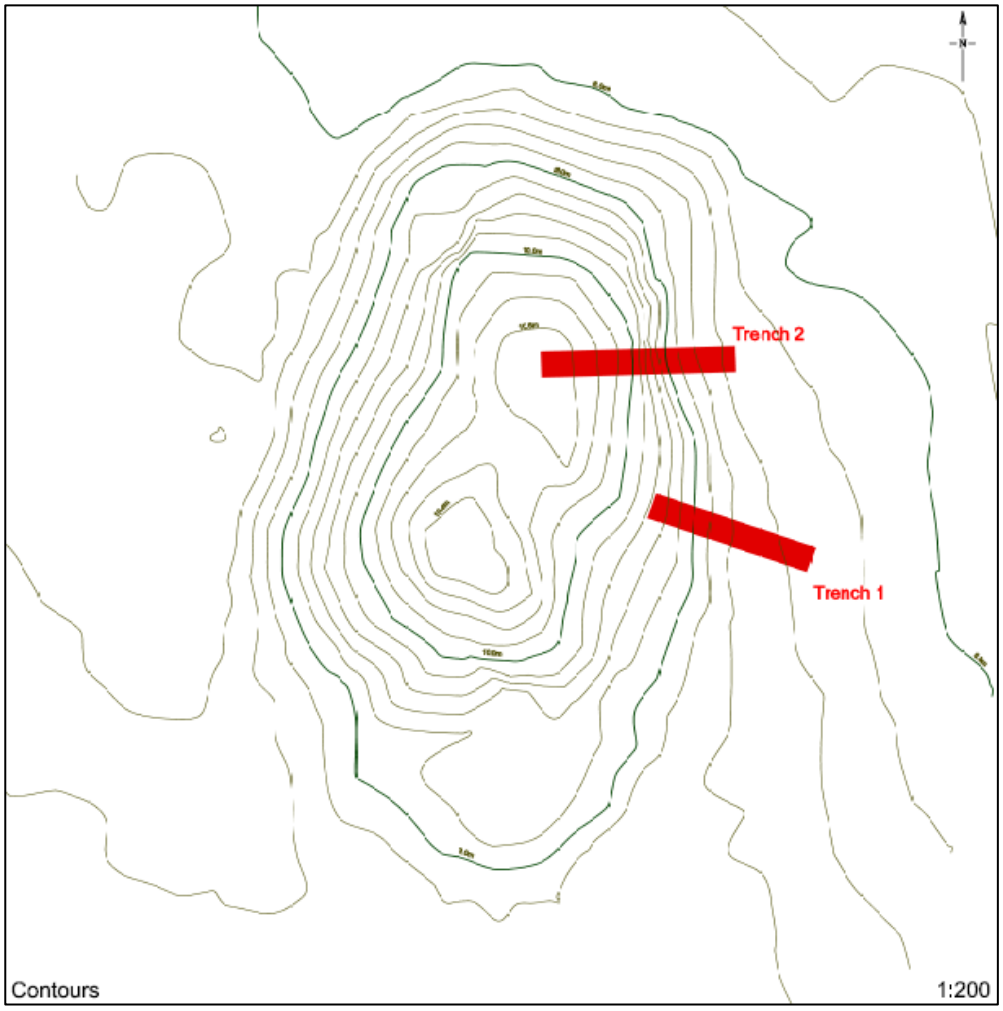


Figure 8 Detailed contour survey and location of the two test trenches

The appearance of the monument has changed considerably over time and this is reflected on Rocque (1756) (Figure 9) and various editions of the Ordnance Survey historic mapping (Figures 10-13).

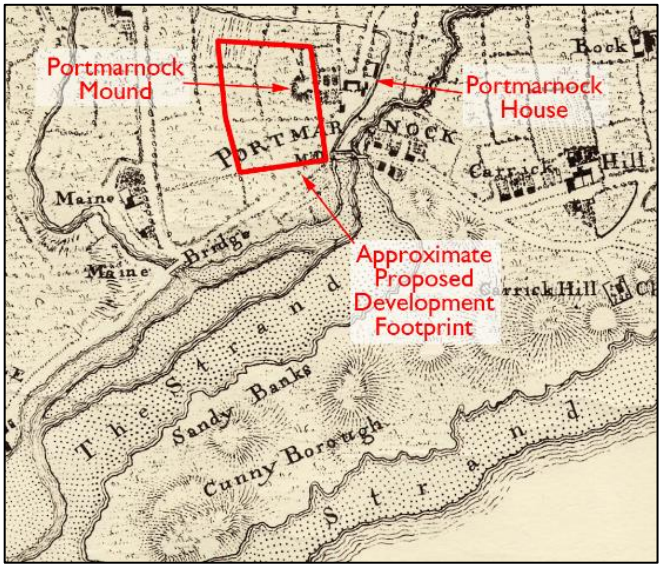
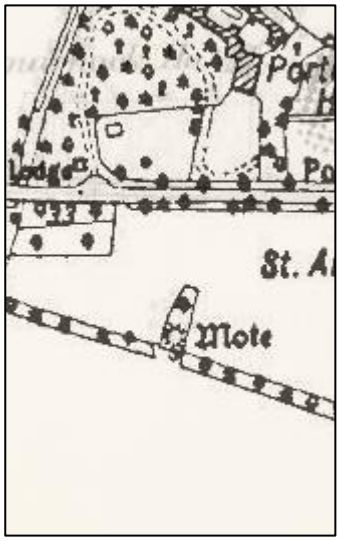
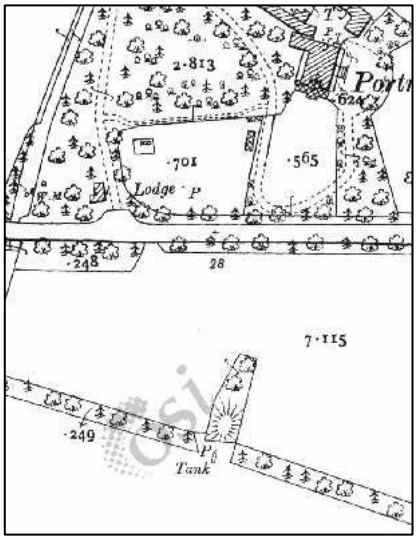


Figure 9 Rocque 1756





Figures 10-12 1st ed OS 6 inch 1837-1842 **Revised OS 6 inch ed** **Revised OS 25 inch ed 1888-1913**

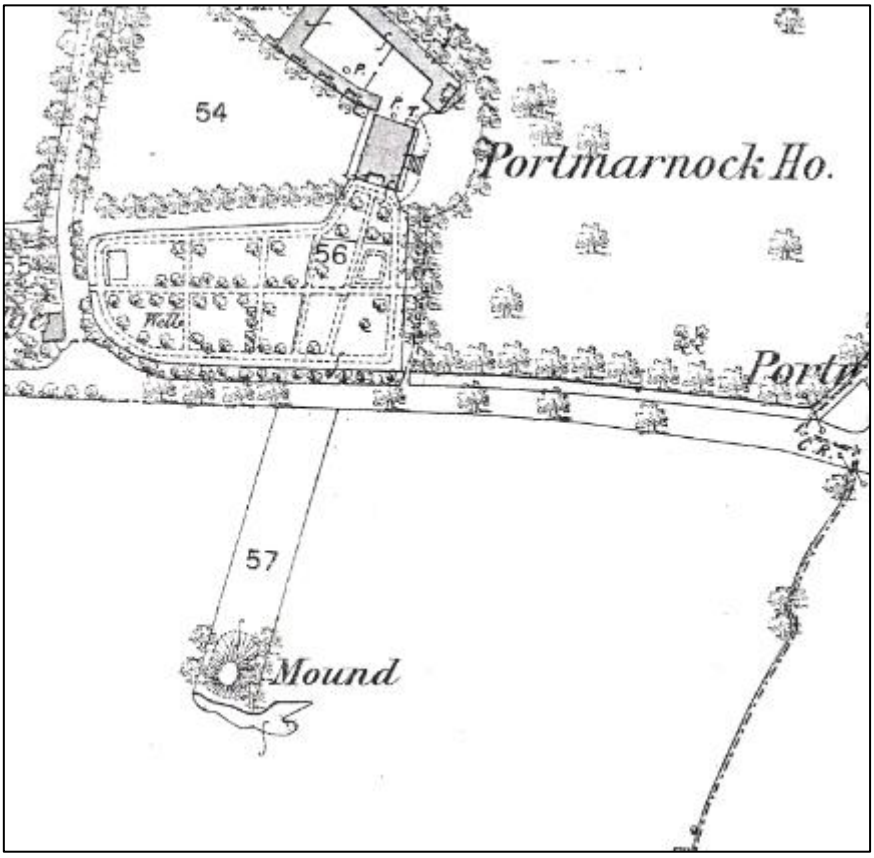


Figure 13 OS 25 inch 1864

Significance

Prior to investigation it was thought that the mound may be a Bronze Age burial monument. The Bronze Age (*c*.2200BC-*c*.500BC) is represented in north county Dublin by a limited range of monuments. The site of a possible barrow (DU015-006) is visible on aerial photographs off Strand Road to the north of Station Road. Another possible barrow site is located to the south west at St Doolagh's (DU015-011) and a number of Early Bronze Age burial sites lie to the south of Baldoyle village. Also through archaeological investigation a Late Bronze Age barrow site was excavated in Clonard/ Folkstown Great, west of

Balbriggan (McLoughlin 2015) and to the south of the proposed development, test excavation confirmed the presence of a barrow in Drumnigh townland (DU015-119) (Walsh 2014b).

While the most recent archaeological investigations of the two enclosures (McLoughlin 2017 a and b) on the lands at Portmarnock have revealed an early medieval landscape, an Early Bronze Age (Cal BC 2434-2051) burnt mound waterhole and an external pit to the excavated 1A enclosure (Cal BC 968-807) provided a Late Bronze Age in date. Stray finds such as two Neolithic axeheads as well as a barbed and tanged arrowhead and hollow based arrowhead artefacts revealed from the two enclosures all indicate a prehistoric presence and activity in the area.

Test excavation in the form of two trenches did confirm that the monument had been disturbed in the recent past but also indicated that the monument was constructed of piled deposits of clay. The intact material contained some shell and occasional sherds of medieval pottery possible suggesting a medieval date for this feature (Moriarty 2008).

Based on the evidence to date the mound could be prehistoric in date or later and is an important landmark within the Portmarnock area. Over time the monument has become associated with the legend of Queen Maedhbh and has great folklore associations. Efforts have been made by antiquarians to correlate specific monuments with sites mentioned in early Irish tales, however this has proven to be a difficult if not impossible task.

The monument is a physical legacy of past human endeavour, it represents a tangible archaeological feature (Plate 4 and 5). The beliefs, myths and legends which have been invested in the monument represent the intangible heritage providing it with a ritual and historic significance.

Cultural Heritage/Folklore

Morris (1939) has suggested that the Portmarnock mound may have been a burial place of Maine, son of Maedhbh and Ailill of Connacht. He based this assumption on a passage in the Metrical Dinshenchas, which describes Maine being killed at *Inber cichmaine*, (www.celt.ucc.ie), a place Morris equates with Portmarnock Bay. As the place of Maine's death is described as being located at the northern end of the inlet, Morris claims that this is similar to where the tumulus/ mound is located in Portmarnock townland at the northern end of what is now known as Portmarnock Bay.

> *At Inber Cichmain, though it be narrow, was slain (a mighty onslaught) far-famed Maine, son of Medb and Ailell, exulting in fury of warlike combats.*
>
> *Him Fergna, generous sob of widowed Findchoem, smote, in his flower, and his grave is in the ground, where the tall stripling murdered him.*
>
> *Dreadful the deed unworthy that Findchoem's son committed, the killing of Maine Andoe, lord of steeds, known over every bright blue-watered plain.*
>
> *Around the Curragh – famous meeting! It was ruin, it was great pity, - befell the loss of mighty Maine, that was not witless, whereby the inlet got its name.*
>
> *There was he slain (harsh the tidings), Ailill Find's ill-omened son, Cichmaine, stout champion against death, when he leapt into the inlet in the north.*
>
> *Or else, this is the true story of the stranger's death by no kindly deed, even the killing of him with the fierce heavy eyes as he hauled the fish out of the inlets.*

However, this was based on a rather dubious comparison between the local topography and the descriptions in the text. Indeed, other scholars, such as O'Hogan, have placed *Inber cichmaine* not at

Portmarnock but instead, further north at Tullyallen, (www.publish.ucc.ie), where the River Mattock enters the Boyne.

The association of the name Maine is likely to have given rise to the place name Maynetown in the neighbouring townland and despite the English suffix 'town' the name is of Irish origin.

The name Portmarnock is derived from *Port Mo Ernoc* or *Ernan*, interpreted as St Mernoc's bank or landing place. Drumnigh appears to be derived from *drom*, a back or ridge, referring to a small hillock. The townland boundary between these townlands is to be maintained and retained insitu within the Portmarnock South Phase 1B.

On the revised edition of the Ordnance Survey map the feature is marked as a 'Mote' (Figure 11) and as a 'mound' on a later 25 inch edition (Figure 13).

Plate 4 2003 Google Earth showing the mound and enclosure

Plate 5 Bing 2016 showing the enclosure and mound, note the thorn tree is visible

6.4 Conservation Plan (Gowen 2009)

Conservation measures were put in place in order to protect the mound within the proposed development area. These measures which were agreed and based on a series of meetings with the National Monuments Service, Fingal County Council, Brady Shipman Martin; landscape architects, the then developer; Sherman Oaks and the investigating archaeology company; MGL led to the development of a conservation plan (Gowen 2009).

The conservation plan was prepared in response to Condition 14 (i) of Planning Ref F07A/0947:

14(i) The applicant shall prior to commencement of any works on the site submit to the Planning Authority and the Department of Environment, Heritage and Local Government a conservation plan for the archaeological monuments on site.

The mound is to be preserved in situ as Class II open space within the development. It is to be retained within an area of circular open space some 70m in diameter. This allows for a buffer are of 20 metres from the mound to be retained and protected from development. It is within this buffer zone that planting etc can take place as this will minimise any impact on the below ground remains. This approach has been agreed with the National Monuments Service of DEHLG (DCHG).

The mound is presently protected from the rest of the development lands by a palisade fence and currently there is no access to the monument (Plates 6 and 7).

Plate 6 February 2016 – Palisade fencing located around the mound

In addition to the above ground remains of the mound, the northern extent of the excavated enclosure (DU015-014001) (Licence 16E0613 Phase 1B, Area 3) has also been preserved in situ as it extends into the conservation zone (Figure 14 and Plate 7). The remaining portion of the enclosure remains unexcavated and below ground and measures an estimated 45m-50m in length. The topsoil sealing the ditch is between 0.4-0.5m deep in this area and the width of the ditch as it enters the conservation area is 5m wide to the west and 4.7m wide to the east.

All development and landscaping works will now have to put measures in place to protect this in-situ archaeological feature and to explore ways of making this below ground archaeological feature legible and accessible to the public through signage and the choice of landscaping materials. The use of contrasting hard and soft landscaping materials could be used to demarcate the linear extent of the below ground feature and assist in the presentation of the below ground remains.

6.5 Conservation Measures

An integrated design approach incorporating concepts from the architects, landscape architect and the knowledge gained from the archaeological surveys and investigations provides an opportunity to creatively present of Fingal's historic past, to reinforce the identity of the area and to enhance the civic space. The objective is to retain and promote the significance of the Portmarnock mound through interpretation and appropriate presentation while facilitating public access adding to the social and cultural infrastructure of Fingal.

There is an opportunity to provide for the most effective presentation of the monument and put in place long term management mechanisms of the above and below ground remains so they do not become forgotten or lost within the development of these historic Portmarnock lands.

As per the comments received from the NMS (23rd October 2017) all plans for the presentation and interpretation will be agreed with the Department in advance of finalising the works and will be agreed with the County Archaeologist for Fingal County Council.

Plate 7 April 2017 –the excavation of enclosure DU015-014001 adjacent to the mound

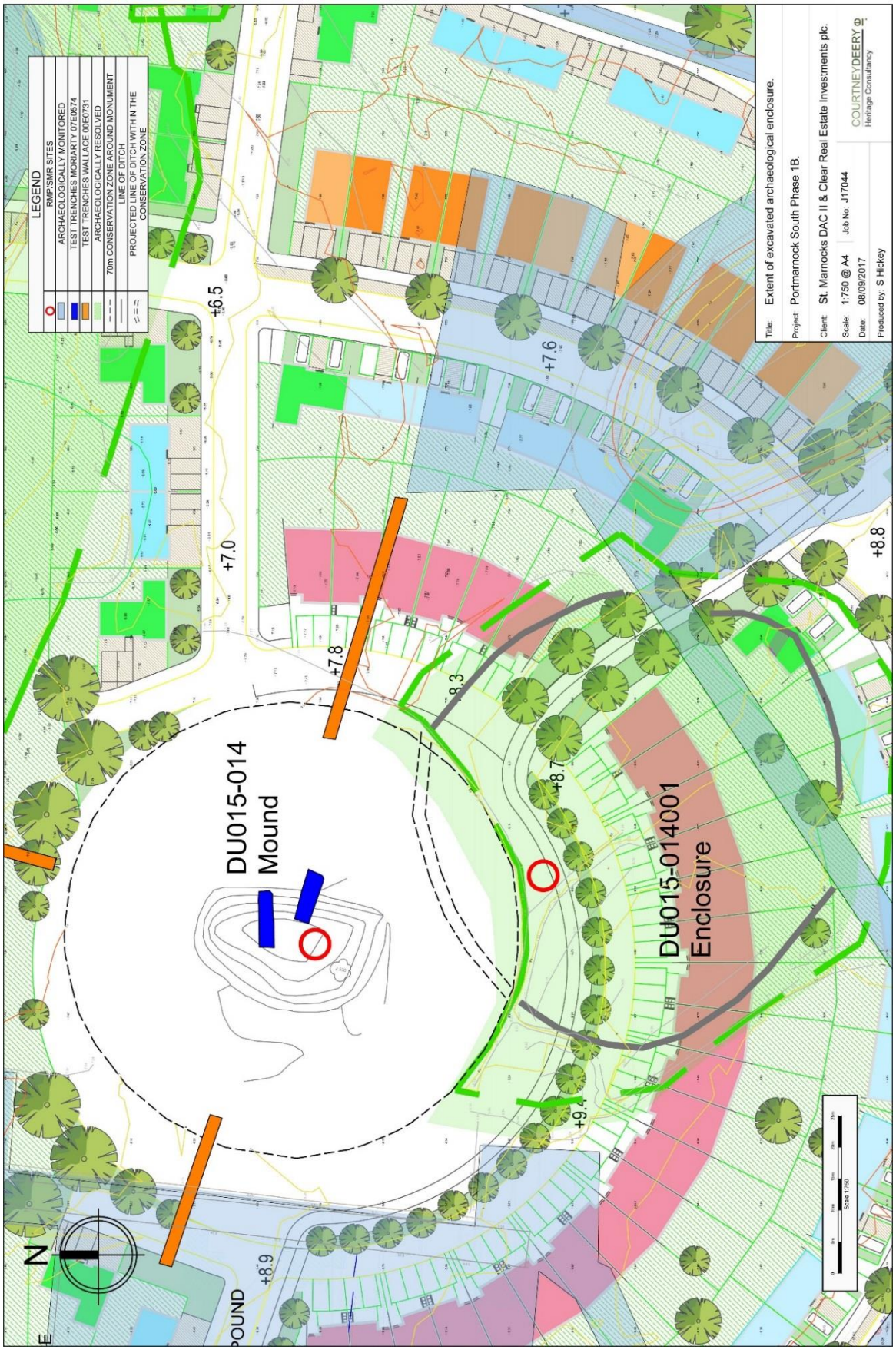


Figure 14 Conservation Area surrounding the mound and estimated extent of subsurface enclosure shown on an indicative background

6.6 Outside the Application Lands: Double Ditched Enclosure

Following an analysis of aerial photography of the overall development lands (Plate 3), a curvilinear feature was noted located to the south east of the Phase 1A area (and to the south east of the application lands), (Appendix 5). Given the recent subsurface findings and that archaeological features can be potentially masked by soils along with the knowledge that archaeological deposits can be buried deeply, it was proposed to test excavate this feature. This approach was discussed and agreed with the National Monuments Service of the DCHG.

Test excavation confirmed the presence of a large double ditched enclosure, from which no dateable artefacts were recovered (McLoughlin 2017b). The inner enclosure measures 39m north-south x 30m east-west and the outer enclosure 106m north-south x 87m east-west. Animal bone and shell recovered from the test sections indicate that the enclosure is similar to the other enclosures identified in the same field (the enclosure excavated under licence 16E0101 (i.e. Area 6) and the SMR site DU015-014001 excavated under licence 16E0613 (i.e. Area 3). A further sub-surface ditched enclosure in Maynetown townland to the east was tested in 2007 and contained shell, animal bone and organic remains (Moriarty 07E0574). Charcoal from the basal fill in the Maynetown enclosure ditch returned a date in the early medieval period (AD 687-887). Initial dating from the other two enclosures also places these sites within a similar timeframe (AD 686-876, 16E0101 and AD 641-763, DU015-014001).

Based on the similarity of fills in the double ditched enclosure to the other nearby enclosures it is likely to date to the early medieval period.

This newly revealed enclosure site is one of a number of below ground enclosure sites revealed through aerial photography and geophysical survey within the wider Portmarnock area and together these subsurface sites suggest an intensively settled area during the early medieval period. The inhabitants would have been able to exploit the nearby coastal resources and the well-drained and fertile land would have been attractive for both pastoral and arable farming.

Similar to the other newly revealed archaeological sites, namely the excavated enclosure (Area 6) and the SMR site (Area 3) (Plate 1), this feature was masked by natural soils (redeposited natural) making detection difficult.

The enclosure has been identified as largely located to the west of the townland boundary between Drumnigh and Portmarnock. However the townland boundary may incorporate the eastern extent of the site. Equally a small portion of the site may extend beyond the townland boundary to the east. Further investigation is required to determine to the overall extent and proposed mitigation measures are discussed in Section 5 of this report. This phase of development will not impact upon the site.

A report detailing the results of the testing of this newly revealed site and a Monument Report Form have been submitted to the National Monuments Service as required under the licensing conditions. As per the comments received from the NMS (23rd October 2017) (Appendix 2) protective fencing surrounding this site will be to the specification of the statutory authorities.

Analysis of aerial photography for additional crop mark features within the application development lands has indicated no further enclosures or curvilinear enclosing elements, however linear cropmarks in Maynetown townland were subject to additional test excavation (Licence No. 17E0597) and were revealed to be a result of land management practices and modern boundaries (discussed in section 7.9 and Appendix 4) (location shown Appendix 5).

7. Regional Wetlands Area, the Surface Outfall Pipe and Outfall

7.1 Prehistoric Period

Coastal and estuarine areas have an inherent archaeological potential and often been found to contain numerous archaeological monuments and finds dating from all periods. There is an abundance of evidence to suggest that Dublin's coastline generally – both mainland and islands – was used by Mesolithic people, hunter-gatherers who were exploiting maritime resources. At a time when Ireland was densely wooded, boats provided the most efficient means of transport into the interior, via rivers and lakes, while coastal and island hopping would have been the easiest way to communicate in coastal areas. The coastal area of north County Dublin has produced relatively large quantities of flints, many of which may date to the Mesolithic period (c. 7000–5000 BC). Mitchell discovered Mesolithic (and Neolithic) activity has been noted at the raised beaches and middens at Sutton (Mitchell 1972 and 1990, Stout and Stout 1992) and at Portmarnock Football Club (Keeling and Keeley 1994). Analysis of lithics collected from Lambay Island also revealed definite evidence for the use of the island in the Late Mesolithic period, with strong indications that it was used from the Early Mesolithic (c. 7000 BC) onwards (Dolan & Cooney 2010).

The evidence for the Neolithic period (c. 4000-2500 BC) paints a similar picture, with both recorded and excavated sites demonstrating that Neolithic activity was widespread in the Dublin coastal zone. There is a significant body of Neolithic (c. 4,000BC– c 2,300 BC) material from north County Dublin. Evidence includes a large, well-preserved portal tomb at Howth Demesne, at the foot of Muck Rock; excavations at Feltrim Hill, revealed Neolithic ceramics and worked lithics, though no apparent remains of structures. This whole stretch of coast has a clear view of Lambay Island to the east, where excavations have revealed areas of Neolithic activity associated with stone axe and flint tool manufacturing, some of which was of extremely high quality (Cooney 2000). The highest points of Lambay Island also have at least two cairns, mounds of stone that often cover burials, which may also date to the Neolithic.

While there is no direct evidence of Bronze Age or Iron Age maritime activity in the foreshore area of Portmarnock, archaeological sites dating to these periods are recorded inland, confirming the presence of a local population that would have utilised this coastal zone. One such example is a ring-ditch that was identified in Drumnigh townland during geophysical survey and confirmed by archaeological testing (SMR DU015-119). There is also a possible barrow, or ring ditch, visible on aerial photographs off the Strand Road in Portmarnock (DU015-006). In the wider landscape, another possible barrow site or ring-ditch is recorded at St Doolagh's to the southwest (DU015-011), while several Early Bronze Age burials are recorded at Strand Road in Baldoyle (DU015-019) and in Sutton (DU015-022 & -023).

The recorded mound in Portmarnock (DU015-014) (section 6.3) may originate in the prehistoric period (Wallace 2000a) (Mc Loughlin 2017), limited testing previously suggested an alternative association with the medieval settlement to the north (see below). Mayne (also known as Maine or Cichmaine), the son of Maedhbh and Ailill of Connacht, is said to have been killed here by fishermen; his burial ground is described as being at the northern end of *Inbhearr Cichmaine*, the inlet or bay of Cichmaine, where he was killed Morris (1939, 181ff, cited in RMP file). This location has been associated with the mound, which is located roughly at the northern end of what is now known as Portmarnock Bay.

There is a note on OPW maps from the 1980s that there may have been a *fulacht fiadh* in the field to the east of the Portmarnock mound (DU015-014), although this appears to have been removed by ploughing (OPW files). The *fulacht fiadh* or burnt mound is the most common prehistoric monument in Ireland, with over 4500 known sites and the number is rising all the time. They consist of a low mound of burnt stone commonly in horseshoe shape and are found in low-lying marshy areas or close to streams. The presence of *fulachtaí fia* is often indicative of Bronze Age seasonal communal activity in river valleys, lakeshores and boggy ground; scientific dating of a randomly excavated sample has shown a predominance of second

millennium BC dates for their use (Brindley & Lanting 1990). There is no agreement that burnt mounds were cooking places, although it does seem that they were used to prepare large quantities of boiling water and that they were repeatedly used, resulting in a large mound of heat shattered stones accumulating. Other theories for the use of these sites include bathing, saunas or sweathouses, washing or dyeing large quantities of cloth, the preparation of leather and brewing.

Fulachtaí fia are commonly found in groups of two or more, and archaeological testing identified two in the large field between the recorded mound and Coast Road, c. 160m west and c. 245m southeast of the proposed outfall location. A burnt mound, trough and pit were found 225m southeast of the mound (Licence No. 04E1415); while this may be the remains of the ploughed-out *fulacht fiadh* mentioned in the OPW notes, it might also be an entirely new site. A second burnt mound was found at the eastern end of the haul road associated with Phase 1A Development works (Licence No. 16E0101). The presence of these two sites suggests that during the prehistoric period, this field may have formed part of the salt marshes to the east and that the land was subsequently reclaimed.

7.2 Early Medieval Period

The early medieval period saw the development of a mixed-farming economy managed by kings, nobles and free farmers. There was an increase in settlement during the early medieval period (*c*. AD 500–AD 1200), and the ringfort, otherwise known as the 'rath' or 'fairy fort', is the best-known native monument of this period (Stout 1997). Ringforts are essentially enclosed farmsteads dating to the early medieval period. The majority of these sites are univallate, surrounded by one ditch and bank, but some are surrounded by two and, to a lesser extent, three enclosing ditches and banks (known as bivallate and trivallate raths respectively). Another morphological variation consists of the platform or raised rath – the former resulting from the construction of the rath on a naturally raised area while the latter's height resulting from prolonged occupation over many centuries. Many raths are circular or oval in shape but they can occur as D-, pear- and sub-rectangular-shaped enclosures. Ringforts were not simple isolated homesteads, and should be considered within their contemporary settlement landscape, which would have consisted of unenclosed settlements, farms and fields, route ways and natural resources. Stout (1997) has shown that the majority were occupied from the beginning of the 7th until the end of the 9th centuries, covering a 300-year period. Raised and platform raths have been shown to be slightly later in date and were constructed between approximately the mid-8th and mid-10th centuries AD.

That being said, they are a site type that is relatively scarce in the archaeological record for County Dublin, partly because of the urban or suburban nature of much of the county, but also because of the intensive agricultural practices carried out in north County Dublin, which has destroyed surface traces of these sites. Archaeological investigations have demonstrated that rather than being scarce, there is a prevalence of enclosure sites – at least some of which date to this period – in the agricultural land to the south and southwest of Portmarnock village. The survival of destroyed enclosures sub-surface has been demonstrated in the surrounding townlands, where geophysical survey and testing have identified the remains of several possible early medieval enclosed settlements, some of which are quite substantial in size (e.g. SMR sites DU015-117 & DU015-134 in Drumnigh townland).

Another is the enclosure site in Maynetown townland (DU015-055), the ploughed-out remains of which were previously thought to be a substantial late prehistoric enclosure. Geophysical survey, carried out in 2000, identified the existence of the enclosure and also revealed responses indicating an unusual entrance feature of two splayed linear elements leading to the south east side of the enclosure ditch (Shiels *et al.* 2000). These have been interpreted as a formal approach or avenue to the enclosure. This linear avenue is not typical of enclosures generally and makes this particular monument very unique. A portion of the approach was later confirmed during archaeological testing (Wallace 2000b) and was subject to further testing in 2007 (Moriarty 2007). During test excavation the enclosure ditch was found

to be substantial, in spite of its eroded state, and measured approximately 5m wide and 1.2m deep. Finds recovered from the ditch included butchered animal bone and a ferrous nail shank. A charcoal sample from the base of the ditch was sent for radiocarbon dating, which returned an early medieval date for the enclosure site (Moriarty 2007).

More recently, three large early medieval enclosure sites were identified on the south side of Station Road in Phase 1A and 1B Development lands, c. 435m west of the foreshore (to the south and southwest of the medieval settlement previously uncovered along the south side of Station Road; see below). Two of these sites have now been excavated and post-excavation analysis is ongoing. Preliminary results indicate that these two sites are contemporary in date (7th / 8th century AD); archaeological testing of the third enclosure site suggests that it is may also be early medieval in date.

The northernmost of the three enclosures is located immediately south of the recorded mound DU015-014 (the site was previously thought to be a bailey associated with the mound and was designated as SMR DU015-014001). The sub-circular enclosure had a maximum external diameter of 77m east-west by 70m north-south, with an entrance to the east. Finds recovered from the ditch during the excavation include early medieval pottery imported from the eastern Mediterranean (rare in Ireland and dated to c.450-600AD), a wooden dish preserved in the base of the ditch, stone tools and worked antler artefacts; and a wooden hoop from close to the bottom of the ditch was radiocarbon dated to AD 641-763. A huge volume of animal bone was recovered from the ditch and this includes whale/cetacean bones. Cereal drying (kilns) and metalworking activity were evident on site and there was one human burial (adult, probably male) in the interior of the enclosure (Licence No. 16E0613; McLoughlin 2017b). The second excavated enclosure was located c. 125m to the southwest. It was a substantial sub-rectangular ditched enclosure (with a closely aligned internal ditch) measuring 50m by 48m. A wooden hoop found at the bottom of the external ditch returned a radiocarbon date of AD 686-876, providing a firm early medieval context for the site (Licence No. 16E0101; McLoughlin 2017a).

The third enclosure was initially identified through aerial photographic analysis and is located c. 200m south of the sub-circular enclosure and c. 150m southeast of the sub-rectangular enclosure. Test excavation confirmed the presence of a large double-ditched enclosure, comprising an oval inner enclosure (39m north-south by 30m east-west) contained within a much larger sub-circular outer enclosure (106m north-south by 87m east-west). Animal bone and shell recovered from the test sections indicate that the enclosure is similar to the other two enclosures, and although no dateable artefacts were recovered during the testing, it is probable that this site also dates to the early medieval period (McLoughlin 2017).

7.3 Viking Activity

By the early historic period shipping routes had been established along the eastern coast and the arrival of the Vikings in the late 8th century saw the establishment of Hiberno-Norse settlements along the coastline. This area lies within the parish of Portmarnock in the barony of Coolock, within the bounds of Fingal, the regional name applied to the northern half of County Dublin; according to Ball (1920), the name Fingal is used to denote the district into which the Vikings made predatory excursions. Fingal was in close proximity to the Viking settlement at Dublin, and the significant Norse influence on Fingal can be seen from both Gaelic place-names, such as *Fine Gall* or 'territory of the strangers' and *Baile Dubh Gaill* (Baldoyle: 'town of the dark stranger').

According to Hurley, a Viking harbour is recorded in the vicinity of Baldoyle, with the early Viking settlement located further inland than the present-day village, as the seashore was at a higher level then it is today (Hurley 1983). Although there has never been any definitive evidence for this, archaeological excavations undertaken at a rectangular cropmark site in Baldoyle village in 2014 provided a radiocarbon

date of 9th / 10th century for a cereal grain retrieved from the bottom of one of the features. This implies that there was at least some level of settlement activity there during the Viking period. There is also evidence to suggest that a Norse community lived on Lambay, at least on a temporary basis, using it as a base from which to attack the mainland (Cooney 1993).

According to the poet John O'Dugan, Fingal came under the rule of Mac Gillamocholmog, who controlled the lands south of Dublin before the arrival of the Anglo-Normans in the late twelfth century. Before the battle of Clontarf, Brian Ború is said to have burned Fingal and the district of Howth, and some years later, during a predatory excursion into Fingal, the region is said to have been burned from Dublin to the River Delvin (Ball 1920). Viking rule and settlement influenced the region for over two hundred and fifty years, from the ninth to the twelfth centuries. Bradley suggests Viking Dublin should be looked at as part of 'the rurally settled area of the Dublin Scandinavians' rather than as a number of successful trading settlements strategically located along the coast (in Simms and Fagan 1992).

7.4 Medieval and Post Medieval Period

From the 12th century, the Anglo-Normans, with a keen eye for good agricultural land, superimposed the manorial system of landholding they had acquired from England and the Welsh borderlands onto their newly conquered territory in Fingal. The majority of Anglo-Norman manors were on, or close to, rivers, and, preferring established sites with an existing infrastructure, the new invaders also took over established ecclesiastical sites. Portmarnock was one such pre-Norman ecclesiastical site, becoming a manorial village when taken over by the Anglo-Normans in the 12th to 15th centuries. While not of ecclesiastical origin, Baldoyle subsequently developed into a manorial village after the arrival of the Anglo-Normans.

Archaeological evidence for the medieval settlement that once existed at Portmarnock was uncovered during archaeological investigations in 2008, c. 45m north of the recorded mound DU015-014 and c. 220m northwest of the proposed outfall location. The excavation identified defined property plots, the foundations of rectangular houses and an associated medieval roadway (SMR DU015-136 & -137; the settlement appears to continue to the east, in an area not yet archaeologically resolved, McLoughlin 2017). A large assemblage of artefacts was recovered during the excavation, including in excess of 2,000 sherds of medieval pottery, mainly locally produced Leinster cooking ware and Dublin-type wares, as well as large numbers of metal objects. Evidence for food waste included large amounts of butchered animal bone as well as quantities of seashell (cockles, muscles, oysters, periwinkles, razor shell, etc.) and carbonised grains.

There is also some recorded coastal activity dating to this period within the environs of the proposed outfall which consists of a tidal mill (DU015-015) and a number of shipwrecks. Water-powered mills have played an important role in Irish industry since the early medieval period.

Two tidal mills are recorded in the possession of St Mary's Abbey in an inquisition taken in 1541 (de Courcy 1996), one of which is probably represented by the remains of the old mill at Portmarnock (DU015-015).There are only a few tidal mill recorded pre- sixteenth century, while there is evidence that tidal mills began to be built again in the seventeenth century but their numbers remained small until there was an increase in their construction during the nineteenth century (Cronin 2010).

These mills would have formed peripheral lands of St Mary's Abbey in Dublin City; the abbey itself was located around what are now Mary Street and Abbey Street. Following the dissolution of the abbey its lands and possessions were initially granted to the Early of Ormond and eventually came into the ownership of Walter Plunkett in 1663 when the landholding comprised 383 acres and one mill. According

to Flanagan (1984, cited in the RMP files) there was a tidal mill north of the river, at the site of a mill shown on Rocque's Map (1756).

The following extract (D'Alton 1838) provides a description of the tide mill at that time:

' *the hamlet of Portmarnock with the venerable mansion-house of the Plunketts peering from its ancient woods, on the brink of a nameless river that rises above Kinsaly, winds by its old church, and here empties itself into the sea. On the opposite bank is a mill worked by a stream and by an arm of the sea. It is, however, wholly useless in summer and even during a great potion of the winter, although a very trifling expenditure would enhance its advantages to the neighbourhood*.'

A further reference to a mill in this area is made in 1920 when a mill building is noted as being *'unroofed and much dilapidated by the storm of 1903*'.

Joyce in his account of the coastal area leading to Portmarnock states that just beyond where the Mayne River joins the sea "*We next come in view of the old mill of Portmarnock, a well-known landmark, unroofed and much dilapidated by the storm of 1903. A mill stood here for hundreds of years past, references to it being found in records so far back as 1663, when it formed portion of the property of the Plunkett family* (Joyce 1920 from http://www.chapters.eiretek.org/index.html). Unfortunately no description of the mill or its form was given. It is unclear if the mill described by Joyce (1912) occupies a similar location as that of the one noted in the historical sources cited by De Courcy (1996).

In 1799 Thomas Dickinson of Drumnigh took a lease of the mill and a year later knocked it down, rebuilding to three storeys. By 1867 the mill was unused as it had no water power (Ahern 2013).

The only surviving structural remains which may represent a mill structure in the vicinity of Portmarnock Bridge consist of a grass covered rectangular platform at the edge of the estuary located at the site of the Corn Mill shown on the 1st edition OS six-inch map (Figure 17), and located to the 100m northwest of the proposed outfall (Plate 20).

According to the archaeological record (ASI (online) 2017) the remains of the mill comprises the footing of the mill building walls, the sluice gate, 19th century mill race and fragmentary remains of the walls revetting the mill pond and inlet. The development of water management practices within Portmarnock Bay (which is known historically as the Strand, Rocque 1756) is charted on the historic maps and discussed further in section 7.5 of the report.

The Fingal Coastal Architectural Heritage Project conducted by John Cronin & Associates for Fingal County Council and The Heritage Council in 2010 suggested that Portmarnock Bridge (FCAS Ref No 45) and the Portmarnock Tidal Mill (site of) (FCAS Ref No 46) may be considered for future listing in the Record of Protected Structures (Cronin 2010).

7.5 Cartographic Sources

7.5.1 Rocque, 1756, *An Actual Survey of the County of Dublin* (Figure 15)

The approximate site location for the proposed outfall is at the northern end of 'The Strand', a stretch of marshy mudflats along the estuary of the rivers Sluice and Maine, to the north of the road from Baldoyle. A bridge crossing the Sluice river and a second small watercourse is depicted to the west / northwest, beyond which a mill is depicted (annotated 'Mill' on the map; the recorded tidal mill DU015-015). The smaller watercourse is suggestive of a mill-race, perhaps utilising an existing stream tributary. Portmarnock village is represented by a small cluster of five houses on the north side of the bridge. The Portmarnock estate is located south of the river and stream and east of the proposed site, with the house orientated to take in the sea-view to the east. Landscaped gardens are laid out on the south side of the house, with a short north-south aligned avenue connecting to the recorded mound (DU015-014), presumably incorporating the existing monument as a landscape design feature.

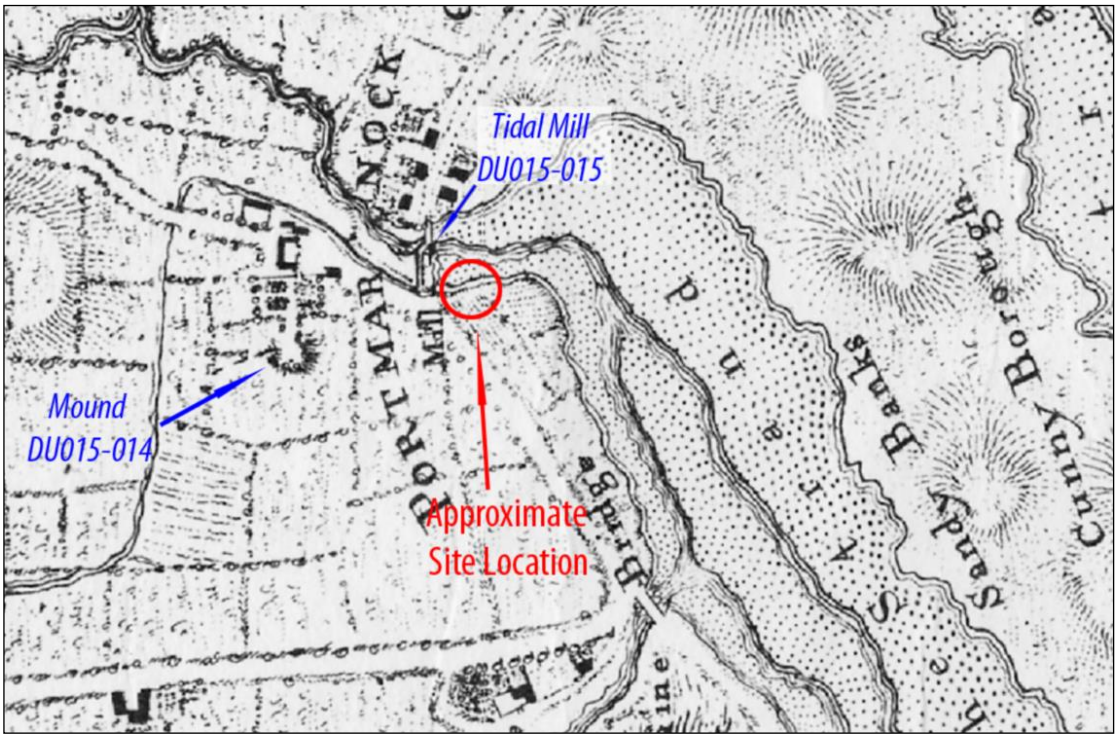


Figure 15 Rocque's map, 1756

7.5.2 Taylor, 1816, *Map of the Environs of Dublin* (Figure 16)

Taylor's map depicts the estuary of Portmarnock and its watercourses, though its scale and schematic nature renders further analysis difficult. In the vicinity of the approximate site location there is a slight kink in the road and a small rectangular roadside structure. To the east of this roadside structure there is a label 'Pound' which may refer to the structure itself or to the area immediately adjacent to it. To the north of the approximate site location a manmade key-shaped projection into the estuary is shown; this may be associated with the tidal mill. Within the lands currently under development at Portmarnock and where the regional wetlands will be there are no features recorded on this map.

Figure 16 Taylor's map, 1816

7.5.3 *First edition OS six-inch map, 1837*

Portmarnock Bridge is annotated to the northwest of the proposed site location on the first edition OS six-inch map of 1837 (Figure 17), crossing both the River Sluice and two smaller watercourses to the southwest. An access road diverts from the main road just north of the bridge and leads a short distance south to a Corn Mill (the recorded tidal mill DU015-015), continuing southwards to a bank that forms part of the water management system. A sluice gate is marked in the approximate location of the proposed outfall, at its northern end, where it controls the watercourse canalised between the bank and the Baldoyle / Portmarnock coast road (millrace).

Two small plots, each containing a structure, are depicted on the north side of the side coast road, to the south of the sluice gate. The adjoining area of marsh-land is named as 'Murragh' on this map edition. On the west side of the Portmarnock estate, the Dublin-Drogheda railway line is depicted and annotated as 'in progress'. A 'New Road' (the present Station Road) has been constructed through the former grounds of Portmarnock Demesne, running east to meet the coast road. It separates the gardens of Portmarnock House from the mound to the south, where the earlier avenue is no long shown. The lands within the vicinity of the regional wetlands development are shown to be divided into fields at this time.

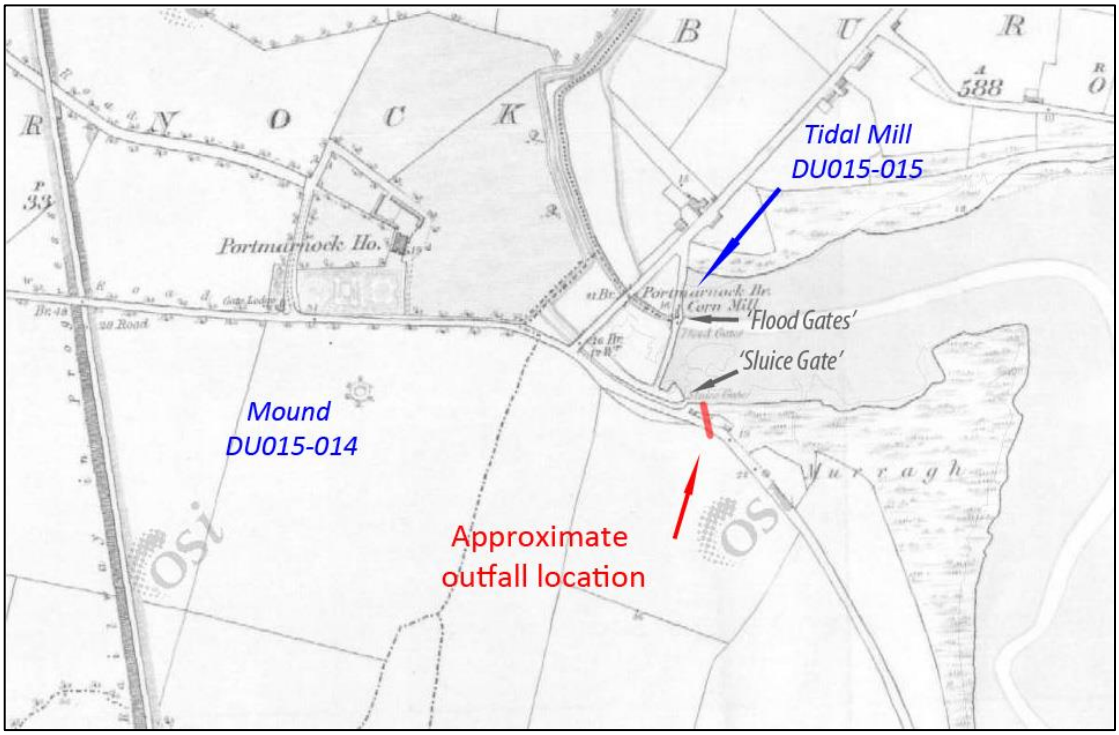


Figure 17 First edition OS six-inch map, 1837

7.5.4 *First edition OS 25-inch map, 1864 (Figure 18)*

The scale of this map provides a more detailed account of the extensive water management in this area. The sluice gate indicated on the earlier six-inch map is now annotated as a flood gate and a channel is depicted running through the mudflats to join the principal mill-race where it flows out into the estuary. A second flood gate is indicated to the north of this, at the mill, controlling the flow of water from the mill-race and mill-ponds that are shown either side of the bridge. The mill-race itself is formed by the River Sluice, with several diverted watercourses helping to control the flow of the river water (one of which diverts along field boundaries on the north side of Portmarnock House).

The mill is named 'Old Corn Mill' on this map edition (DU015-015). The name of the house to the north, located on the main road, is 'Milbridge House'; this suggests a long connection between this crossing of the river and the mill, and that the bridge was once called 'Mill Bridge' (rather than the present Portmarnock Bridge). There are few other notable changes in the immediate environs of the proposed outfall site, though the nearest of the two small structures at the side of the Baldoyle-Portmarnock road is no longer depicted. Of interest in the wider landscape is the unusual narrow strip field that encloses and runs north / northeast of the recorded mound (DU015-014); this may follow the alignment of the landscape design feature shown on Rocque's map, fossilising the earlier avenue. An unusually shaped pond is depicted at the southern end of the mound. The lands within the vicinity of the regional wetland development is shown to be divided into fields at this time.

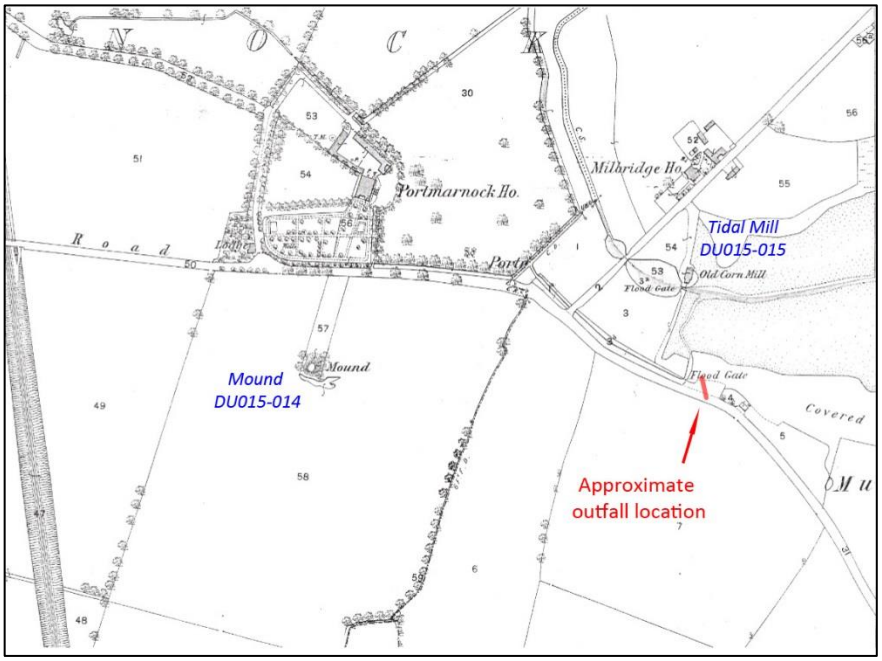


Figure 18 First edition OS 25-inch map, 1864

7.5.5 *Revised edition OS 25-inch map, 1909 (Figure 19)*

The alignment of the road appears to be unaltered from the 1864 edition, as does the boundary associated with the watercourse. The watercourse discharges to the north of a 'Sluice'. The area immediately to the north of the watercourse is shown as marshy ground with 'mud' being noted in places. There is no indication of any structure at the site of the 'Old Corn Mill' and no other significant changes since the previous edition. The field divisions have been removed from the vicinity of the regional wetland development.

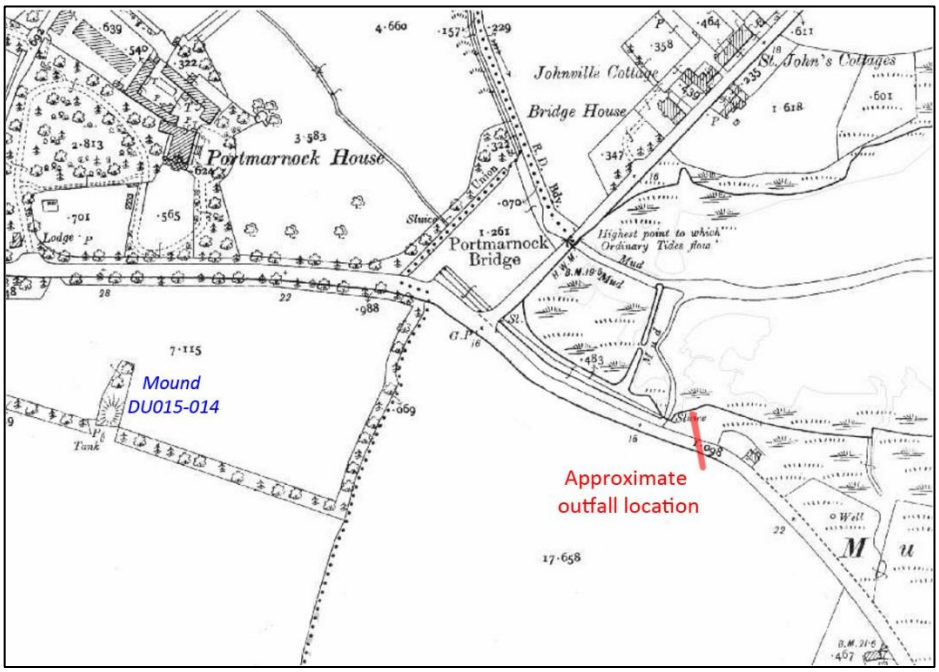


Figure 19 Revised edition OS 25-inch map

7.5.6 *Revised edition OS 25-inch map, 1936-7 (Figure 20)*

This map edition shows a similar layout of road, watercourse and boundary as in the 1909 map. A 'sluice' is located at the southern end of the watercourse. No structures are shown in the immediate vicinity of the proposed location of the outfall. The surrounding coastal area is noted as marshy with 'mud' in places. The remains of a structure are depicted at the site of the 'Old Corn Mill'; this area appeared to be inundated by the high tide on the 1909 OS map, when nothing is shown at this location. The field divisions have been removed from the vicinity of the regional wetlands development and three structures, St Joseph's, St Anthony's and an unnamed structure are now present to the north of the proposed outfall pipe and the regional wetlands area.

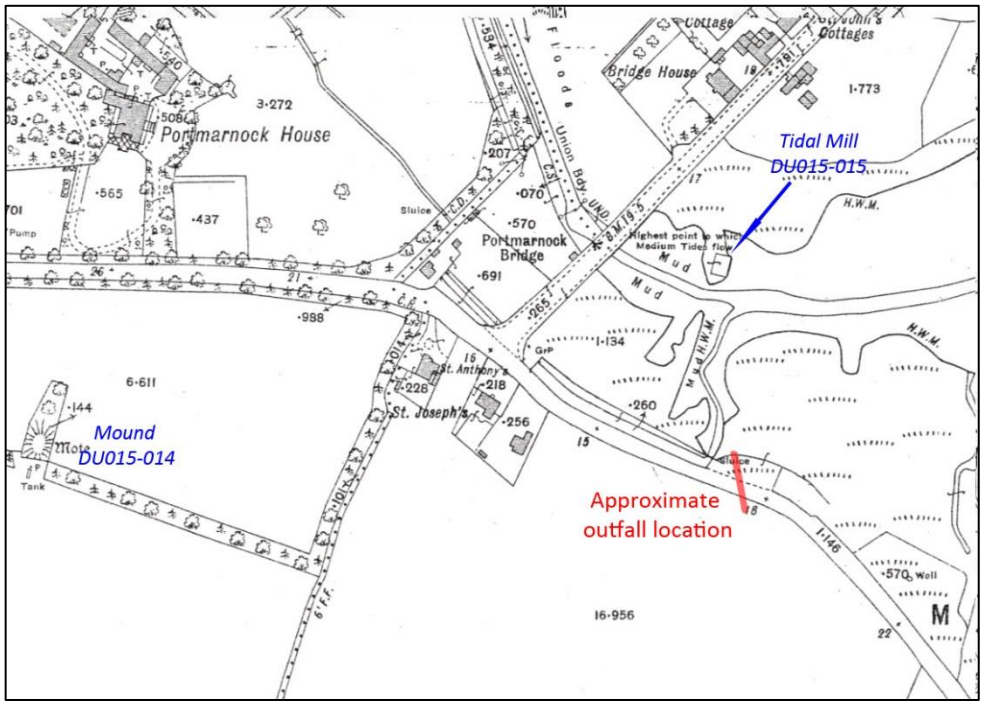


Figure 20 Revised edition OS 25-inch map, 1936-7

7.6 Shipwrecks Recorded In The Vicinity Of Portmarnock

In 1822, the Preventative Water Guard, the Riding Officers and the Revenue Cruisers were amalgamated to form the Coast Guard. While this newly formed body would later be praised for its success in stamping out smuggling, it was changes in legislation and taxation in the mid-19th century that brought the 'trade' to an end by rendering it no longer profitable (Bolton 2008). Though initially focused on ending smuggling, the Guard gradually adopted extra duties, including taking responsibility for shipwrecks by safeguarding cargoes and vessels from looters. Shipwrecks were a significant problem on Ireland's east coast due to the high levels of marine traffic moving through the Irish Sea. This was especially true along the Dublin coastline, with the majority of known wreck locations located in Dublin Bay, Portmarnock and on the Arklow Bank (Brady 2008).

The Portmarnock / Baldoyle estuary, where the Rivers Sluice and Mayne enter the sea, three significant inlets located along this stretch of coastline (the others being the Malahide and Rogerstown estuaries to the north; all three contain extensive areas of salt marshes). A dense concentration of wrecks, ranging from 14th century trading ships carrying wine, jewels and spices, to 19th century coal-boats, is recorded on and close to Portmarnock Strand (at least eight of these vessels can be seen at low tide;

many are recorded to Portmarnock 'beach', 'strand' or near Velvet Strand, which may all be references to the one area).

One of the most notable wrecks along this stretch of coastline is that of the *Nicholas* in 1306, which is the earliest named shipwreck in Ireland. It was caught in a severe storm and was wrecked on Portmarnock Strand. A number of the sailors and merchants on board were drowned, while some managed to make it to shore. The ship was carrying wine, wax, copper, pots, spices in barrels, and coffers with jewels. The vessel broke up and much of the valuable cargo was washed ashore. A man called John from Malahide was charged with stealing some of the goods that had come ashore, namely the 'three lambs furs, a hood of green and a barrel of divers spices of great value and carried them away', and it was noted that he appeared to have drunk much of the wine he had stolen. The court records show that 33 others were charged with theft from the vessel, including Brother William and monks from the House of St Mary in Dublin, who were dwelling in Portmarnock at the time; the monks and their servants were charged with stealing wax, tin and other goods (Bourke 1994; Bourke 1998; de Courcy Ireland 1983).

The next known wreckage in the vicinity of Portmarnock dates to the mid-15th century, when a ship 'laden with wine' was wrecked. The remainder of shipwrecks recorded – and the majority by far – date to the 19th century, which is no doubt a reflection of the increased maritime traffic and more efficient record keeping. Despite the vagaries of the sea, many of the records report the crew being saved, though sadly not on all occasions. Most of the shipwrecks are known only from documentary sources – and so their exact locations are uncertain – but others have been identified through seabed survey and are occasionally exposed at low-tide, and one was visible during an aerial survey.

A list of the shipwrecks recorded in the Portmarnock / Baldoyle area is contained a table in Appendix 3. These have been compiled from the shipwrecks archive held by the Underwater Unit of the National Monument Service with additional sites identified from the lists contained in the *Shipwreck Inventory for Ireland* (Brady 2008). The reports held within the Commons Sessional Papers (CSP) are brief and usually mention only the captain, occasionally the circumstances of the wreck and whether cargo, crew or passengers were lost.

7.7 Site Survey of the Storm Outfall and Test Excavation of the Regional Wetland & Surface Outfall pipes

The proposed outfall option will cross the Portmarnock–Baldoyle Road (the preferred method is by tunnel/ trenchless method, however open excavation may have to take place as there is a foul rising main in the road and to provide certainty in avoiding it, it may have to be exposed in open cut). The outfall is located to the south of a former mill race as shown on the historic Ordnance Survey mapping.

The stone lined watercourse (former mill race channel) is located to the north of the proposed outfall pipe. It is approximately 48m in length and c. 5m wide (Plate 8). It is bound to the south (on the roadside) by a mid-19th to early 20th century replacement or improved stone wall with rounded cement coping. It is likely that the channel extends further to the north but is currently under grass.

To the north (on the estuary side) is a roughly faced limestone wall with block coping which appears to be original. At the southern end of the wall is the sluice (Plate 9), it has a red brick surround and a metal gate (this is labelled as a flood gate on the 1864 OS Map and as a sluice on the 1936 edition).

The existing outfall into the estuary is a square culvert comprising with rubble stone and cement block side walls and replacement cement slabs on top (Plate 10).

The roughly faced limestone wall extends to the south beyond the culvert (Plate 11) and beyond the millrace channel wall for approximately 4m. The wall is slightly battered and approximately 1.65m in height. The end of the wall is engulfed by an earthen embankment.

Plate 12 shows the approx. location of the proposed storm water outfall pipe, (marked by archaeologists) in relation to the sluice gate and millrace. The pipeline will traverse an earthen embankment to the east of the coast road. This area was examined (Plates 13- 18) as part of the archaeological survey.

The partial collapsed remnants of a low rubble limestone feature, that may be the remnants of a wall, survives to a height of c. 40cm high and approx. c.50cm wide, probing of the ground could not find the extent of this feature or if it was linear in nature. Also revealed in the undergrowth was a dump of concrete (Plate 14) in the line of the proposed pipeline. Plate 15 shows the proximity of these two features to each other while Plate 16 shows loose stone blocks strewn along the foreshore.

The foreshore was subjected to a visual archaeological inspection at low tide and no features of an archaeological nature were identified (Plate 17). The works for the proposed storm water outfall will traverse this overgrown earthen embanked area (Plate 18).

The area was revisited at high tide (Plate 19) and at the time was inundated with water up to 1m deep.

On the opposite shore line, c.100m to the northeast of the proposed works, are the rubble stone foundations of a tide mill (RMP Ref: DU015-015) (Plate 20) and to the north is Portmarnock Bridge. These features will not be impacted by the proposed outfall works.

Plate 8 **View looking northwest along the millrace channel, north of proposed storm water outfall pipe**

Plate 9 **Sluice/ flood gate, located to the north of the proposed outfall works**

Plate 10 The stone and modern cement culvert located to the north of the proposed outfall works

Plate 11 Roughly coursed rubble stone wall, slighted battered to the south of the culvert

Plate 12 Line of millrace wall, archaeologists standing at the location where the proposed works will enter the estuary

Plate 13 Rubble limestone low feature with modern inclusions, this will be breached by the proposed development

Plate 14 Concrete slab found in the undergrowth at the location of the pipe crossing

Plate 15 Shows the location of the concrete slab (Plate 14) and the rubble limestone feature (Plate 13)

Plate 16 View of the line of the proposed pipe and loose rubble stone blocks in the foreground

Plate 17 View of rubble stone blocks with the culvert/sluice gate in the background

Plate 18 View to the bay from the site showing the area to be disturbed to the south of the mill race wall

Plate 19 View to foreshore at high tide

Plate 20 Portmarnock Bridge (centre left) and the ruins of the tidal mill (centre right)

The proposed storm water wetlands and surface water outfall pipes are in a field of level pasture (Plate 21).

No above ground features of an archaeological potential were identified in this area. However, linear crop marks have been identified on recent aerial photography (Plate 22) and these features were subject to test excavation. No archaeological material or features were revealed as a result of this exercise.

Plate 21 View to Regional Wetlands Area

Plate 22 Aerial photography (digital globe) showing the location of the linear cropmark features.

7.9 Archaeological Investigations

As per the recommendations of the National Monuments Service to An Bord Pleanála, strategic archaeological test excavation of the linear crop mark features along the route of the proposed outfall pipelines and at the regional wetlands area (Figure 21, see also Figure 5 Appendix 4) has taken place in order to inform the decision making process and to establish the archaeological potential of these features.

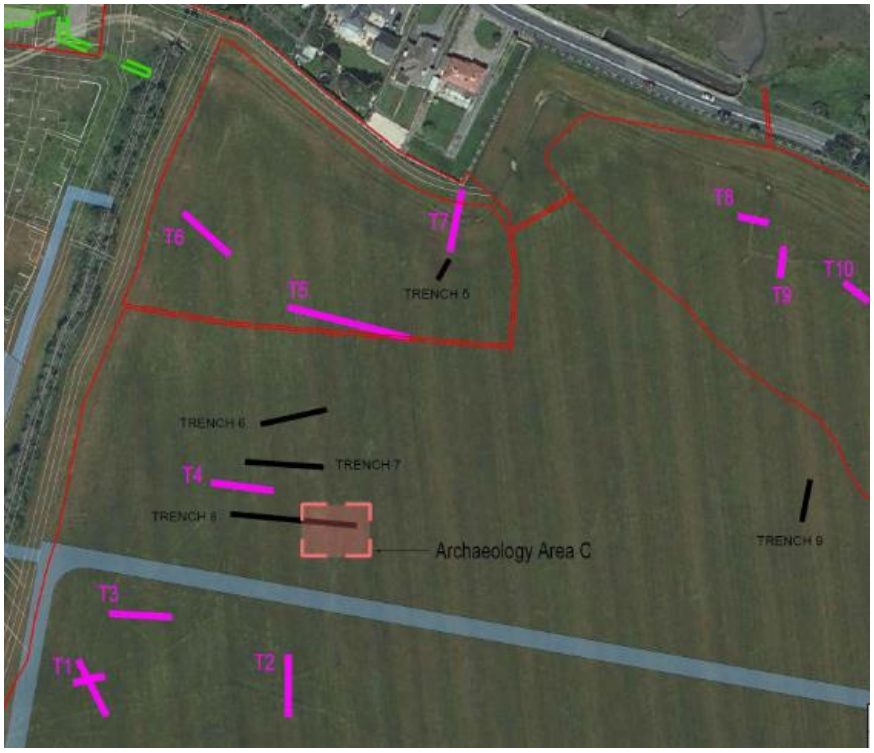


Figure 21 Test trench location (see Appendix 4, figure 5)

7.9.1 Methodology

As part of the adopted archaeological strategy for Phase 1A (the previous phase), curvilinear and enclosing cropmarks as identified on recently available aerial photographs were targeted and strategically test excavated. Targeted test trenching in the form of 2 slit trenches each for the possible enclosure DU 015-014001 and a sub-rectangular enclosure confirmed they were archaeological in nature. A further 5 test trenches were examined over an irregular enclosure and faint cropmark at the southeast corner of the field. These trenches detected archaeological deposits similar in nature to the other two enclosure sites in the same field. Two of these enclosures have now been excavated and dated to the early medieval period.

Overall, this methodology resulted in revealing three large scale below ground archaeological enclosure sites in the field immediately west of the proposed outfall and regional wetland works.

This previous test excavation strategy demonstrates the successful approach of targeted testing in order to examine the potential of buried archaeological features and deposits that are masked by soils and/or deeply buried within the lands proposed for development at Portmarnock.

As a result, this strategy was applied to the wetland and outfall areas, with 3 test trenches placed within the regional wetlands area and 3 test trenches placed along the route of the surface water outfall pipeline. A further 4 test trenches were placed over a concentration of linear cropmark features to the south of the proposed works that had the potential to be a field system. These additional test trenches were investigated in order to provide a better understanding of the potential of these linear cropmarks.

7.9.2 Previous Archaeological Investigation in this field

During the period 2000-2008, geophysical survey (Nicholls 2002 & Leigh 2004) and test excavation assisted in providing further detail in relation to defining the location and extent of below ground features of an archaeological origin throughout the development lands at Portmarnock (Figure 22).

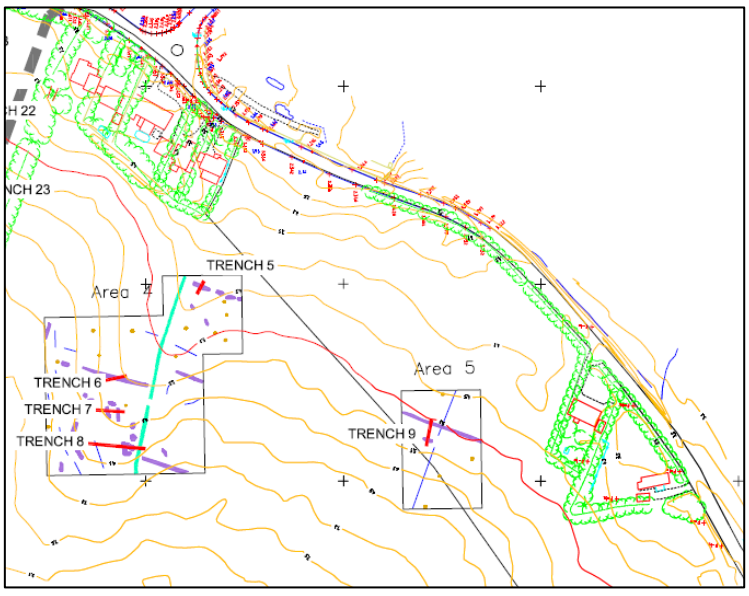


Figure 22 Results of geophysical survey and test excavation (2004)

Test trenches 6 to 9 (Phelan 2004 Licence Ref 04E1415) were excavated to the south of the proposed works while test trench 5 is located adjacent to the outfall pipeline.

Test trench 5 was orientated north-south, 6m long and 2.1m wide and was excavated to a depth of 0.43m. A modern land drain was exposed and correlated with the geophysical anomaly.

Test trench 6 was orientated east-west and measured 18m long and 2.5m wide and was excavated to a depth of 0.55m. No features of archaeological significance was identified in this trench.

Test trench 7 was orientated northwest-southeast and measured 24m long and 2.1m wide and was excavated to a depth of 0.55m. No features of an archaeological significance were identified in this trench.

Test trench 9 was orientated north-south, 12m long, 2.1m wide and was excavated to a depth of 0.65m. No archaeological features were identified.

Test trench 8 was orientated northwest-southeast and measured 36m long, 2.1m wide and was excavated to a depth of 0.40m. At the eastern end of the trench, the anomaly identified during the geophysical survey appeared as a pit feature filled with a black charcoal rich clay and heat shattered stones. The feature measured 2.7m long, 1.2m wide and was 0.23m deep (Figure 23). This feature was considered to be the likely remains of a trough generally associated with fulacht fia.

Test trench 8 revealed a burnt spread/ pit, located to the south of the proposed works. This spread is still insitu (Figures 4) (Appendix 5).

As part of monitoring works for Phase 1A, a burnt mound waterhole (ITM 723657E 742175N) was revealed towards the east end of a sewer/ foul water outfall pipeline that was archaeological monitored near the Coast Road (McLoughlin 2017) (Figure 6 and 23). The pit was filled with black soil containing charcoal and burnt stones and is most likely to have been associated with a burnt mound of which no further trace was found. The full extent of the pit was not excavated as it extended north beyond the limit of the trench required for the pipeline. Excavation of this area took place over five days from 25th-29th July 2016 with two archaeologists and the area within the pipeline trench was fully resolved.

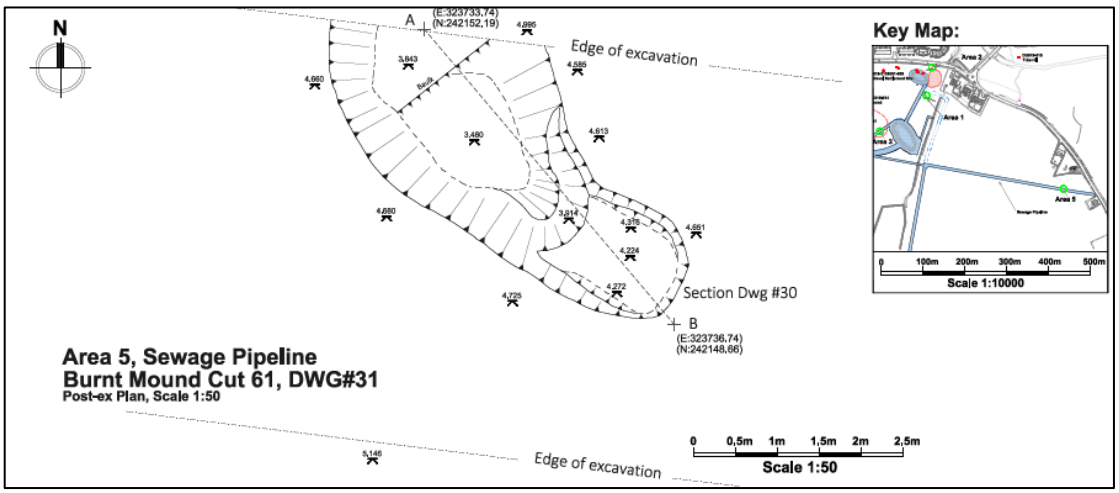


Figure 23 Plan of burnt mound

The pit was identified 300-400mm below current ground level and excavated to a depth of 3.48m OD. A sample of alder charcoal from the basal fill was selected for radiocarbon dating and returned a date range of 3797+/-40 BP, calibrated to BC 2434-2051 (2 sigma, UBA-34919) placing this activity in the Early Bronze Age.

Monitoring of the embankments around the properties and the foul water outfall and haul road produced no further archaeological findings.

7.9.3 Archaeological Test Excavation (Licence Number 17E0597) - Results

Ten targeted trenches ranging in length from 10m to 40m were excavated (Figure 21) over a four day period from the 30th November 2017. The features identified and investigated during test trenching corresponded well with cropmarks visible on aerial photography and represent linear ditches and drainage features, many of which contained modern material.

Ditches that corresponded with field boundaries depicted on the first edition OS mapping of 1837 were identified in trenches T2, T4 and T5. The ditch identified in trench T2 (C33) was oriented west-northwest – east-southeast, measured 2m wide x 0.35m deep and occasional fragments of red brick were found in its fill. The ditch identified in trenches T4 and T5 (C17) was oriented north-northeast – south-southwest and measured 1m wide x 0.6m deep. This feature corresponded to a linear cropmark on aerial photography of the area and a field boundary marked on the first edition OS map. It contained a single sterile fill and appeared to be the result of waterlogging.

The ground in the area around Trenches T1, T3 and T4 had been recently built up with a mixture of topsoil, subsoil and building debris, by between 0.4–0.9m, sealing the original topsoil layer below it.

Field drains were encountered in T6 and T7 and the features revealed in T8, T9 and T10 appeared to be related to natural drainage and stone filled land drains issuing towards the bay.

No features, finds or deposits of archaeological significance were identified in any of the trenches excavated.

A copy of the report which details the results from each test trench accompanies this report (Appendix 4, McLoughlin 2017c).

8. Mitigation Measures

8.1 The Mound (DU015-014) and below ground enclosure (DU015-014001)

The mound and buffer area (70m conservation area) is protected by fencing from adjacent construction activities.

The proposed landscaping works of the mound are informed by the archaeological investigations and survey that have preceded the development in order to provide a better understanding of the significance of the mound in this otherwise flat, lowlying field.

To ensure the protection of the mound with the new residential area; to allow for its display; and to ensure that the area around it can function as a useful area of open space, it is proposed to develop the open space with an informal asphalt boundary path to define the edge of the open space. This boundary path and any landscaping features also takes note of the below ground, in situ enclosing element of the archaeological feature located immediately to the south of the mound (DU015-014001).

While respecting the topographical integrity of the site and to ensure that a safe and maintainable grass surface is provided it is proposed to provide an additional layer of topsoil over the open space area, separated by a geotextile layer.

The mound will be reserved for passive amenity activities and will provide views to the coast, Howth head and Lambay Island. Non-invasive planting such as grass will be used within the central area inhabited by the mound to ensure minimal disturbance while creating a recreational zone.

At the outer buffer zone, a more varied planting regime of shrubs, herbaceous plants and ornamental grasses will be favoured along with an information and seating area to provide a more active amenity zone. Paths etc will be constructed above the existing grade. A border of semi-mature trees and shrubs will be established to the edge of the open space within the buffer zone in order to contain the space and create an edge to the area.

An existing thorn tree will be retained on the mound and topsoil spread in this area will be done by hand to ensure no damage to the roots. The tree will be pruned to remove any damaged branches and its condition reviewed once construction works have been completed.

The area will be situated within a well-used and focal area of the site that will be populated by residents and visitors. It will be overlooked and will become a landmark feature of the new development.

All detailed landscaping elements are provided within the BSM portfolio of drawings. The treatment of the mound from BSM imagery is shown below (Figure 24A-C).

It is proposed to:

- Spray off existing vegetation within the circular work area with a translocated herbicide.
- Cut and remove all herbaceous when it has dried off.
- Cut and remove woody scrub from mound and when re-growth appears spray with a brushwood herbicide.
- Remove and grub out roots as required.
- Protect the existing topography of the mound by covering with a geotextile layer thereby defining the level of introduced soil.
- Spread topsoil over conservation area while respecting the natural topography (150mm min. topsoil layer).
- Form path as per plans.

- Cultivate to a depth of 150mm deep, spread soil and seed/ plant as per plans – non-invasive planting such as grass will ensure minimal ground disturbance.
- Provide for interpretative panels – these can be placed in the ground, or free standing and would aid the reader in understanding the position, context and significance of the location and monument.
- Develop linkages and signage between the two open spaces with in-situ archaeological remains namely the mound (DU015-014) at Portmarnock and the Maynestown enclosure (DU015-055).

Figure 24A An example of a landscaping proposal from BSM

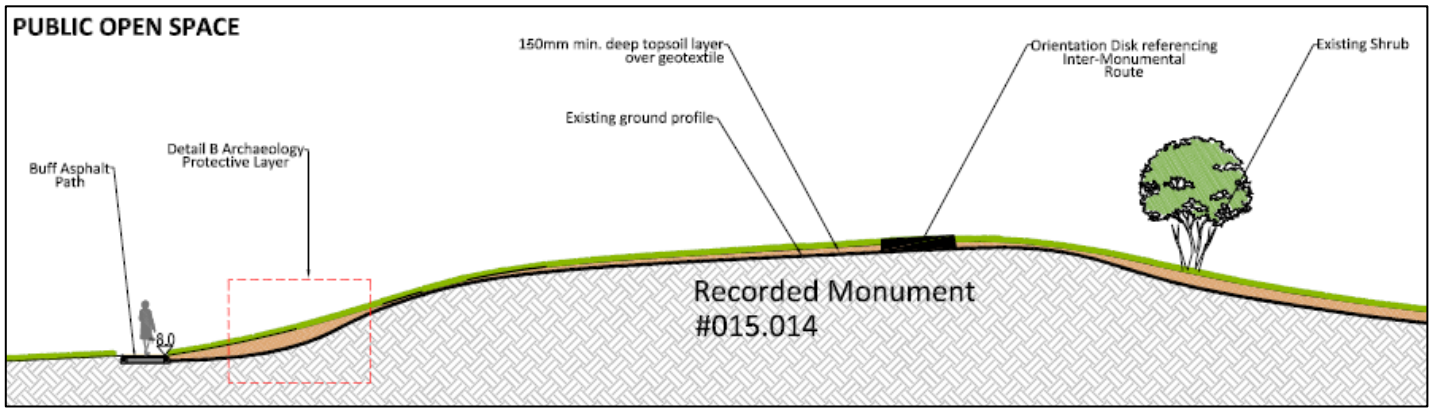


Figure 24B – detail showing archaeological protective layer (BSM) (from north to south of mound)

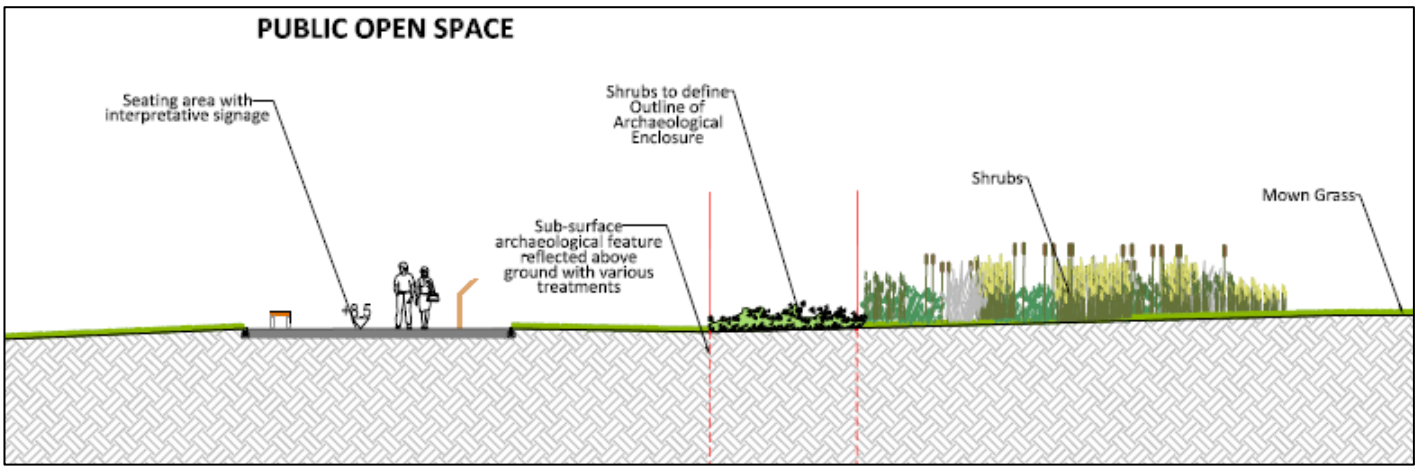


Figure 24C – detail showing various treatment for displaying the subsurface enclosure (BSM)

Figure 24D is taken from BSM (Drawing No. 304) and shows the proposal for a natural play area located to the west of the mound and located within an introduced soil layer where the existing ground level has been built up where necessary to facilitate the placement of natural climbing and balancing elements. These measures have been put in place to minimise any impact on potential below ground remains.

The introduction of soil over a geotextile layer was discussed with the National Monuments Service (22 11 2017) in order to assist with the preservation insitu of the mound and the subsurface enclosure. The introduction of a geotextile layer over the present remains of the mound is designed to ensure the stability and topographical integrity of the feature. This layer will define the level of introduced soil while respecting the natural topography. The introduction of topsoil over the buffer zone area will be put in place in order to protect against erosion and potential damage to the archaeological monuments (the mound and the subsurface section of the enclosure) in the long term (Appendix 2).

The play area has been designed to reflect the archaeological findings of the area and to enable children to learn about the historic past of the site and to encourage imaginative play. Signage will also promote and strengthen an understanding of the historic past.

As the final design and conservation works progress, all details will be agreed with the DCHG.

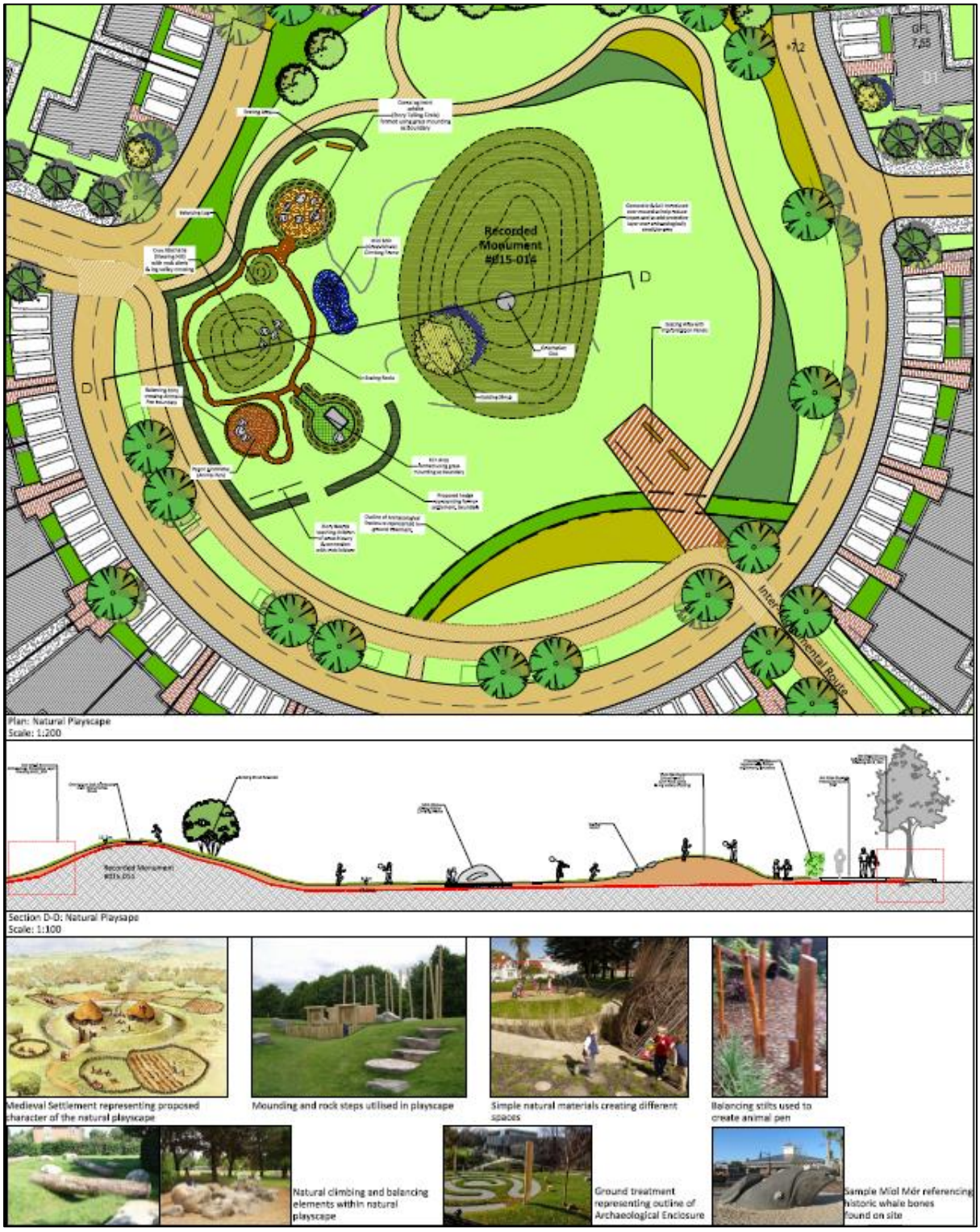


Figure 24D Natural Playscape (BSM drawing no 304)

8.2 Below ground archaeological remains at the north east corner of the application area (Area 5A)

Monitoring of an area roughly 70m x 40m at the northeast corner of the development revealed insitu remains relating to the medieval period and probably represent an extension of the medieval settlement site that was excavated in 2008 (Moriarty 2008) adjacent and to the west of this area.

In the pre-application consultation, the National Monuments Service of the DACHG, has recommended that the developer will employ a suitably qualified archaeologist to excavate Area 5A in its totality in advance of the commencement of construction works at this location.

As a result of this request, a licence application and method statement by Gill McLoughlin of CDHC and a commitment of funding by the developer has been submitted to the National Monuments Service so this excavation can take place in a timely manner and to the requirements of the authorities.

8.3 The below ground archaeological potential of the lands – Residential area, Portmarnock townland

In addition to the above detailed excavation of the application lands, further investigative methods are proposed in order to assess the full archaeological below ground potential, to provide greater certainty and to minimise any future risk incurred by the developer due to archaeology.

It is proposed:

- to test excavate the area south and west of the area of medieval settlement (DU015-013001-DU015013006-)
- To archaeologically supervise topsoil stripping in area Phase 1B
- To discuss the appropriate mitigation of impacts on any archaeological remains that are identified with the National Monuments Service.

The DCHG have recommended that a programme of archaeological testing and the archaeological supervision of further topsoil stripping is agreed with the National Monuments Service and with the Planning Authority in advance of the commencement of construction works.

In response to this and as a result of excavating Area 5A it is also proposed to excavate a series of test trenches to the west and south of the previous excavation in order to establish whether the medieval remains may extend further than previously thought (Figure 25) (Appendix 5).

Figure 25 Proposed test trenches in red and previously excavated area (Licence Ref. 08E0376) (green)

This will be carried out under the direction of the licenced archaeologist and archaeological assistants will be made available in the event of features being uncovered to assess their nature and extent. The trenches will be excavated to the surface of archaeological or potential archaeological deposits or natural subsoil, whichever is encountered first any further investigations will be carried out by hand.

The aim of the testing will be to establish the absolute limit of any activity associated with the previously excavated medieval village and to assess the nature and extent of those features. In the event of further archaeological remains being uncovered the NMS will be consulted on the best course of action.

With other areas that require large scale clearance such as the compound location, it is proposed to test excavate this area in advance of construction taking place (Figure 26).

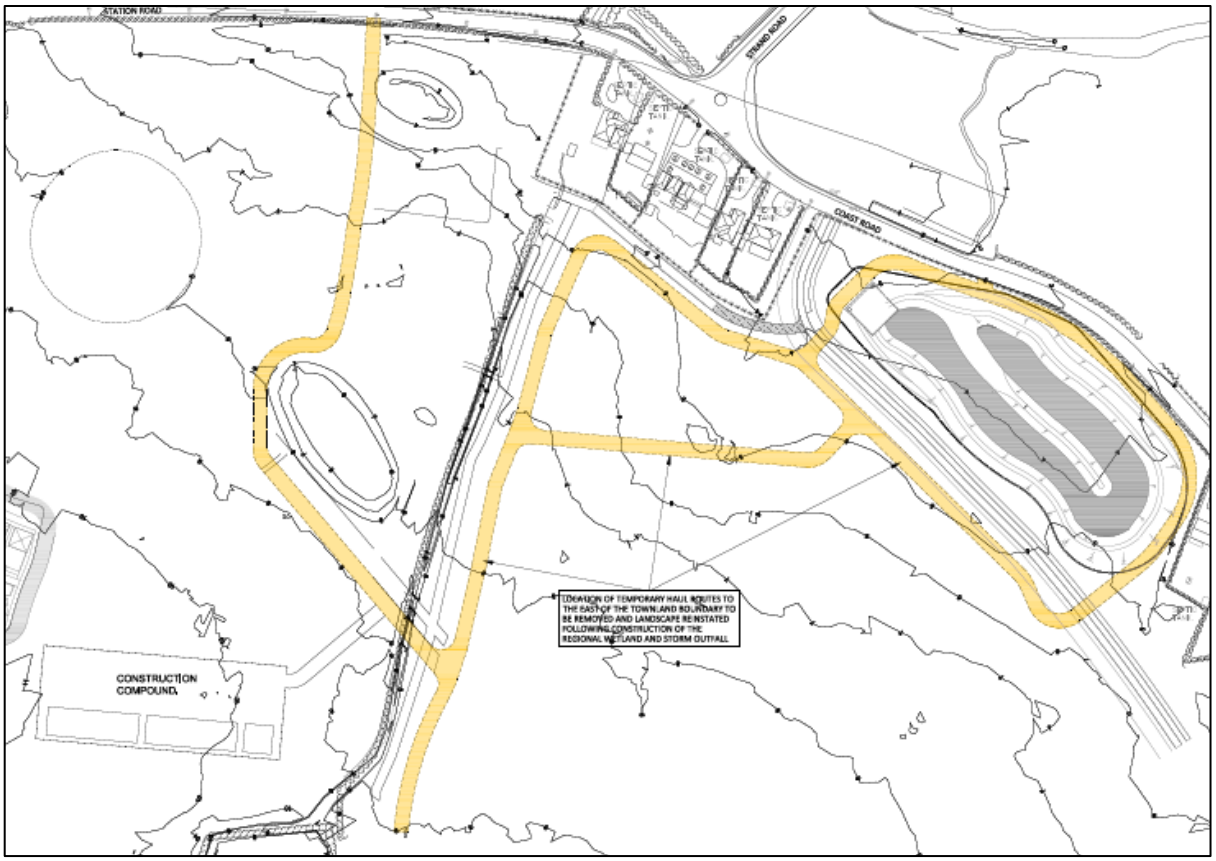


Figure 26 Shows the location of the proposed construction compound and temporary haul roads, this will be test excavated in advance of construction (after J.B.Barry)

Appendix 5 shows the extent of archaeological investigation within the residential lands of Portmarnock South Phase 1B, apart from Area 5A, which will be fully excavated and the test trenching proposed around the medieval settlement, there is not a lot of land left to examine.

Topsoil stripping as an archaeological exercise is recommended in order to identify any sub-surface features that have defied detection to date given the known and recorded potential of these coastal lands.

If archaeological features are revealed, it is anticipated that resolution will be affected through a process of archaeological investigation and recording funded by the developer, prior to, or during the earliest stages of site development and enabling works. The precise scope and extent of the requirement will be subject to discussion and agreement with the National Monuments Service of the DCHG and as part of the planning process.

8.4 The below ground archaeological potential of the lands – Surface outfall pipe, the regional wetlands area and storm water outfall, Maynetown townland

Targeted test excavation has taken place across linear crop marks that lie within the proposed regional wetlands area and the along the surface outfall pipes, no archaeological features were revealed as a result of this exercise (Appendix 4 Test Excavation Report). It is now proposed to archaeologically supervise the removal of topsoil and excavation practices within these areas.

To the south of the outfall pipes associated with the regional wetlands area, two fulacht fia have been identified. The first through geophysical and testing (Phelan 2004) and is still in situ and is shown on Appendix 5 as 'Archaeology Area C'. The second was revealed through monitoring and this has been excavated (McLoughlin 2016) and dated to the Bronze Age.

Due to the proximity of the proposed development, it is proposed to excavate the burnt spread identified by Phelan in 2004 in advance of construction taking place for the proposed infrastructural works associated with the development.

The overall area of disturbance within the estuary has been minimised. An area of approx. 20sqm of the foreshore (below the HWM) will be disturbed to enable the construction of the concrete base slab and wing walls of the outfall structure. Approximately 35sqm above the HMW will also be disturbed for the same purpose (Plate 19).

The area into which the outfall pipe will be inserted has experienced considerable disturbance over the years as well as the recent past, with walls and earthen embankments being rebuilt and reconstituted as part of the water management system of the bay (Plates 14-17). A sluice gate is marked on 1st edition six inch OS mapping (1837) to the north of the proposed outfall and on the 25-inch edition (1864) it is annotated as a flood gate. Later editions of OS mapping show a sluice in the area and a channel extending northwards through the mud flats issuing out into the estuary. The mill, millrace and sluice gate as shown on the historic maps will not be impacted by the proposed works.

While an archaeological visual survey has taken place of the foreshore, to date it has not been possible to archaeologically test excavate this area due to logistical difficulties and environmental constraints. No work is allowed during the months of November to March due to the presence of the wintering Brent Geese in the bay and all works will have to take place under a Foreshore Licence.

Prior to the commencement of construction works, all excavation/ exploratory work within this area will be archaeologically supervised or investigated as deemed necessary by the National Monuments Service of the DCHG. If any features are revealed it is proposed to record them as required by excavation, a photographic and scaled survey and written description prior to their removal.

It is proposed that investigation/supervision works can take place in a co-ordinated manner with other disciplines in order to minimise disturbance and disruption to the bay which is a nature reserve of international importance (all works will avoid the Annex 1 habitat).

8.5 Below ground double ditched enclosure to the south of the proposed development

This newly revealed enclosure site (Archaeology Area A, Appendix 5) identified from test excavation lies to the south and outside the application lands. A secure boundary treatment to the specification of the National Monuments Service will be put in place and the site left in situ and avoided by the proposed development.

An exclusion some of some 20m will be placed around the existing 10m buffer zone that currently surrounds the enclosure site. This exclusion zone will be securely fenced from construction activities and will be to the specification of the National Monuments Service. The hoarding will be placed along the line as shown on the plans (Appendix 5) so an effective barrier is created from all construction activity until a decision is made in relation to the future preservation of the site.

The eastern side of the outer enclosure appears to be located within the upstanding field boundary which is also the townland boundary between Portmarnock and Drumnigh. It is possible that subsurface remains associated with the site may extend further east. As such this area will be subject to test excavation in order to determine if subsurface features are present.

If the eastern section of the site is located within the existing field boundary it will be preserved in situ as the townland boundary is to be retained in situ in accordance with the approved Portmarnock South Local Area Plan 2013.

Future Work: Excavation of double ditched enclosure

In the future, consideration must be given to the location of the enclosure site as any development in this area would impact the below ground archaeological remains. As part of the Portmarnock Local Area Plan (2013), this area has been proposed for residential housing and as the archaeological potential of this site was only revealed relatively recently through aerial photography and test excavation (2016), preservation in-situ and avoidance of the site is now not a possibility if delivery of the plan is to be achieved.

As such it is recommended that once the testing has taken place to the east of the known remains, the site be fully archaeologically excavated (preservation by record) in advance of development occurring in this area. It is noted that there is a precedence for excavating similar sub-surface enclosure sites in the same field and that the excavation of this site could help complete an overview of activities in this area during the early medieval period.

With permission sought from the National Monuments Service and funding made available by the developers, it is proposed to preserve the site by record and excavate the below ground features as part of a research strategy framework. Once this area has been archaeologically excavated and is resolved, it is envisaged that subsequent planning applications for development in this area will follow.

8.6 Publication

Given the extensive and interesting findings relating not only to the early medieval and medieval periods but also prehistory, it is recommended that all strands of previous site investigation and excavation be compiled into a comprehensive publication documenting the activity and occupation patterns of the coastal lands at Portmarnock. This publication could be used to inform the information panels required at the Portmarnock mound (DU0015-014) and the Maynestown enclosure (DU015-055).

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Appendix 1 – Planning Conditions 14 (F07A/0947) and 28 (F13A/0248)

Planning Register Reference No. F07A/0947 Condition 14 - Archaeology

(i) The applicant shall prior to commencement of any works on site submit to the Planning Authority and the Dept. of Environment, Heritage and Local Government a conservation plan for the archaeological monuments on site.

(ii) The applicant shall engage the services of a suitably qualified archaeologist (licenced under the National Monuments Acts 1930-2004) to carry out pre-development testing at the site. No sub-surface work shall be undertaken in the absence of the archaeologist without their consent.

(iii) The archaeologist is required to notify the Department of the Environment, Heritage and Local Government in writing at least four weeks prior to the commencement of site preparations. This will allow the archaeologist sufficient time to obtain a licence to carry out the work.

(iv) The archaeologist shall carry out any relevant documentary research and may excavate test trenches at locations chosen by the archaeologist, having consulted the proposed development plans.

(v) Having completed the work, the archaeologist shall submit a written report to the Planning Authority and to the Department of the Environment, Heritage and Local Government for consideration.

(vi) Where archaeological material is shown to be present, preservation in situ, preservation by record (excavation) and/or monitoring may be required and the Department of the Environment, Heritage and Local Government will advise the applicant/developer with regard to these matters.

(vii) No site preparation or construction work shall take place until after the archaeologist's report has been submitted, and permission to proceed has been received in writing from the Planning Authority in consultation with the Department of the Environment, Heritage and Local Government.

(viii) The applicant shall submit for the written agreement of the Planning Authority and the Dept. of Environment Heritage & Local Government an 'Architectural Heritage Impact Assessment' in relation to RPS 475, a recorded monument RMP DU15:014 (earthwork mound).

Planning Register Reference No. F07A/0947 Condition 28 - Archaeology

(i) The developer shall employ a qualified archaeologist licensed to carry out Archaeological Monitoring of all ground works carried out within the proposed development site. Should archaeological material be discovered during the course of Archaeological Monitoring, the archaeologist may have work on the site stopped, pending a decision as to how best deal with the archaeology. The developer shall also be prepared to be advised by the Department of Arts, Heritage and the Gaeltacht with regard to any necessary mitigation measures (eg preservation in situ or excavation) and shall facilitate the archaeologist in regarding any material found. The archaeologist shall prepare and submit a report, describing the result of the Archaeological Monitoring, to the Planning Authority and the Department of Arts, Heritage and the Gaeltacht within six weeks following completion of Archaeological Monitoring.
REASON: To facilitate the recording and protection of any items of archaeological significance that the site may possess.

Appendix 2 –National Monuments Service (NMS) Comments to An Bord Pleanála (23rd October 2017)

National Monuments Service Recommendations

Section 5.1:

Section 5:1 deals with the conservation plan for the mound (DU015-014----) and the portion of the enclosure (DU015-014001-) to be referenced in the area to be conserved around the mound.

It is recommended that the details of the conservation plan is to be agreed with the Department of Culture, Heritage and the Gaeltacht and with the Planning Authority in advance of the final conservation works and plans for presentation and interpretation of the mound.

Response:

A meeting took place with the Department of Culture, Heritage and the Gaeltacht; Michael MacDonagh and Sean Kirwan of the NMS, the developer; Ian McKee of Hudson Advisors Ireland, the landscape and visual consultant; Aine Patton of Brady Shipman Martin, and the archaeologist; Lisa Courtney of Courtney Deery Heritage Consultancy on the 22nd of November 2017 to discuss the design proposals in order to protect the mound in the long-term.

As part on the conservation plan devised in 2009 (Gowen 2009), the monument (DU015-014) is to be preserved in situ within an area of open space 70m in diameter. This allows for a buffer some of some 20m around the monument where planting, play area etc can take place. This approach has previously been agreed with the NMS.

The mound is presently protected from the rest of the development lands by a palisade fence and currently there is no access to the monument. Also preserved insitu within this area is the below ground remains of a 45-50m section of a curving ditch that forms part an early medieval enclosure (DU015-014001). The rest of this site has been excavated (Licence Ref 16E613, Mc Loughlin 2017b).

As the design progresses, the design team are now devising protective measures that will assist with the preservation in situ and integrate the mound so it is a focal point and recognisable landmark within the modern housing development.

In order to achieve this the following protective processes are envisaged (section 6.5 and section 8.1 of the report):

1. A topographical survey of the feature – this survey has taken place and the results are shown in section 4.3 of the report.
2. The introduction of a geotextile layer over the present remains of the mound to ensure the stability and topographical integrity of the feature. This layer will define the level of introduced soil.
3. While respecting the natural topography introduce topsoil over the conservation area. This will be put in place in order to protect against erosion and potential damage to the archaeological monuments in the long term.
4. Cover the mound with non-invasive planting, ie grass.
5. Encourage the mounded area to be used as a passive recreational zone, reserved for taking in the views.
6. Explore ways of making the below ground curvilinear ditch legible and accessible to the public through a choice of landscaping materials and planting - to be agreed with the authorities.
7. Provide for an interpretation and seating area that will create an understanding and context for the above ground monument and the below ground remains.

As the final design and conservation works progress, all details will be agreed with the DCHG.

Section 5.2:

Section 5.2 describes an area which is to be used as an attenuation pond. This area is immediately adjacent to an area previously excavated where the remains of medieval settlement was discovered.

It is recommended that Area 5A is excavated in totality by a suitably qualified archaeologist in advance of the commencement of construction works at this location.

Response:

The client will employ a suitably qualified archaeologist to excavate Area 5A in its totality in advance of the commencement of construction works at this location.

A licence application, method statement and commitment of funding by the developer has been submitted to the National Monuments Service so this excavation can take place in a timely manner and to the requirements of the authorities.

Section 5.3:

Section 5.3 describes the proposal to erect a secure boundary between Portmarnock Phase 1B and a newly identified 'double-ditched' enclosure. The mitigation proposal also describes the proposal to erect a 'robust' fence marking a 20 metre exclusion zone around the newly-identified enclosure.

It is recommended that the area to the east of the boundary is subjected to archaeological test excavation as per the proposed mitigation. The type of the fence around the newly-identified enclosure will be agreed in advance of construction works with the Department of Culture, Heritage and the Gaeltacht and with the Planning Authority.

Response:

The fencing type will be to the specification of the DCHG.

The area to the east of this feature is currently outside the ownership of the client and therefore cannot be test excavated immediately. An agreement will be put in place that ensures that should this land become available for testing that it will be carried out at the earliest possible opportunity.

Section 5.4:

Section 5.4 describes the following proposals:

- to test excavate the area south and west of the area of medieval settlement (DU015-013001- to DU015013006-)
- to archaeologically supervise topsoil stripping in area of Phase 1B
- to discuss the appropriate mitigation of impacts on any archaeological remains that area identified.

It is recommended that a programme of archaeological testing and the archaeological supervision of further topsoil stripping is agreed with the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht and with the Planning Authority in advance of the commencement of construction works.

Response:

All further archaeological investigative works that are required will be agreed with the statutory authorities prior to the commencement of construction works.

Comments from the NMS:

The archaeological report has not addressed the impacts and likely impacts from the construction of the proposed regional wetland area and the associated developments including an outfall into Baldoyle Bay.

There is no description of the impacts from the construction of the wetland area, the associated pipelines or the impact of the outfall pipe in the vicinity of the tide mill (RMP No. DU015-015----) and the sluice gate and flood gates marked on the Ordnance Survey maps.

There is no description of the archaeological impacts from the construction of the foul sewerage pipeline.

Response:

The information in relation to the regional wetland area, outfall pipeline and storm outfall is contained in a separate draft report for the storm outfall (CDHC September 2017). This report was accidentally omitted from the supporting documentation submitted to An Bord Pleanála for their review. A digital copy has been sent to Fingal Co Council for their review and a hard copy was handed to the NMS at the meeting held on the 22nd of November 2017.

A description of the impacts from the construction of the wetland area, the associated pipelines and the storm outfall in the vicinity of the tide mill (RMP DU015-015--) and the slice gate and flood gates marked on the Ordnance Survey maps was included in the omitted report and has now been updated to include detailed design

and forms part of this final report. The tide mill and associated works will not be impacted by the proposed scheme.

It is proposed that the two archaeological reports (the residential and storm outfall) will be amalgamated into one archaeological planning report describing all potential impacts. This final report will also incorporate the design changes as a result of the pre-application consultation process.

An archaeological survey of the foreshore has taken place and a photographic record of the area to be affected by the proposed storm water outfall is included in the final archaeological planning report.

The course of the sewerage pipeline has already been archaeologically monitored as part of Phase 1A and this resulted in the excavation of a burnt mound waterhole. The sewerage/foul water outfall does not form part of this application.

The monitoring and excavation results have been submitted to the authorities previously as part of the preliminary excavation report for Phase 1A (Licence Ref. 16E0101, Fingal Co Co F13A/0248) and are described in this report in section 4. The results of the archaeological monitoring of the pipeline and the excavation of this feature have informed the mitigation strategy within this report.

In connection with this portion of the proposed development we have reviewed the aerial imagery from which the series of recently identified enclosures has been made.

These aerial images clearly show that there are features that will affected by the development of the regional wetland area. ***Please see attached images below.***

It is recommended that the archaeological report is extended to include an archaeological impact assessment of the previously unrecognised cropmark evidence that will be affected by the development of the regional wetland management area and its associated developments. The assessment will also include the course of the sewerage pipeline. Archaeological testing of the cropmarks and the routes of pipelines should be included as part of the assessment. This additional impact assessment should be forwarded to An Bord Pleanála ***in advance*** *of submission of the SHD application.*

Response:

Testing has taken place across the linear cropmarks that were identified through aerial photography, within the regional wetland area and surface water outfall pipelines. No archaeological features were revealed as a result of the testing.

The course of the sewerage pipeline has already been archaeologically monitored as part of Phase 1A and this resulted in the excavation of a burnt mound waterhole. The results of this process have been submitted to the authorities and are described in this report in section 4.

The results of the testing (Licence 17E0597) are incorporated into this report and as agreed with the NMS, accompany the submission of the SHD application (Appendix 4 – Test Excavation Report).

Appendix 3 – Shipwrecks in the vicinity of Portmarnock/ Baldoyle

Site/Ship Name	Date of Loss	Place of Loss	Description
Unknown	1920	Behind country club at Portmarnock strand	Jameson family yacht burnt and sunk during the troubles. Timber charred seen at low tide
Elwood / Ellwood	31 Dec 1905 / 1 Jan 1906	Baldoyle Spit, Portmarnock	This 28-year-old wooden schooner of St. Ives weighed 91 tonnes. She was classed by Lloyd's as 'A (in red) S.S., for five years from 4.05'. The date of her last survey was March 1905. The master was D. Hollow of St. Ives, Cornwall. She was en route from Liverpool to St. Ives with a crew of four and a cargo of coal. She foundered in a SSE force 9 gale and was a total loss. (Bourke 1994, 21-22; CSP, 1907, Vol. L, 123 (1263)
Jamaica Packet	1888	Velvet Strand, Portmarnock	This vessel struck and went ashore with the loss of all hands. She had struck the same spot ten years previously but the crew lightened the ship by throwing the cargo of rum overboard (Bourke 1994, 23).
Elizabeth	2 April 1882	Baldoyle bank	135-ton, 93-year-old wooden brig of Arklow / Whitehaven / Maryport. Owned by J. Kearon, master was R. Kearon. En route from Liverpool to Dundalk, five crew, cargo of coal. Became stranded, totally wrecked in an east to north force 10 gale. Crew saved by Howth lifeboat. (W00752, Brady 2008)
Fanny	2 march 1881	Baldoyle	This 123 yr old unregistered wooden dandy weighed 18 tons. The owner and master was L Stafford of Baldoyle. She was en route from Baldoyle to Howth, in Ballast, with a crew of 4 when she was stranded totally wrecked in a SSE force 6 winds. There was no loss of life. (CSP, 1882, Vol. LXIII, 127)
William & Sarah	c. 1880	Portmarnock Beach	The crew refused to sail the ship, as her sails were rotten. The vessel was allowed to rot on the beach for around 30 years. (Bourke 1994, 22)
Unknown	Pre-1869	Portmarnock Strand, near Portmarnock Point, close to the low-water mark, north of the rock-outcrop	One of four wrecks marked on Admiralty Chart No. 1415 for Dublin. (W00842, Brady 2008)
Perseverance	8 Feb. 1861	Portmarnock	This 97-ton schooner was en route from Ardrosson with coal when she was wrecked. All of the five aboard were washed away. Located at the same site as the Weiser. (Bourke 1994)
Unknown	13 Feb. 1861	Velvet Strand	Sixteen bodies were cast a shore from an unknown wreck. (Bourke 1994, 23)
Weiser	1859 (Feb.)	Velvet Strand Portmarnock	Wrecked in the same spot as the Perseverance. (Bourke 1994, 23)
Bahia Packet	26 Feb. 1858	Near Baldoyle	Went ashore laden with coal, sank into the sand. Wreck, cargo advertised for sale. (W00742, Brady 2008)
British Queen	16 Nov. 1842	Baldoyle	190-ton, 17-year old brig of Glasgow. En route from Demerara to Clyde, captain was Thompson. Went ashore, became wrecked. Crew, some cargo and materials saved. (W00758, Brady 2008)
Globe	17 Nov. 1842	Baldoyle	Driven ashore, became a total wreck. Four crew drowned. Master was Dixon. (W00744, Brady 2008)

Site/Ship Name	Date of Loss	Place of Loss	Description
Gainsborough	6 Jan 1839	Gaybrook Cove, Baldoyle Strand	This vessel of Ipswich under Daniel Jeffries was wrecked. En route from Liverpool with £11,000 cargo. Went ashore, crew lashed themselves to the rigging. Captain and some crew saved by coastguard. A cross at top of the Sea Road commemorates the loss of three of the crew. The wreck is in shallow water and is visible at low tide ship timbers removed from Portmarnock beach in 1987 by the corporation may have been from the Gainsborough (Bourke 1994, 21).
Swansea	31 March 1812	Baldoyle	Stranded en route from Chepstow to Dublin, captain was Chapman. (W00804, Brady 2008)
Active	27 Oct. 1804	Near Baldoyle	Lost en route from Swansea, captain was Nicholas. Crew, lost. (W00736, Brady 2008)
Unknown	Dec. 1464	Portmarnock	Ship was laden with wine, was wrecked. (Bourke 1994, 19)
Nicolas	1306	Portmarnock Strand	This ship of Downpatrick was caught in a severe storm and wrecked at Portmarnock, near Malahide. A number of the sailors and merchants on board were drowned, while some managed to make it to shore. The ship broke up and much of the cargo was washed ashore. The vessel was carrying wine, wax, copper, pots, spices in barrels and coffers with jewels. A man called John from Malahide was charged with stealing some of the goods that had come ashore, namely the 'three lambs furs, a hood of green and a barrel of divers spices of great value and carried them away'. He also appears to have drunk much of the wine he had stolen. '33 other individuals were also charged with theft from the vessel including brother William and monks from the House of St Mary Dublin, Dwelling in Portmarnock'. The monks and their servants were charged with stealing wax, tin and other goods. This is the earliest named shipwreck in Ireland (Bourke 1994, 19-20, Bourke 1998, 57 de Courcey Ireland 1983).
Unknown	Unknown	Portmarnock Strand	The *Jamaica packet* was *c.*100 yards from this; the wreck was visible on the beach
Unknown	Unknown	Martello Tower Baldoyle/ Portmarnock	Remains of ship used to be visible at exceptionally low tides, recorded as being visible 100 years ago
Unknown	Unknown	Portmarnock Beach, 100 yards south of the Esplanade	Wooden wreck became exposed 'wedged on rocks' along the water's edge at low tide. The surviving remains measured approximately 16m in length and 3.5m in max. width. The vessel consisted of the lower hull, made up with strakes and framing held in place with dowels and iron pins. Four celining timbers were attached to framing inside the vessel. (W00855, Brady 2008)
Unknown	Unknown	Portmarnock Beach, midway up the beach at low tide	Wooden wreck exposed on the strand in 2002-03. Vessel occasionally becomes exposed on the beach when sand levels are low. The wreck is orientated east-west. It consists of approx. 20 frames with some hull planking buried into the sand. Treenails, dowel holes and copper bolts are evident on the wreck. (W00856, Brady 2008)
Unknown	Unknown	Portmarnock Strand, near Portmarnock Point, c. 30m N of the rock-outcrop	Two vertical timbers side by side, protrude 35cm out of the seabed. They are attached by a metal plate and iron bolts and may form part of a rudder of a vessel. (W00857, Brady 2008)
Unknown	Unknown	Portmarnock Strand, near Portmarnock Point, E of the rock-outcrop	Timber and metal uprights may form part of a metal-constructed vessel. (W00858, Brady 2008)
Unknown	Unknown	Portmarnock Strand	The lower hull of a wooden wreck lies on the beach, midway up the foreshore. (W00859, Brady 2008)

Site/Ship Name	Date of Loss	Place of Loss	Description
Unknown	Unknown	Portmarnock Strand	Wooden wreck. (W00860, Brady 2008)
Unknown	Unknown	Portmarnock Strand	Wooden wreck becomes exposed at times at the low-water mark. (W00861, Brady 2008)
Unknown	Unknown	Portmarnock Strand, N end, at the low-water mark	Wooden wreck becomes exposed at times. (W00862, Brady 2008)
Unknown	Unknown	Portmarnock Strand, near Portmarnock Point & Baldoyle spit	A substantial wooden wreck was seen in shallow water during an aerial survey, located in approx. 1.5m of water, close to the low-water mark. (W00863, Brady 2008)
Unknown	Unknown	Baldoyle spit	Wreck marked on Admiralty Chart No. 1415 for Dublin. (W00864, Brady 2008)

Appendix 4 – Test Excavation Report

COURTNEYDEERY
Heritage Consultancy

Archaeological Testing Report

Maynetown, Co. Dublin

(Portmarnock South Phase 1B)

Planning Register Reference No.: Pre-planning ref no.TC 06F. TC0027

on behalf of

St. Marnock's II DAC and Clear Real Estate Investments plc

Excavation Licence Number: 17E0597

SMR / RMP No. n/a

Site Director: Gill McLoughlin

ITM: 723497E / 742285N

11th December 2017

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ABSTRACT

This report describes the results of archaeological testing carried out by Gill McLoughlin of Courtney Deery Heritage Consultancy Ltd. (Licence No. 17E0597). The work has been carried out on behalf of St. Marnock's II DAC and Clear Real Estate Investments plc in relation to a planning application for a residential development that is in preparation. Archaeological testing of cropmark features visible on aerial photography was carried out in response to comments issued by the National Monuments Service to An Bord Pleanála on a pre-application report which was submitted in October 2017 (Ref. TC 06F. TC0027).

The proposed development site is located south of Station Road, to the west of the Coast Road (R106) and the Baldoyle Estuary, north of the Mayne Road (R123) and to the east of the Dublin-Belfast Railway Line (ITM 723497E / 742285N) (Figure 1).

The archaeological testing follows geophysical survey (2002), testing (2000, 2004, 2016), excavations (2008, 2016, 2017) and monitoring (2016-2017) within the Phase 1B proposed development area (Appendix 5).

Testing took place over four days from the 30th November 2017 and 10 trenches were excavated. The features identified and investigated during test trenching corresponded well with cropmarks visible on aerial photography and represent linear ditches and drainage features, many of which contained modern material. No features, finds or deposits of archaeological significance were identified.

1. Introduction

This report describes the results of archaeological testing carried out by Gill McLoughlin of Courtney Deery Heritage Consultancy Ltd. (Licence No. 17E0597) for St. Marnock's II DAC and Clear Real Estate Investments plc in relation to a planning application that is in preparation for a residential development at Portmarnock & Maynetown, Co. Dublin. The development is part of a larger phased development outlined in the local area plan for the area and the current phase is referred to as "Portmarnock South Phase 1B".

The proposed development site is located south of Station Road, to the west of the Coast Road (R106) and the Baldoyle Estuary, north of the Mayne Road (R123) and to the east of the Dublin-Belfast Railway Line (ITM 723497E / 742285N) (Figure 1).

Archaeological testing was carried out in response to comments issued by the National Monuments Service to An Bord Pleanála on a pre-application report which was submitted in October 2017 (Ref. TC 06F. TC0027). Testing took place over four days from the 30th November 2017 and no features, finds or deposits of archaeological significance were identified.

The archaeological testing follows geophysical survey (Nicholls 2002), testing (Wallace 2000, Phelan 2004, McLoughlin 2016), excavations (Moriarty 2008, McLoughlin 2016 & 2017) and monitoring (McLoughlin 2016 & 2017) within the Phase 1B proposed development area.

Figure 1 Site location

The proposed development comprises residential units within Portmarnock townland and a temporary waste water holding tank, surface water outfall pipelines, storm water outfall and a storm-water wetlands area in Maynetown townland to the east (Figure 2 and for detail Appendix 5).

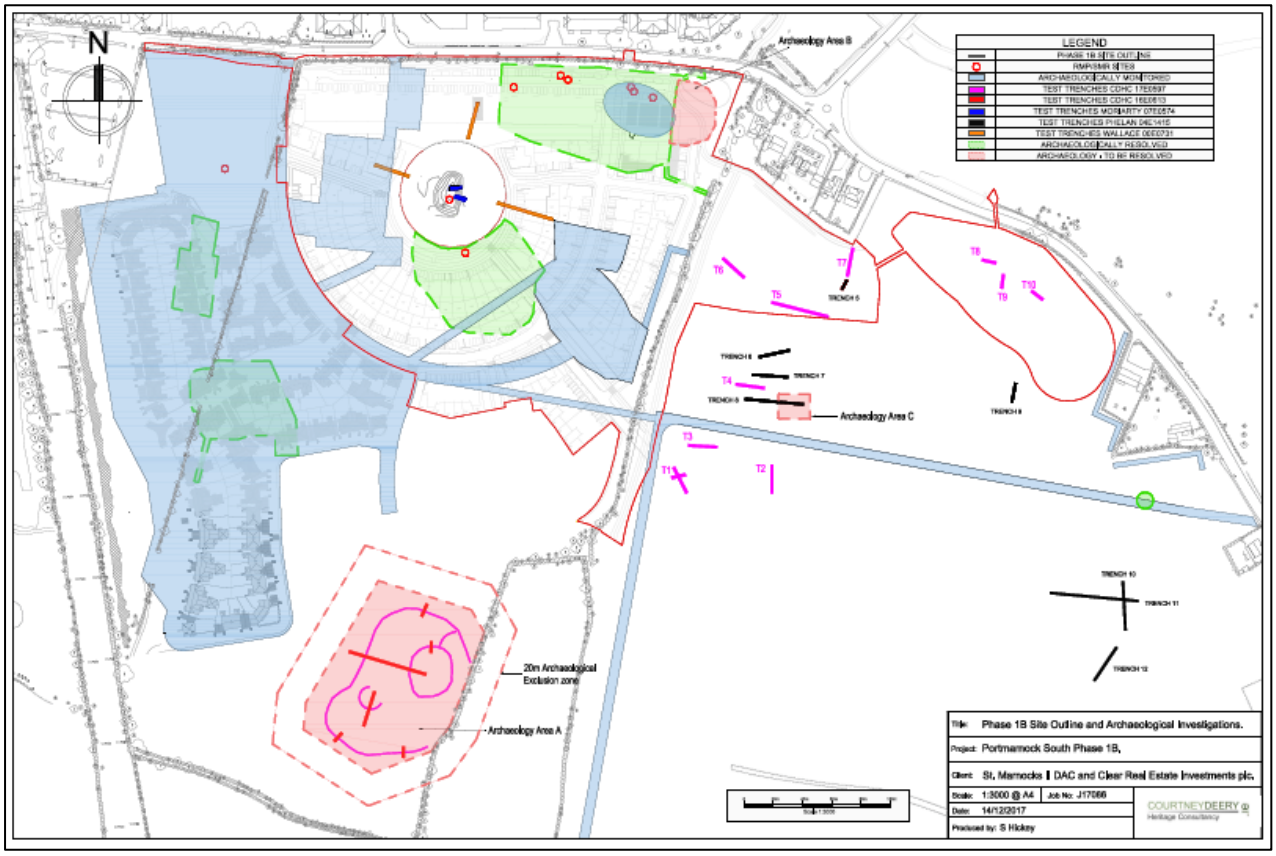

Figure 2 **Portmarnock South Phase 1B Application Area, green areas have been archaeologically excavated, pink areas still have to be resolved (A-C)**

2. Summary of previous archaeological work carried out in the surrounding area

Several programmes of archaeological testing, excavation and monitoring have been carried out within the wider lands in relation to a larger phased development since 2000 (Licence Nos.: 00E0732, 04E1415, 07E574, 08E376, 12E0358, 16E0101 & 16E0613). The area was also subject to geophysical survey in 2002 and 2004. Testing established an appropriate buffer zone around the Portmarnock mound (DU015-014), and identified a medieval settlement (DU015-031001-006), both within the Portmarnock South Phase 1B area. The medieval settlement was archaeologically excavated in 2008 (Moriarty, Licence No. 08E0376, Planning Ref. F07A/0947), however monitoring in 2016 related to the Phase 1A development area for an attenuation pond which lies within the Phase 1B development area uncovered further remains of the medieval settlement extending to the east. This area was subsequently covered in terram and reinstated pending a decision on how best to deal with the remains. This area is referred to as Area 5A and is scheduled to be fully archaeologically excavated in advance of development (Appendix 5).

Two further phases of testing in 2016 confirmed the presence and nature of a ditched enclosure south of the Portmarnock mound (DU015-014001, McLoughlin 2017a) and identified another double ditched enclosure further to the south (McLoughlin 2017b) (Figure 2). Enclosure DU015-014001 (Area 3, 16E0613, McLoughlin 2017c) and another enclosure to the southwest identified during monitoring in the Phase 1A development (Area 6, 16E0101, McLoughlin 2017a) were

subsequently archaeologically excavated and preserved by record. The enclosures date to the early medieval period, with evidence of Bronze Age and Iron Age activity also present.

3. Geophysical survey

Geophysical survey was carried out in 2002 (Nicholls) as part of a much larger survey and Areas 4 and 5 from the 2002 survey are the most relevant to the current proposed development area.

3.1. Summary of Survey Results

Area 4 (Figures 3-4)

A linear response extended northeast-southwest through the middle of this survey area and corresponded with the approximate location of a former boundary shown on the first edition OS mapping. Linear anomalies extending from this boundary feature to the east, south and west indicated the remains of a probable field system, which appeared to continue beyond the perimeter of the sample block. One broad area of increased magnetic response in the southwestern half of the survey area is likely to be of interest, as are a number of associated short ditch lengths and pit-type features. Faint linear trends were apparent throughout the data and could be associated with more recent cultivation trends or natural variations in the subsoil.

Area 5 (Figures 3-4)

A linear ditch-type response oriented northwest-southeast suggested the continuation of a former field system recorded in Area 4. One isolated pit-type response was recorded to the south of this anomaly. This may be of interest, although the possibility that the response may be due to deeply buried ferrous material should not be dismissed. One weak linear trend oriented northeast-southwest was also apparent in the data. The anomaly may be significant.

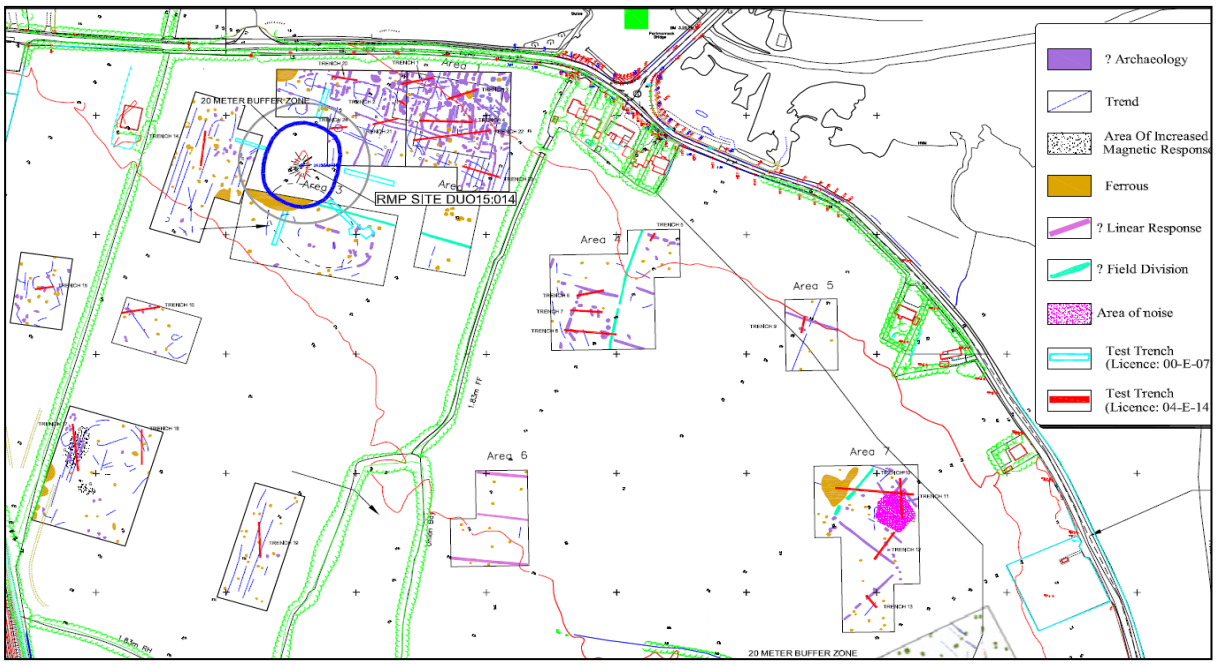

Figure 3 **Summary of geophysical survey interpretation (2002 & 2004) and archaeological testing (2000 & 2004) on the Portmarnock lands.**

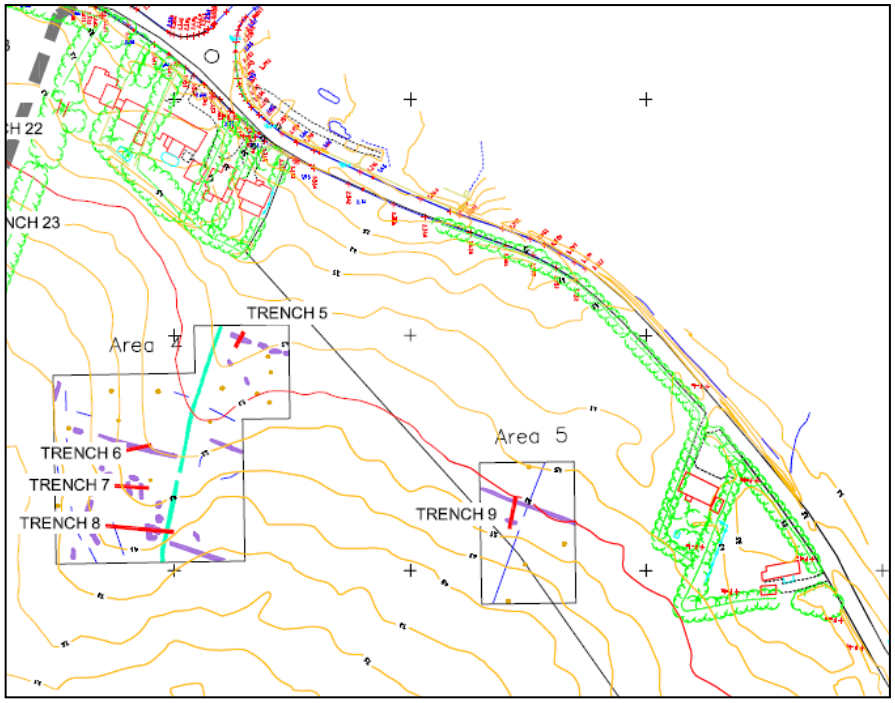

Figure 4 **Detail of geophysical survey interpretation (Areas 4 and 5) and test trenches (2004 in red)**

4. Aerial photography

Various linear cropmarks are visible on recent aerial photography within the current proposed development area and outside of the area to the south. Within the proposed wetlands area, the cropmarks are slightly irregular and suggestive of water movement (Plate 1) and outside of the area to the south the linear nature of the cropmarks were suggestive of a field system (Plate 2).

Plate 1 **Cropmarks in the wetlands area**

Plate 2 Cropmarks to the south of the current proposed development area

5. Archaeological Testing Results

5.1. General

Archaeological testing was carried out over four days from 30th November 2017. This was carried out using a 13 tonne tracked excavator fitted with toothless grading bucket under strict archaeological direction.

In total ten test trenches were excavated and they were placed to target cropmarks visible on aerial photography of the area (Figure 5).

5.2. Methodology

All trenches were excavated to the surface of archaeological or potential archaeological deposits or to the underlying natural subsoil, whichever was encountered first. Any potential archaeological features were cleaned and sectioned where necessary, to establish their nature, extent and character. Photographs, plans and context recording sheets were used to record any features of potential archaeological interest. Full details of all contexts can be found in the rear of the report (Appendix 1).

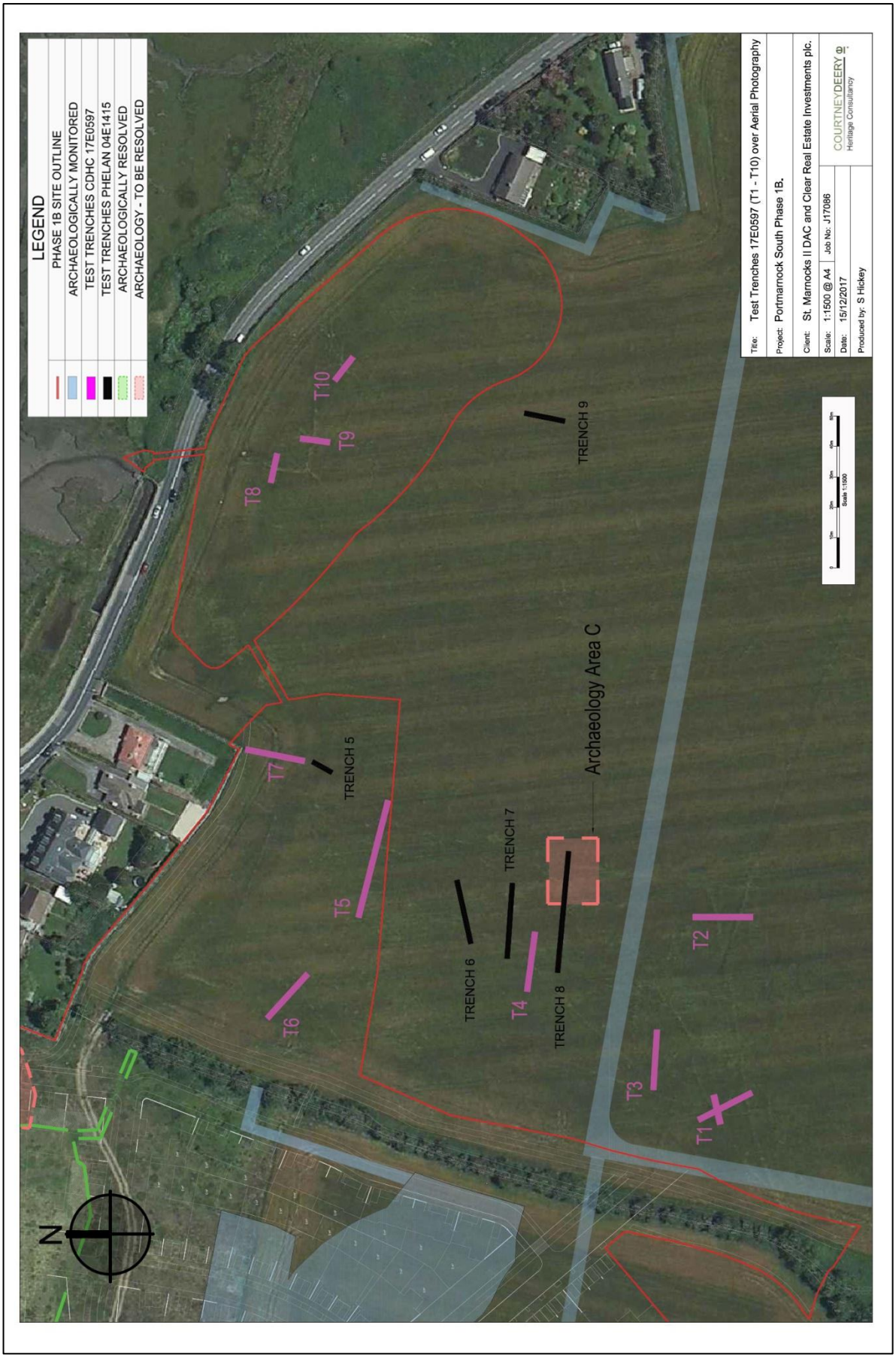

Figure 5 Test trench location

5.3. Summary of test trenches T1 - T10

Table 1 Summary of trench T1

Length & Width	22m long x 2m wide
Orientation	NNW-SSE
Depth	0.9m
Description	**0 – 0.4m:** Modern overburden (C29)
	0.4–0.7m: Original topsoil layer (C1)
	0.7-0.9m: Orange/yellow silty sand subsoil (C30)
	0.9m: Natural subsoil (C2)

Trench T1 Results:

Five features were identified and investigated in trench T1. Two features were stone drains, one filled with gravel and oriented roughly north-northeast – south-southwest (C38) and one filled with stones and a terracotta pipe oriented roughly east-west (C43). At the southeast end of the trench a drain / small ditch oriented northeast-southwest contained stones and brick fragments (C40, Plate 3) and could correspond with a linear cropmark visible on aerial photography of the area. It measured 1.2m wide x 0.45m deep. Another small feature of the same orientation may be a furrow (C49).

An irregular shaped pit (C45) was identified and investigated in trench T2 and additional trenches were excavated on both sides of the trench to establish if there may have been any associated features. The pit was found to measure 2.2m x 1.3m x 0.45m deep and it contained two fills. The basal fill was a grey silty clay with inclusions of burnt stone and charcoal (C47) and the upper fill was a sterile yellow grey silty clay (C46). This feature was heavily truncated by two modern drains and too little of the feature remains for archaeological excavation to be of any benefit.

Table 2 Summary of trench T2

Length & Width	20m long x 2m wide
Orientation	North-south
Depth	0.8m
Description	**0 – 0.5m:** Topsoil / ploughsoil (C1)
	0.5–0.8m: Yellow grey silty sand subsoil (C31)
	0.8m: Natural subsoil (C2)

Trench T2 Results:

Three features were identified in trench T2; two drains (C34 and C36) and a boundary ditch (C33) (Plate 4). Ditch C33 appeared to correspond with a field boundary depicted on the first edition OS map of the area, oriented west-northwest – east-southeast. It measured 2m wide x 0.35m deep and occasional fragments of red brick were found in its fill.

Drain C34 also contained modern material, it was oriented northwest – southeast and measured 0.7m wide x 0.4m deep. Drain C36 was oriented roughly east-west and was 0.35m wide x 0.15m deep.

No features, finds or deposits of archaeological interest were identified in trench T2.

Table 3 Summary of trench T3

Length & Width	20m long x 2m wide
Orientation	East-west
Depth	1.4m
Description	**0 – 0.9m:** Modern overburden (C29)
	0.9–1.1m: Original topsoil layer (C1)
	1.1m-1.4m: Orange/yellow silty sand subsoil (C30)
	1.4m: Natural subsoil (C2)

Trench T3 Results:

The ground in this area had been recently built up with a mixture of topsoil, subsoil and building debris, to a depth of up to 0.9m (C29) and the original topsoil layer was intact below it (Plate 5).

No features, finds or deposits of archaeological interest were identified in trench T3.

Table 4 Summary of trench T4

Length & Width	20m long x 2m wide
Orientation	East-west
Depth	1.45m
Description	**0 – 0.75m:** Modern overburden (C29)
	0.75–1.05m: Original topsoil layer (C1)
	1.05 – 1.45: Orange/yellow silty sand subsoil (C30)
	1.45m: Natural subsoil (C2)

Trench T4 Results:

One feature, a linear ditch oriented north-northeast – south-southeast and 1.5m wide was identified in trench T4. This was the same feature that was identified in the west end of trench T5 (C17) and it corresponds with a cropmark on the aerial photograph and a field boundary on the first edition OS mapping. The feature was sectioned in trench T5 so it was not further investigated in this trench. The ground in this area had been recently built up with a mixture of topsoil, subsoil and building debris, to a depth of up to 0.75m (C29) and the original topsoil layer was intact below it.

No features, finds or deposits of archaeological interest were identified in trench T5.

Table 5 Summary of trench T5

Length & Width	39m long x 1.7m wide
Orientation	east-southeast – west-northwest
Depth	0.55m
Description	**0 – 0.35m:** Topsoil / ploughsoil (C1)
	0.35–0.55m: Yellow brown subsoil (C16)
	0.55m: Natural subsoil (C2)

Trench T5 Results:

Six features were identified and investigated in trench T5 and all appeared to have been related to drainage (Plate 6). Two features; C19 and C23 were narrow stone drains, and the others were small drainage ditches (C25 and C27), a terminal of a similar feature (C21) and a former field boundary (C17). At the west end of the trench, linear ditch C17 appeared to correspond to both the linear cropmark on the aerial photography of the area and to a field boundary marked on the first edition OS map. This feature was 1m wide x 0.6m deep with gradual sides and a concave base. The fill appeared to be the result of waterlogging. The drainage ditches ranged in width from 1m – 1.65m wide and 0.35m – 0.4m deep. All of the features in the trench were oriented north-northeast – south-southwest and some of them do appear to correspond with the pattern of linear cropmark features indicated on aerial photography in this area. Modern pottery and glass were recovered from the fill of feature C27 and given the similarity with C25 and C21 and the same orientation as the stone drains, these features are all thought to be modern.

No features, finds or deposits of archaeological interest were identified in trench T6.

Table 6 Summary of trench T6

Length & Width	21m long x 1.7m wide
Orientation	northwest - southeast
Depth	0.4m
Description	**0 – 0.2m:** Topsoil / ploughsoil (C1)
	0.2–0.4m: Yellow brown subsoil (C3)
	0.45m: Natural subsoil (C2)

Trench T6 Results:

Three features were identified and investigated in trench T6 and all were found to be consistent with drainage features. In the northwest end of the trench drain C4 was 0.8m wide x 0.25m deep and at the southeast end of the trench drain C9 was 0.35m wide x 0.27m deep and was filled with broken red bricks. Both C4 and C9 were oriented roughly north-south. Roughly central in the trench, drain C7 was 0.7m wide x 0.22m deep. It was oriented northeast-southwest and corresponds with the linear cropmark indicated on aerial photography.

No features, finds or deposits of archaeological interest were identified in trench T6.

Table 7 Summary of trench T7

Length & Width	20m long x 1.7m wide
Orientation	north-northeast – south-southwest
Depth	0.45m
Description	**0 – 0.25m:** Topsoil / ploughsoil (C1)
	0.25–0.45m: Yellow brown subsoil (C15)
	0.45m: Natural subsoil (C2)

Trench T7 Results:

Two features were identified and investigated in trench T7 and both proved to be field drains. Drain C11 was oriented roughly northwest-southeast and appears to correspond with the

cropmark feature indicated on aerial photography. Drain C13 contained a terracotta pipe and was oriented northeast-southwest.

No features, finds or deposits of archaeological interest were identified in trench T7.

Table 8 Summary of trench T8

Length & Width	10m long x 2m wide
Orientation	Northwest-southeast
Depth	0.85m
Description	**0 – 0.4m:** Topsoil / ploughsoil (C1)
	0.4–0.85m: Yellow brown subsoil (C16)
	0.85m: Natural subsoil (C2)

Trench T8 Results:

One feature was identified and investigated in trench T8. A narrow and slightly irregular linear feature oriented roughly north-south (C50) was filled with a deposit of yellow-grey sterile sand (0.3m wide x 0.2m deep). This feature appeared to be related to natural drainage from the land towards the bay and corresponds with a cropmark visible on aerial photography of the area.

No features, finds or deposits of archaeological interest were identified in trench T8.

Table 9 Summary of trench T9

Length & Width	10.5m long x 2m wide
Orientation	North-south
Depth	0.7m
Description	**0 – 0.35m:** Topsoil / ploughsoil (C1)
	0.35–0.5m: Yellow brown subsoil (C16)
	0.5-0.7m: Mid brown silty sand subsoil (C52)
	0.7m: Natural subsoil (C2)

Trench T9 Results:

Two features were identified and investigated in trench T9 (Plate 7). A narrow and slightly irregular linear feature oriented roughly east-west (C53) was filled with a deposit of yellow-grey sterile sand (0.45m wide x 0.12m deep). This feature appeared to be related to natural drainage from the land towards the bay and was very similar to C50 in trench T8. It also corresponds with a cropmark visible on aerial photography of the area.

A stone filled drain oriented roughly northwest-southeast in trench T9 (C55) appears to correspond with a linear cropmark visible on aerial photography of the area.

No features, finds or deposits of archaeological interest were identified in trench T9.

Table 10 Summary of trench T10

Length & Width	10.5m long x 2m wide
Orientation	Northwest-southeast
Depth	0.65m
Description	**0 – 0.35m:** Topsoil / ploughsoil (C1)

	0.35–0.65m: Yellow brown subsoil (C16)
	0.65m: Natural subsoil (C2)

Trench T10 Results:

Four features were identified and investigated in trench T10 (Plate 8). A stone filled drain (C57) and a probable furrow (C64) were both oriented east-west and a cut for a plastic water pipe was oriented roughly north-south (C62). A slightly irregular linear feature oriented roughly northeast-southwest (C60) was filled with a deposit of sterile yellow sand. It measured 0.45m wide and 0.25m deep and was very similar to C53 and C50 investigated in trenches T9 and T8 and corresponds with a cropmark visible on aerial photography of the area. This feature represents a natural gully draining into the bay.

No features, finds or deposits of archaeological interest were identified in trench T10.

5.4. Summary

The features identified and investigated during test trenching corresponded well with cropmarks visible on aerial photography and represent linear ditches and drainage features, many of which contained modern material.

Ditches that corresponded with field boundaries depicted on the first edition OS mapping of 1837 were identified in trenches T2, T4 and T5. The ditch identified in trench T2 (C33) was oriented west-northwest – east-southeast, measured 2m wide x 0.35m deep and occasional fragments of red brick were found in its fill. The ditch identified in trenches T4 and T5 (C17) was oriented north-northeast – south-southwest and measured 1m wide x 0.6m deep. This feature corresponded to a linear cropmark on aerial photography of the area and a field boundary marked on the first edition OS map. It contained a single sterile fill and appeared to be the result of waterlogging.

The ground in the area around Trenches T1, T3 and T4 had been recently built up with a mixture of topsoil, subsoil and building debris, by between 0.4–0.9m, sealing the original topsoil layer below it.

No features, finds or deposits of archaeological significance were identified in any of the trenches excavated.

6. Recommendations

- It is recommended that the burnt mound trough identified during testing in 2004 in Maynetown be fully archaeologically excavated under licence to the DCHG in advance of development commencing. Although this is outside of the immediate proposed development area, due to its proximity, archaeological resolution is recommended at this time.

- Archaeological monitoring of groundworks by a suitably qualified archaeologist is recommended. This is due to the proximity of a large number of archaeological sites in the surrounding area and the potential for further small scale remains to be uncovered.

Please note that all recommendations are subject to approval by the National Monuments Section of the Heritage and Planning Division, Department of Culture, Heritage and the Gaeltacht (DCHG).

7. References

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PLATES

Plate 3 **Trench T1, shallow linear ditch/drain C40, looking southwest**

Plate 4 **Overview of trench T2, looking north**

Plate 5 **Trench T3 showing depth of modern overburden, looking west**

Plate 6 Trench T5 showing section of linear ditch C25

Plate 7 Overview of Trench T9, looking south

Plate 8 Overview of Trench T10, showing drain C57 and natural gully C60, looking southeast

Appendix 1 Context Record

Context no.	Description	Location
C1	Topsoil.	All
C2	Natural subsoil, mottled brown grey silty sand with frequent decayed stones.	All
C3	Yellow brown silty sand layer of subsoil between topsoil & natural, occasional inclusions of shell & modern pottery.	Trench 6
C4	Drain at NW end of the trench. Oriented roughly N-S. 0.8m wide x 0.25m deep. Filled with C5, C6.	Trench 6
C5	Reddish sandy fill of drain C4. Basal fill.	Trench 6
C6	Mottled grey gravelly sand, under C5 in drain C4.	Trench 6
C7	Drain roughly in centre of trench, oriented NE-SW. 0.7m wide x 0.22m deep. Filled with C8.	Trench 6
C8	Light brown sandy silt, fill of drain C7.	Trench 6
C9	Brick drain at SE end of the trench. Oriented roughly N-S. 0.35m wide x 0.27m deep. Filled with broken red bricks C10.	Trench 6
C10	Fill of drain C9, broken red bricks.	Trench 6
C11	Drain, 0.3m wide, filled with C12. Roughly NW-SE orientation.	Trench 7
C12	Fill of drain C11. Light brown clayey silt with pebble inclusions.	Trench 7
C13	Drain, 0.2m wide, filled with C14. Oriented roughly NE-SW.	Trench 7
C14	Fill of drain C13. Terracotta drain pipe.	Trench 7
C15	Yellow brown silty sand layer of subsoil between topsoil & natural (=C3)	Trench 7
C16	Yellow brown silty sand layer of subsoil between topsoil & natural (=C3)	Trench 5
C17	Linear cut oriented NNE-SSW. C.1m wide x 0.6m deep (cuts through C16). Filled with C18. Gradual sides and a concave base.	Trench 5
C18	Fill of linear ditch C17. Grey mottled clayey silt.	Trench 5
C19	Stone drain, oriented NNE-SSW, 0.35m wide. Filled with C20.	Trench 5
C20	Fill of drain C19. Angular stones, average diameter c.0.1m.	Trench 5
C21	Terminal of gully, orientation NNE-SSW. Width 1m x 0.35m deep, gradual sides. Filled with C22.	Trench 5
C22	Mottled brown clayey sand, occasional land-snail fragments. Fill of gully C21.	Trench 5
C23	Stone drain oriented NNE-SSW. Filled with C24. 0.25m wide	Trench 5
C24	Fill of drain C23. Rounded stones up to 0.1m diameter and occasional bricks.	Trench 5
C25	Linear drainage ditch, oriented NNE-SSW. 1.2m wide x 0.4m deep. Steep sides and flat base. Very similar to C27, 7m to the SE. Filled with C26.	Trench 5
C26	Fill of drainage ditch C25. Light mid-brown clayey sand, some small stones & occasional land-snails.	Trench 5
C27	Linear drainage ditch, oriented NNE-SSW. Very similar to C25. 1.65m wide x 0.4m deep. Steep sides and flat base. Filled with C28.	Trench 5
C28	Fill of drainage ditch C27. Light mid-brown silty sand, frequent modern inclusions (glass & pottery).	Trench 5
C29	Modern made ground, containing various building debris, sealing the original topsoil layer. Up to 0.75m deep.	Trenches 4, 3 & 1

C30	Yellow-orange sandy subsoil up to 0.4m deep.	Trenches 4, 3 & 1
C31	Yellow-grey silty sand subsoil, up to 0.3m deep	Trench 2
C32	Shallow linear ditch oriented E-W. 2m wide x 0.35m deep, gradual sides and concave base. Filled with C33.	Trench 2
C33	Fill of linear ditch C32. Light brown, gritty, silty sand, occasional inclusions of red brick fragments.	Trench 2
C34	Linear drainage feature, oriented NW-SE, 0.7m wide x 0.4m deep. Filled with C35.	Trench 2
C35	Fill of drain C34. Dark brown humic sandy soil with roots, snail shells & modern inclusions.	Trench 2
C36	Shallow linear drain, oriented E-W, 0.35m wide x 0.15m deep, light brown clayey sand.	Trench 2
C37	Light brown clayey sand, fill of drain C36	Trench 2
C38	Drain filled with C39. Oriented roughly NNE-SSW, 0.4m wide.	Trench 1
C39	Fill of drain C38, gravel and black wavin pipe.	Trench 1
C40	Drain / small linear ditch, oriented NE-SW. 1.2m wide x 0.45m deep. Filled with C41 and C42.	Trench 1
C41	Basal fill of drain / ditch C40. Deposit of stones and brick fragments along the southern side of the cut.	Trench 1
C42	Upper fill of drain / ditch C40. Light brown silty sand with inclusions of snail shell.	Trench 1
C43	Drain oriented roughly E-W, filled with C44. 0.4m wide. Cuts through pit C45.	Trench 1
C44	Fill of drain C43. Mixed soil at the top, over stones and a terracotta pipe in the base.	Trench 1
C45	Irregular pit filled with C46 and C47. 2.2m x 1.3m x 0.45m deep. Truncated by drains C43 and C38.	Trench 1
C46	Upper fill of pit C45, yellow grey silty clay, 0.25m deep.	Trench 1
C47	Lower fill of pit C45, grey silty clay with inclusions of burnt stone and charcoal, 0.2m deep.	Trench 1
C48	Shallow, narrow linear feature oriented NE-SW, possibly a furrow. 0.47m wide x 0.17m deep. Filled with C49.	Trench 1
C49	Fill of C48, yellow silty sand, no inclusions.	Trench 1
C50	Linear gully, oriented N-S. Natural drainage feature, filled with C51. 0.3m wide x 0.2m deep.	Trench 8
C51	Fill of C50. Light-mid yellow grey sand. Sterile.	Trench 8
C52	Mid-brown silty sand subsoil, under C16, over C2, 0.2m deep	Trench 9
C53	Natural gully, filled with C54. Oriented roughly east-west. 0.45m wide x 0.12m deep.	Trench 9
C54	Fill of C53. Light brown-yellow sterile sandy fill.	Trench 9
C55	Stone drain, filled with C56. Oriented roughly NW-SE, 0.24m wide x 0.19m deep.	Trench 9
C56	Fill of drain C55. Angular and rounded stones, some broken red bricks.	Trench 9
C57	Cut for stone drain, oriented roughly east-west. 0.28m wide x 0.28m deep. Filled with C58.	Trench 10
C58	Upper fill of drain C57. Light brown yellow silty sand.	Trench 10
C59	Lower fill of drain C57. Angular stones.	Trench 10

C60	Natural gully, oriented roughly northeast-southwest. 0.45m wide x 0.25m deep. Filled with C61.	Trench 10
C61	Fill of natural gully C61. Yellow sterile sand.	Trench 10
C62	Modern drainage cut oriented roughly north-south. 0.6m wide x 0.4m deep. Filled with C63.	Trench 10
C63	Fill of C62. Mix of topsoil and redeposited natural subsoil with black wavin pipe in the base. Inclusions of modern pottery and brick fragments.	Trench 10
C64	Linear cut, probable furrow, oriented east-west, 0.24m wide x 0.06m deep. Filled with C65.	Trench 10
C65	Fill of probable furrow C64. Moderately compacted grey brown silty sand. Inclusions of brick fragments.	Trench 10

Appendix 5 – Site Application area and Archaeological Investigations