

## **9.0 TRAINING PROVISIONS**

A member of the construction team will be appointed as the RM to ensure commitment, operational efficiency and accountability in relation to waste management during the C&D phases of the development.

### **9.1 Waste Manager Training and Responsibilities**

The nominated RM will be given responsibility and authority to select a waste team if required, i.e. members of the site crew that will aid them in the organisation, operation and recording of the waste management system implemented on site.

The RM will have overall responsibility to oversee, record and provide feedback to the client on everyday waste management at the site. Authority will be given to the RM to delegate responsibility to sub-contractors, where necessary, and to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and material salvage.

The RM will be trained in how to set up and maintain a record keeping system, how to perform an audit and how to establish targets for waste management on site. The RM will also be trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and be knowledgeable in how to implement this RWMP.

### **9.2 Site Crew Training**

Training of site crew in relation to waste is the responsibility of the RM and, as such, a waste training program should be organised. A basic awareness course will be held for all site crew to outline the RWMP and to detail the segregation of waste materials at source. This may be incorporated with other site training needs such as general site induction, health and safety awareness and manual handling.

This basic course will describe the materials to be segregated, the storage methods and the location of the Waste Storage Areas (WSAs). A sub-section on hazardous wastes will be incorporated into the training program and the particular dangers of each hazardous waste will be explained.

## **10.0 TRACKING AND TRACING / RECORD KEEPING**

Records should be kept for all waste material which leaves the site, either for reuse on another site, recycling or disposal. A recording system will be put in place to record the waste arisings on Site.

A waste tracking log should be used to track each waste movement from the site. On exit from the site, the waste collection vehicle driver should stop at the site office and sign out as a visitor and provide the security personnel or RM with a waste docket (or Waste Transfer Form (WTF) for hazardous waste) for the waste load collected. At this time, the security personnel should complete and sign the Waste Tracking Register with the following information:

- Date
- Time
- Waste Contractor

- Company waste contractor appointed by, e.g. Contractor or subcontractor name
- Collection Permit No.
- Vehicle Reg.
- Driver Name
- Docket No.
- Waste Type
- EWC / LoW

The waste vehicle will be checked by security personal or the RM to ensure it has the waste collection permit no. displayed and a copy of the waste collection permit in the vehicle before they are allowed to remove the waste from the site.

The waste transfer dockets will be transferred to the RM on a weekly basis and can be placed in the Waste Tracking Log file. This information will be forwarded onto the FCC Waste Regulation Unit when requested.

Alternatively, each subcontractor that has engaged their own waste contractor will be required to maintain a similar waste tracking log with the waste dockets / WTF maintained on file and available for inspection on site by the main contractor as required. These subcontractor logs will be merged with the main waste log.

Waste receipts from the receiving waste facility will also be obtained by the site contractor(s) and retained. A copy of the Waste Collection Permits, CORs, Waste Facility Permits and Waste Licences will be maintained on site at all times and will be periodically checked by the RM. Subcontractors who have engaged their own waste contractors, should provide the main contractor with a copy of the waste collection permits and COR / permit / licence for the receiving waste facilities and maintain a copy on file, available for inspection on site as required.

## **11.0 OUTLINE WASTE AUDIT PROCEDURE**

### **11.1 Responsibility for Waste Audit**

The appointed RM will be responsible for conducting a waste audit at the site during the C&D phase of the proposed development. Contact details for the nominated RM will be provided to the FCC Waste Regulation Unit after the main contractor is appointed and prior to any material being removed from site.

### **11.2 Review of Records and Identification of Corrective Actions**

A review of all waste management costs and the records for the waste generated and transported off-site should be undertaken mid-way through the construction phase of the proposed development.

If waste movements are not accounted for, the reasons for this should be established in order to see if and why the record keeping system has not been maintained. The waste records will be compared with the established recovery / reuse / recycling targets for the site. Each material type will be examined, in order to see where the largest percentage waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how the targets can be achieved.

Upon completion of the C&D phase, a final report will be prepared, summarising the outcomes of waste management processes adopted and the total recycling / reuse / recovery figures for the development.

## **12.0 CONSULTATION WITH RELEVANT BODIES**

### **12.1 Local Authority**

Once construction contractors have been appointed and have appointed waste contractors, and prior to removal of any C&D waste materials off-site, details of the proposed destination of each waste stream will be provided to the FCC Waste Regulation Unit.

FCC will also be consulted, as required, throughout the excavation and construction phases in order to ensure that all available waste reduction, reuse and recycling opportunities are identified and utilised and that compliant waste management practices are carried out.

### **12.2 Recycling / Salvage Companies**

The appointed waste contractor for the main waste streams managed by the construction contractors will be audited in order to ensure that relevant and up-to-date waste collection permits and facility registrations / permits / licences are held. In addition, information will be obtained regarding the feasibility of recycling each material, the costs of recycling / reclamation, the means by which the wastes will be collected and transported off-site, and the recycling / reclamation process each material will undergo off-site.

### 13.0 REFERENCES

1. Waste Management Act 1996 (No. 10 of 1996) as amended.
2. Protection of the Environment Act 2003, (No. 27 of 2003) as amended.
3. Litter Pollution Act 1997 (S.I. No. 12 of 1997) as amended
4. Eastern-Midlands Region Waste Management Plan 2015 – 2021 (2015).
5. Department of Environment and Local Government (DoELG) *Waste Management – Changing Our Ways, A Policy Statement* (1998).
6. Forum for the Construction Industry – *Recycling of Construction and Demolition Waste*.
7. Department of Communications, Climate Action and Environment (DCCAE), *Waste Action Plan for the Circular Economy - Ireland's National Waste Policy 2020-2025* (Sept 2020).
8. DCCAE, *Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less'* (2021)
9. Environmental Protection Agency (EPA) *'Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects'* ( 2021)
10. Department of Environment, Heritage and Local Government, *Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects* (2006).
11. FÁS and the Construction Industry Federation (CIF), *Construction and Demolition Waste Management – a handbook for Contractors and site Managers* (2002).
12. Fingal County Council (FCC), *Fingal Development Plan 2017-2023* (2017)
13. Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended
14. EPA, *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* (2015)
15. Council Decision 2003/33/EC, establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC.
16. Environmental Protection Agency (EPA), *National Waste Database Reports 1998 – 2012*.
17. EPA and Galway-Mayo Institute of Technology (GMIT), *EPA Research Report 146 – A Review of Design and Construction Waste Management Practices in Selected Case Studies – Lessons Learned* (2015).

# ER APPENDIX 9

past | present | future

ACS



ARCHAEOLOGICAL  
CONSULTANCY  
SERVICES UNIT

**Archaeological Impact Assessment of proposed  
220kV Gas Insulated Switchgear (GIS) Substation and  
Underground 220kV Transmission Line Connection to the  
Existing Cruiserath 220kv Substation at  
Kilshane, Bay, Hollywoodrath, Tyrrelstown, and Cruiserath  
Co. Dublin**

**Client**

Kilshane Energy Ltd.

ITM: 710899, 742533 (E); 710234, 742328 (S); 707525, 741755 (W)

RMP/SMR Nos: DU013-046002-, DU013-046001-, DU013-045001-,  
DU013-045002-, DU013-043----, DU013-042

Magda Lyne

7 September 2022

ACSU Ref.: 2220

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## PROJECT DETAILS

<b>Project</b>	A proposed 220kV Gas Insulated Switchgear (GIS) Substation and Underground 220kV Transmission Line Connection to the Existing Cruiserath 220kv Substation at Kilshane, Bay, Hollywoodrath, Tyrrelstown, and Cruiserath, Co. Dublin
<b>Report Type</b>	Archaeological Impact Assessment
<b>Archaeologist</b>	Magda Lyne
<b>Client</b>	Kilshane Energy Ltd.
<b>Site</b>	Kilshane, Bay, Hollywoodrath, Tyrrelstown, and Cruiserath, Co. Dublin
<b>Townlands</b>	Kilshane, Bay, Hollywoodrath, Tyrrelstown, and Cruiserath
<b>ITM Refs</b>	170899, 742533 (E); 710234, 742328 (S); 707525, 741755 (W)
<b>RMP/SMR Nos</b>	DU013-046002-, DU013-046001-, DU013-045001-, DU013-045002-, DU013-043----, DU013-042
<b>Protected Structure No.</b>	N/A
<b>Report Date</b>	7 September 2022
<b>ACSU Ref.</b>	2220

Revision	Date	Description	Status	Author	Reviewed	Approved
0	07.09.2022	Assessment Report	Final	M.L	L.C	D.M

FINGAL COUNTY COUNCIL  
PLANNING DEPARTMENT  
*Full AIA*  
11 JAN 2023  
ADDITIONAL INFORMATION  
REGISTRY



## NON-TECHNICAL SUMMARY

This report presents the findings of an archaeological impact assessment undertaken on behalf of the client to accompany a planning application for a proposed 220kV Gas Insulated Switchgear (GIS) Substation and Underground 220kV Transmission Line Connection to the Existing Cruiserath 220kv Substation at Kilshane, Bay, Hollywoodrath, Tyrrelstown, and Cruiserath, Co. Dublin (710899, 742533 (E); 710234, 742328 (S); 707525, 741755 (W)). This development is associated with the proposed Open Cycle Gas Turbine at Kilshane, Co. Dublin. This assessment is based on the findings of a desktop study and aims to identify and describe known and potential archaeological and cultural heritage constraints within the study area and offer recommendations for the mitigation of such potential impacts.

The development is to consist of a 220kV Gas Insulated Switchgear (GIS) substation, associated Air Insulated Switchgear (AIS) and an underground 220kV transmission line connection from the proposed GIS substation to the existing Cruiserath 220kV GIS substation. The line extends over c. 4.69 km and will connect the proposed GIS Kilshane Substation (ITM 710899, 742533) to the existing Cruiserath GIS substation (ITM 707525, 741755) and run within Kilshane Road, Bay Lane, Cherryhound Tyrellstown Link Road and Church Road.

The location of the proposed GIS Kilshane Substation and a portion of the proposed service is within the proposed Open Cycle Gas Turbine at Kilshane, currently a greenfield site, that was subject to geophysical survey 22R0092. The survey identified an enclosure and archaeological activity. Subsequent test trenching 22E0248 confirmed the presence of enclosure complex and associated features, preservation by record (excavation) is being carried out at present. The service line runs within the archaeologically sensitive area; the portion along Bay Lane is located to the south of a burial ground DU014-048--- with fields adjacent to the north (22R0201; 22R0059) and south (21R0134, 21E0398, 21E0580, 22E0045) of the lane subject to archaeological investigations with significant previously unknown archaeological sites identified. The portion along Cherryhound & Tyrellstown Link Road was subject to archaeological assessments, including a geophysical survey (08R017) and subsequent test trenching (07E1147) associated with the construction of the link road. These identified a number of archaeological monuments; that were excavated under licences E3917 - E3920. The excavated monuments included pit DU013-046002-, Excavation – miscellaneous DU013-046001-, two cremation pits DU013-044002-; DU013-045002-, Kiln DU013-044001- and ring-ditch DU013-045001-. The kiln was dated to the middle Iron Age (BC 160 – AD 50); while the ring ditch returned a Middle Bronze Age date (BC 1370-1110). Medieval activity (DU013-046001-), dating to the 13th and 14th centuries based on material evidence, was represented by two ditches, a pit and a deposit of clay, and might be linked to the former house, depicted on the Down Survey 1655-56, a monument House - 16th/17th century DU014-089----. Investigations to the south of the link road, adjacent to the roundabout with Ratoath Road exposed a number of enclosures and barrows of Bronze Age date (16E0125). The site contains no protected structures listed in the Fingal Development Plan 2017 – 2023 or sites listed within the National Inventory of Architectural Heritage (NIAH). The nearest such structure is located c. 0.66km south of the west extent of the development and consists of Mulhuddart Church (in ruins) and Graveyard (RPS 670).

Cartographic and aerial imagery was reviewed as a part of this assessment. Kilshane Road, Bay Lane and Church Road were depicted since the 1760 mapping. These roads have since been upgraded and connected by the Cherryhound Tyrellstown Link Road, which was in use by 2013; prior, the route was a part of agricultural fields. It appears that a number

of townland boundaries depicted on the OS mapping located in this area correspond with the boundaries depicted on the Down Survey Map of 1655-56. Furthermore, some potential cropmarks on aerial photography to the north of the link road, within agricultural fields were noted, including three possible enclosures, a possible ring-ditch, possible mounds or large pits, linear and curvilinear anomalies, and a northwest to southeast anomaly corresponding with a road depicted on the 1836 OS map, realigned by the time of the 1906 OS map.

The archaeological investigations at the location of the GIS Kilshane Substation are currently ongoing. The service line will run largely within the footprint of the existing roads. Due to the nature and location of the works test trenching is not recommended. The western portion will run within the footprints of upgraded Church Road and modern Cherryhound Tyrellstown Link Road. This is unlikely to impact any archaeological remains. Kilshane Rd and Bay Lane were not upgraded in recent years, however. Furthermore, an area of increased potential was identified along Bay Lane, particularly the stretch in the environs of the archaeological monument, Burial Ground DU014-048----

In order to mitigate the potential impact on archaeological remains, monitoring of all groundworks should be conditioned within any grant of permission for this development. This should be carried out by a licence eligible archaeologist working under licence from the Department of Housing, Local Government and Heritage.

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## 1. INTRODUCTION

This report presents the findings of an archaeological impact assessment undertaken on behalf of the client to accompany a planning application for a proposed 220kV Gas Insulated Switchgear (GIS) Substation and Underground 220kV Transmission Line Connection to the Existing Cruiserath 220kv Substation at Kilshane, Bay, Hollywoodrath, Tyrrelstown, and Cruiserath, Co. Dublin (ITM 710590, 472630 (E); 710234, 742328 (S); 707525, 741755 (W); Figures 1-2). This assessment is based on the findings of a desktop study and aims to identify and describe known and potential archaeological and cultural heritage constraints within the study area and offer recommendations for the mitigation of such potential impacts.

The development is to consist of a 220kV Gas Insulated Switchgear (GIS) substation, associated Air Insulated Switchgear (AIS) and an underground 220kV transmission line connection from the proposed GIS substation to the existing Cruiserath 220kV GIS substation. The line extends over c. 4.69 km, and will connect the proposed GIS Kilshane Substation (ITM 710899, 742533) to the existing Cruiserath GIS substation (ITM 707525, 741755) and run within Kilshane Road, Bay Lane, Cherryhound Tyrrelstown Link Road and Church Road.

The site is located within a sensitive area with a number of monuments listed in the Record of Monuments and Places and the Sites and Monuments Record as well as sites that were previously unknown and identified as a result of archaeological investigations and subsequently excavated.

## 2. THE DEVELOPMENT

### 2.1 Proposal

This archaeological impact assessment has been carried out in relation to a proposed 220kV Gas Insulated Switchgear (GIS) Substation and Underground 220kV Transmission Line Connection to the Existing Cruiserath 220kv Substation.

*The proposed development primarily comprises the provision of a 220kV Gas Insulated Switchgear (GIS) substation and associated Air Insulated Switchgear (AIS) compound on lands at Kilshane Road, Kilshane, Finglas, Dublin 11, and an underground 220kV transmission line connection from the proposed GIS substation to the existing Cruiserath 220kV GIS substation, located within an overall landholding bound to the south by the R121/Cruiserath Road, to the west by the R121/Church Road and to the north by Cruiserath Drive, along with all associated and ancillary works.*

*The proposed development is located within the townlands of Kilshane, Bay, Hollywoodrath, Tyrrelstown, and Cruiserath. The application site has an area of c. 13 hectares.*

*The proposed 220kV GIS substation is to be located on lands at Kilshane Road, Kilshane, Finglas, Dublin 11, and will include a proposed GIS substation building with a gross floor area of 475 sq.m, within a c. 2.6 metre fenced compound. The proposed GIS substation building has a maximum height of c. 13.5 metres, excluding lighting protection masts c. 2 metres in height at roof level. The GIS substation building will accommodate a switchgear room, control room, battery room,*

workshop, generator room, and staff facilities. A 220kV AIS compound, including AIS electrical equipment within a fenced compound will be provided to the east of the GIS substation.

The proposed underground 220kV transmission line will run west from the proposed substation site at Kilshane Road, following Bay Lane to the west, before turning south at the roundabout at the western end of Bay Lane. The route then extends southwest along public roads to the R121. The transmission line then proceeds south along the R121 until it reaches Cruiserath substation, leaving the road and entering the substation compound from the west. The proposed underground 220kV transmission line will have a length of c. 4.69 km.

The development includes adjacent access paths, connections to the two substations (existing and proposed), provision of a medium voltage rural supply to the GIS substation (extending to the southwest of the GIS substation along Kilshane Road), surface treatments, joint bays and communications chambers on the transmission line route, services, 2 no. parking spaces within the substation compound, all associated construction works, and all ancillary works.

## 2.2 Archaeological Requirements

This archaeological impact assessment was carried out at the request of the client to accompany a planning application. It was undertaken to assess the archaeological potential of the site, and determine if any archaeological constraints are apparent in relation to the proposed development.

## 2.3 Methodology

A desktop survey was carried out involving a literature review and consultation of the Record of Monuments and Places (RMP) and Sites and Monuments Record (SMR) compiled and updated by the National Monuments Service and the National Historic Properties Service of the Department of Housing, Local Government and Heritage. The RMP is comprised of manuals that list all known archaeological sites and monuments in a county with accompanying maps (based on Ordnance Survey (OS) six-inch maps) locating these sites. All sites included in the RMP are protected under the National Monuments Acts (1930–2004). The SMR consists of all records stored in the Archaeological Survey of Ireland national database and is presented in the Historic Environment Viewer, which also includes sites listed in the National Inventory of Architectural Heritage. The last published RMP for County Dublin is dated 1998, and as such many of the sites listed in the SMR are scheduled for inclusion in the next revision of the RMP.

The Topographical Files of the National Museum of Ireland were also consulted to assess the area's archaeological potential. These files list, on a townland basis, all archaeological artefacts in the care of or known to the museum. Such a record can provide evidence for human settlement or activity in the absence of physical remains or documentary references. The results of previous and ongoing archaeological investigations were also taken into account in order to evaluate the level of archaeological remains coming to light in the area. Historical maps held by the Map Library of Trinity College Dublin and aerial photography from the Geological Survey of Ireland were both consulted. These sources can indicate areas of

archaeological potential through features like curving field boundaries, crop marks and soil marks and can provide information regarding the nature and extent of recorded archaeological sites that have become denuded since the early 19th century. Historical maps are also useful in identifying other features of cultural heritage significance.

The *Fingal Development Plan 2017 – 2023* was consulted as this contains a Record of Protected Structures. Further buildings and features of architectural interest in the area that are not included on the Record of Protected Structures are detailed in the National Inventory of Architectural Heritage (NIAH) for County Dublin. The site visit was not carried out.

### 3. ARCHAEOLOGICAL ASSESSMENT

#### 3.1 Archaeological & Historical Background

The area of proposed works spans over townlands of Kilshane, Bay, Hollywoodrath, Tyrrelstown, and Cruiserath; located within the Barony of Castleknock; Cruiserath Kilshane and Tyrrelstown are in the Civil Parish of Finglas while Bay and Hollywoodrath are within the Civil Parish of Mulhuddart. An examination of the Placenames Database of Ireland ([www.logainm.ie](http://www.logainm.ie)) can reveal important information about the natural and cultural heritage of an area. Kilshane (*Cill Sheáin*) indicates a church in the townland and was mentioned in 1326, Bay (*An Bhá the Baye*) was mentioned in 1547 and was depicted on the Down Survey Map of 1654-56, Hollywoodrath (*Ráth an Alabhóidigh*); mentioned in 1534 as Holywoodesrath, Tyrrelstown (*Baile an Tirialaigh*) was mentioned in 1540 as Thurrelstowne, and Cruiserath (*Ráth an Chrúisigh*) was mentioned as le Rath in 1326 and by 1360

The site and wider environs is well represented in the archaeological record, containing evidence for prehistoric, mostly Bronze Age and Medieval remains. For example, a ring-ditch (SMR No. DU013-045001) identified as an anomaly during geophysical survey 08R017, was subject to test trenching 07E1147 and was subsequently excavated E3918; its location is registered as adjacent to the south part of the site. It measured 4.2m internally, a pit with charcoal and cremated bone located within it was dated to the Middle Bronze Age (BC 1370-1110 BC). A circular pit located c. 6m to the southeast of the ring ditch contained charcoal and cremated bone of an adult or older adolescent. Further examples of ring ditch in the form of cropmark were identified within the west part of the site. It is likely additional such features might be still unknown. This is further testified by the results of investigations to the south of the site, identifying a number of previously unknown monuments. During the archaeological investigations, including geophysical survey, test trenching and excavation (16E0125), an area of significant Bronze Age activity was identified. Monuments included truncated remains of a triple-ditched ring barrow measuring c. 32m in diameter, a circular ring ditch or ring barrow measuring between 12-14m and a double-ditched ringfort measuring 45m that was preserved in situ, while tree enclosures measuring between 15 and 35m were excavated (O'Donovan, et al, 2017). Penannular enclosure with southeast entrance had an external diameter of 13m and was dated to middle Bronze Age based on pottery. The ditch had a u-shaped profile and was between 0.7m - 1m wide and 0.2m - 0.5m deep. Associated features included pits and curvilinear trenches forming a structure. The triple ditched Bronze Age ring barrow measured 31.5m. The inner ditch enclosed an area of 6m with centrally located cremation and another cremation to the south. Evidence for recutting the ditches was apparent. The circular ring-barrow measuring 14.5m

was enclosed by a V-shaped ditch measuring 2.5-3.1m in width and 1.5m -1.72m deep. A slot trench was exposed and interpreted as possibly representing a small house foundation or a small ring barrow.

These monuments represent places of burial, ceremony and ritual practices that can date from the Neolithic to the Iron Age, but also continue in use into the early medieval period. Towards the end of the Neolithic and the beginning of the Bronze Age, features known as 'barrows' emerged, and these can be defined as earthen or earth/stone construction mounds with a surrounding ditch or ditches, sometimes with a low external bank, typically less than 30 metres in diameter and most commonly associated with cremation burials (O'Sullivan and Downey 2012). In 2002, in advance of the gas pipeline works from North Dublin to Limerick, ring-ditches/barrows were excavated at Flemingtown, Co. Meath, Dalystown 1, Co. Westmeath, Knockuregare, Co. Limerick and Rath, Co. Dublin (Grogan et al. 2007). All of these sites had substantial ditches, the largest having an external diameter of 38.75m. The excavations provide evidence for this type of funerary site occurring throughout the Bronze Age (2450–800 BC) and highlighted the significance of liminal space for death and burial in the form of ceremonial enclosures. McGarry (2009) states that of all the barrows excavated in Ireland, about half of them have produced the remains of a single person, most commonly found under the mound and central to the barrow. Almost all sites, however, produce cremated human remains spread throughout the fill of the barrow ditches. This can be seen at sites such as Ballybeen, Co. Antrim (Mallory 1984) and Ballydribbeen, Co. Kerry (Dunne 2003). Another interesting feature of barrows is the presence or absence of an 'entrance' or break in the ditch, which provides a causeway into the monument. Entrances are present in a number of ring-ditches and ring-barrows and although the entrance may be orientated in any direction, there is a clear preference for them facing either east or southeast. It must be noted, however, that there are also many instances where entrances are not present, such as Donacarney, Co. Meath (Stirland 2017).

Fulachtaí fia comprise the most commonly discovered evidence for prehistoric settlement across Ireland and represent the use of pyrolithic technology to boil water, with those noted in close proximity to a trough generally interpreted as cooking/industrial sites (Hawkes 2018). These sites generally consist of a low mound of charcoal-enriched soil mixed with an abundance of heat-shattered stones, commonly forming a horseshoe shape in proximity to a trough, and are found in low-lying marshy areas or close to streams. Often these sites have been ploughed out and survive as a spread of heat-shattered stones in charcoal-rich soil with no surface expression. These are often found in wet areas with access to water such as the eastern part of the site. Such feature was excavated to the northeast under licence 13E0010. A pit and amorphous spread of fire cracked stone in a charcoal enriched silty clay fanning with associated trough and hearth were excavated. The trough measuring 0.9m in length and 0.5m in depth returned 2 sigma cal BC 2139-1984.

The landscape of the site also contains a high distribution of early medieval and medieval burial practices and activity/settlement as indicated by the presence of enclosures and excavated pits and kilns. A cemetery, now Burial Ground DU014-048, was identified during gas pipeline monitoring in 1988. The site is located to the north of Bay Lane junction with Kilshane Rd. The area to be impacted upon by the pipeline was excavated, revealing the remains of 123 individuals. Subsequent test trenching was carried out under licence 99E0220, suggesting the burials did not extend eastwards. In recent years, fields adjacent to the north (22R0201; 22R0059) and south (21R0134, 21E0398, 21E0580, 22E0045) of the

lane were subject to archaeological investigations with significant previously unknown archaeological sites identified. The survey of the fields to the north of the lane was successful in identifying the location of a small, ditched enclosure and associated linear responses, and likely relate to the burial ground excavated in 1988 and 1989 (22R0059; Nicholls, 2022) while the field adjacent and to the west of it revealed extensive evidence for ancient occupation, seemingly involving an enclosure, land divisions and other settlement-related activity (22R0201). Early medieval and medieval periods were a time when settlement occurred as dispersed defended homesteads on lakes and across the wider landscape (O'Sullivan et al. 2010). Two large areas were subject to geophysical survey; one measuring 18 hectares located to the south of Kilshane Road (22R0092) and a large area measuring 12 hectares located adjacent to and south of Bay Lane (21R0134); the former identified an enclosure and archaeological activity while the other recorded indications of several enclosures. Following geophysical survey 22R0092 test trenching was carried out 22E0348 confirming the presence of the enclosure complex with associated features and additional deposits, preservation by record was recommended and is ongoing. The other area to the south of Bay Lane, was subject to subsequent investigations (21E0398, 21E0580, and 22E0045), confirming the presence of features of archaeological significance. Test trenching under licence 21E0398 confirmed the presence of a rectilinear enclosure (Site A), a D shaped enclosure, a sub-circular enclosure (Site B), a second larger rectilinear enclosure (Site C), two additional sites; a ditch with charcoal-rich fill, burnt pit and former field system, a linear ditch, two possible curvilinear ditches, a pit and a post-hole (Site E). Sites C, D and E were excavated under licence 21E0580. The enclosure in Site C measured 44m by 37m, with a ditch ranging from 2.5 to 4m in width and 0.8 to 2.4m in depth. The entrance was recorded at the southern side. The ditch at its deepest was just to the west of the entrance; it was suggested that this area also functioned as well. Pits, gullies and disturbed areas of burning were also preserved by record. Finds included a fragment of lignite bracelet, a fragment of a polished stone axe and several flint artefacts. The site was provisionally dated to the Early Medieval Period, and is awaiting a radiocarbon date. Site D comprised of two pits, a shallow ditch and a large and deep pit. The pit was interpreted as a waterhole and measured 6.05 by 7.62m and was 1.68m deep. Both smaller pits contained charred cereal, one interpreted as a cereal drying kiln. These were provisionally dated to the later Iron Age/Early Medieval Period. Site E was relatively modern in date and consisted of linear ditches, gullies and drains forming part of a field system. The remaining sites are being excavated under a separate licence (22E0045). Three enclosures visible as cropmarks with no surface expression were identified as cropmarks within the field adjacent to Ratoath Rd and link road. Furthermore, features such as pits, ditches and kilns representing previously unknown archaeological features were identified as a part of archaeological assessments previously and excavated within footprint of the road. Suggesting additional such features might be present within the site.

A kiln is a structure designed specifically for the drying of a commodity. Hot air, from an open fire, reaches the cereals within the drying chamber via the flue. Experiments by Monk and Kelleher (2005), on keyhole-shaped kilns, have shown that a number of factors were essential in determining their success when drying cereals. An important aspect was the temperature of the air, when entering the kiln, and this was influenced by such things as the weather, the direction of the wind and the proximity of the fire. It was demonstrated that the temperature could be controlled by placing the fire within a depression, just before the mouth of the flue, and through the regular opening of the roof on the kiln superstructure. The wind could be controlled through the correct alignment of the kiln and by the use of windbreaks. The flue length was a key factor because



longer flues were less likely to result in the accidental burning of the cereals. For shorter flues, baffle stones were sometimes used as they prevented sparks from the fire reaching the drying chamber. The more successful experiments were also carried out in kilns where the drying chamber was set at a higher level than the flue mouth. The orientation of the kiln and the location of the drying chamber, in relation to the flue, were essential in maximising efficiency. Orientation was influenced by local factors such as topography, wind direction and the proximity of settlement. In their study of kiln orientation, Monk and Kelleher (2005) have demonstrated that the majority were aligned either north/south or east/west. It was also noted that many were set into slopes, with the chambers upslope, or boundaries such as ditches or field fences.

Kilns are essential for cereal crop processing and especially to ripen the crop after damp harvests and/or in short growing seasons. However, the drying of cereals prior to threshing, following a damp harvest or a short growing season, is only one aspect of a kiln's function. An equally important function of the cereal-drying kiln is to harden the grain to allow for effective milling (Monk 1994). This was relevant both for small-scale and larger-scale production as grinding the grain, without prior drying, was more difficult and resulted in the clogging of the quern surface. Cereal-drying kilns were used for the production of malt and evidence for this has been detected at Corbally, Co. Kildare (Tobin 2003). They were also utilised for the drying of grain, to reduce the moisture content prior to storage, and to fumigate for insect pests (Monk 1994).

Four such monuments were excavated within the site and nearby, the earliest kiln, DU013-044001- produced a middle Iron Age date (160 BC – AD 50; O'Hara R. 2008). In addition, early medieval kilns were also excavated (18E0662 ;03E1360, 13E0010). The kiln excavated under licence 18E0662 was interpreted as cereal drying kiln and recorded as a single earth fast burnt pit feature that returned date of cal AD589-659. Two early medieval kilns were excavated under licence 03E1360. One was reused on a number of occasions, and the other was a smaller keyhole-shaped kiln with no flue. The fills of the latter kiln contained a latticework of wooden stakes likely representing a drying rack or superstructure associated with the kiln. Two corn drying kilns, excavated under licence 13E0010, were also dated to the early medieval period (2-sigma cal 1045-1093 AD). The concentration of kilns in such relatively small area, is indicative of a rise in the use of arable farming, particularly in the early medieval period. Monk and Kelleher (2005) have devised a preliminary chronological framework for the development of cereal-drying kilns in Ireland. They suggest that figure-of-eight kilns, and related dumbbell kilns, date to the early medieval period followed by keyhole-shaped kilns which are predominantly associated with the high middle-ages. The problems pertaining to devising such a chronological framework are related to the lack of fully published excavation reports. This problem is furthered because drying kilns rarely produce evidence for their close dating as samples taken are usually derived from later deposits. When radiocarbon dates are forthcoming, it is not clear what material was used and from what layer the sample was taken (Monk and Kelleher 2005). Bearing these factors in mind, the following chronological sequence for the development of cereal-drying kilns in Ireland is a preliminary one and may be subject to change with increased publication and more precise sampling strategies. Monk and Kelleher's (2005) dating of figure-of-eight and keyhole kilns, to the early and later middle ages respectively, is followed although there is preliminary evidence now to date figure-of-eight kilns to an approximate period between the fourth and seventh centuries. Also there is evidence for oval and sub-oval kilns dating to the Iron Age (such as DU013-044001-), and that these were precursors for the slightly later figure-

of-eight and dumbbell types. Indeed, both types of kiln may have functioned contemporaneously for a short period until it was realised perhaps that the figure-of-eight kiln functioned more efficiently.

Medieval activity recorded as Excavation – miscellaneous DU013-046001-, included an early medieval pit (AD660-780) and two linear ditches containing locally made pottery dated to the 13th and 14th centuries. The activity might be linked to the former house, depicted on the Down Survey 1655-56, a monument House - 16th/17th century DU014-089---- located just outside and to the east of the site. It is possible that the building was a tower house; however, the monument location is uncertain. It was suggested that the site of Bay House indicated on the 1836 OS map might be the location; however, no remains of the tower house were identified, and the monument is not scheduled for inclusion in the next revision of the Record of Monuments and Places.

Three possible enclosures were identified as cropmarks and have no surface expression and might date to the prehistoric or medieval period. Ditched enclosures are seen in the form of ringforts and non-circular enclosures. The Ringfort, as the name suggests, implies a circular enclosure with a minimum of one ditch and possible accompanying banks. They were generally circular, measuring circa. 24 – 60 metres in diameter. Early Irish laws stated that circularity was a feature of the model ringfort (Stout 1997). However, with the increase of development, more and more non-circular enclosures are coming to light. Therefore, for the purpose of this discussion, all of the above enclosures will be discussed under the category 'ditched enclosures'. The majority of early medieval ditched enclosures date to the sixth to ninth centuries AD, and we see a significant decline in their use in the tenth century (O'Sullivan, Nicholl 2010). Though a site in Laytown, Co. Meath (McConway, 2002) could have a fourth-century date, other sites such as Ballynacarriga, Co. Cork (Noonan, 2004) and Raystown, Co. Meath (Seaver 2005) were probably occupied from the 5th century well into the 11th century.

Ditched enclosures are generally regarded as enclosed farmsteads, and the defences are thought to have been built in order to protect against cattle raids (Stout 1997). Some have provided little evidence for structures, suggesting the enclosure was used for storing cattle, known as a 'bodun', though the majority provide evidence to suggest they were inhabited settlements, with houses, farmyards, outbuildings and animals (O'Sullivan, Nicholl 2010). Excavated items retrieved from ringforts are of a domestic, craft or agricultural nature (Monk, 1995). Some larger sites such as Raystown, Co Meath fulfilled many functions; there was evidence for animal husbandry, cereal and grain processing, milling, burial and metallurgy (Seaver, 2016).

Ditched enclosures are the commonest field monument in Ireland. The majority of ditched enclosures were univallate with one bank and fosse. In many cases, the banks do not survive. There are, however, bivallate enclosures, for example, Cloonaboy, Co. Mayo (Gillespie & Kerrigan, 2010) and multivallate enclosures, such as Garranes, Co. Cork (O'Riordan 1942). While ringforts were generally 24 – 60 metres in diameter, the majority of non-circular enclosures were between 50m and 70 metres in diameter. Ditched enclosures tend to be situated on sloping or well-drained hilly ground with good views (Stout, 1997). Ditched enclosures usually are found in clusters within a townland (Edwards, 1990).

Ditched enclosures usually have an entrance at the southeast. This is to avoid the prevailing cold westerly and northerly winds that the enclosure would be exposed to (Stout 1997). The entrance passage at Rath II at Ballypalady, Co. Antrim ranged from 0.76m at the outer end to 1.5m at the inner opening, suggesting it was not intended for keeping large livestock (O'Sullivan, Nicholl, 2010).

Evidence from excavations shows that enclosing ditches were, in some cases, allowed to silt up and had refuse deliberately dumped into them. Layers of slag were dumped into the ditch at Lisleagh, Co. Cork (Monk, 1995).

Many sites, like that at Lissachiggel, Co. Louth had either cobbles or paving stones providing a dry passage into the enclosure. These entrances were known in early Irish literature and legal sources as the 'airdrocht' and were to be kept clean (O'Sullivan, Nicholl, 2010). O'Sullivan wrote that it was not unusual to see pathways laid within the interior to steer movement towards a particular direction and "upon entering the site, a person was often persuaded by laid pathways to move directly and immediately to the house doorway" (ibid.). The pathway was meant to be kept clean and dry, and likely, ditches and gullies would function as drainage features to keep the area dry.

Early Medieval houses within ditched enclosures tended to be circular or round, made of stone or post-and-wattle walls. The roofs were thatched with reeds, turf or straw. According to the eight-century law text *Crith Gablach*, a typical farmer's house was 6-8 metres in diameter. Archaeological evidence shows that the majority were 4 to 5 metres in diameter, and some were significantly larger, at 6 to 10 metres in diameter (ibid). As pointed out by Mc Cormick, Kerr, Mc Clatchie and O'Sullivan, because of the basket-like construction, any recuts or changes to the early medieval houses are rarely seen in the archaeological record (McCormick, Kerr, McClatchie, O'Sullivan 2011). It was likely that the lifespan of a medieval house would have lasted for just a short period of time (20 to 30 years); with good maintenance, a house could have stood for 50 to 60 years (O'Sullivan, Nicholl, 2010).

Associated with the enclosures and often found in its environs are fire pits, storage pits, refuse pits, a cooking pit and cereal-drying kilns. O'Sullivan and Nicholls wrote that pits are "one of the more enigmatic elements to be found within the enclosure...their function...difficult to discern. They would have been used for a variety of purposes; probably reused and cleaned-out many times and countless, no doubt, had multiple functions over their lifetime" (ibid). According to Mc Cormick, Kerr, Mc Clatchie and O'Sullivan cereal drying kilns are generally not associated with ditched enclosures, however there are several examples of sites with associated kilns, such as Johnstown 1, Co. Meath, Gortygrigane, Co. Tipperary and Camlin, Co. Tipperary (Cited in McCormick, Kerr, McClatchie & O'Sullivan 2011).

In the post-medieval period, the portions of the site were a part of demesne lands. Including Bay Ho., and two extensive areas of Hollywoodrath House and Tyrrelstown Ho. both with associate gardens and Gate Lodges; all depicted on the 1836 map. A number of boundaries shown represent townland boundaries and appear to correspond with the boundaries depicted on the Down Survey Map of 1655-56. The boundaries appear to remain unchanged; this is likely as some of these also serve as wet ditches removing excess water and feeding it to the Ward River.

### 3.2 Recorded Monuments

A number of monuments are recorded within the footprint of proposed works. These were identified as a result of archaeological investigations within the footprint of Cherryhound Tyrrelstown Link Road (geophysical survey 08R017; test trenching 07E1147 and were subsequently excavated under licences E3917 - E3920), including pit DU013-046002-; excavation miscellaneous DU013-046001-; ring ditch DU013-045001- cremation pit DU013-045002-, cremation pit DU013-043----, Kiln – corn -drying DU013-042----

Furthermore, a monument House - 16th/17th century DU014-089---- is located just outside and to the east of the site and Burial ground DU014-048---- lies just to the north of Bay Lane.

The following is a list of relevant archaeological monuments located in the environs of the site. The entries have been revised and updated in the light of recent research and are available in the National Monuments Service Archaeological Survey Database (<http://maps.archaeology.ie/historicenvironment/>).

Table 1: Recorded Monuments in the environs of the site

RMP No./ SMR No.	Class/Site Type	Description
DU014-048----	Burial ground	Topsoil removal prior to construction of a gas pipeline in 1988 exposed the remains of several skeletons. The follow-up excavations revealed 123 skeletons, many of whom were children and adolescents (Gowen 1989, 17). These were aligned roughly east-west in the Christian manner, many haphazardly placed. Some of the individuals had stones around and under the heads. The presence of 'pillowstones' may indicate an 9th-13th-century date for the site.
DU013-046002-	Pit	The site was subject to geophysical survey (08R017) and excavation (Licence no. E3919) in advance of the construction of the Tyrrelstown to N2 Link Road. This monument consisted of a rectangular pit (1.94m x 0.95m) containing occasional charcoal identified as alder, ash, hazel and wild cherry. Charred oat grains were abundant and had been processed prior to deposition in the pit. Burnt animal bone was also recovered indicating domestic use. The pit was radiocarbon dated to AD 660-780 (O'Hara R. 2008, 4).
DU013-046001-	Excavation - miscellaneous	The site was subject to geophysical survey (08R017) and excavation (Licence no. E3919) in advance of the construction of the Tyrrelstown to N2 Link Road. This monument consisted of two ditches, a collection of isolated pit features and a deposit of clay (8.65m x 5.65m) containing medieval pottery. The pottery assemblage is locally-produced ware dated to the 13th and 14th centuries AD. While there was no conclusive settlement features it is possibly linked to medieval settlement at the former location of Bay House (DU014-089----) (O'Hara R. 2008, 3).
DU014-089----	House - 16th/17th century	The Down Survey (1655-6) map shows a dwelling in this townland. This may be on the site of Bay House which is marked on the 1937 OS 6 inch edition as 'Bay House (in Ruins)'. Now a concrete works. Excavation (Licence no. E3919) in the vicinity in advance of road development, uncovered medieval activity.
DU013-042----	Kiln - corn-drying	A corn-drying kiln associated with a collection of pits and gullies was excavated ahead of the Tyrrelstown to N2 Cherryhound Interchange link road in 2008 (E3920). The kiln was a SE-NW orientated, steep-sided hollow with a concave

RMP No./ SMR No.	Class/Site Type	Description
		oxidised base. It contained four stratified deposits representing successive phases of use. Charcoal remains of alder, hazel, cherries, elm and Maloideae were present. It was radiocarbon dated to AD1020-1180 . A single piece of flint and a single fragment of Dublin-type ware were recovered in the topsoil (O' Hara , R. 2011, 104).
DU013-044001-	Kiln	Excavated (Licence no. E3918) in advance of the construction of the Tyrrelstown to N2 Link Road, this monument consisted of an oval kiln. (1.2m x 0.5m). It contained a single mixed deposit including charcoal identified as alder, hazel, ash, cherry/blackthorn and willow/poplar. No charred grain was recovered. The kiln was radiocarbon dated to the middle Iron Age (160 BC – AD 50) (O'Hara R. 2008, 2).
DU013-044002-	Cremation pit	Excavated (Licence no. E3918) in advance of the construction of the Tyrrelstown to N2 Link Road, this monument consisted of an irregular pit. (2m x 1.6m). It had been significantly disturbed by tree boles and the single fill included charcoal (alder, hazel) and small amounts of barley, false oat-grass tubers and grass. The cremated bone recovered was identified as that of an adult human (O'Hara R. 2008, 2).
DU013-045002-	Cremation pit	Excavated (Licence no. E3918) in advance of the construction of the Tyrrelstown to N2 Link Road, this monument consisted of a circular pit (0.4m diam.) and was located 6m SE of a ring ditch (DU013---0001-). The pit contained a deposit of charcoal (alder and ash) and cremated bone of an adult or older adolescent (O'Hara R. 2008, 3).
DU013-045001-	Ring-ditch	Excavated (Licence no. E3918) in advance of the construction of the Tyrrelstown to N2 Link Road, this monument consisted of an annular ring ditch (4.2m int. diam.). The interior contained a deposit of charcoal and cremated bone (0.3m diam.) placed slightly off-centre within the enclosing ditch. Charcoal from this deposit was identified as hazel while charred barley grains could indicate food offerings placed on the pyre. It was radiocarbon dated to the Middle Bronze Age, 1370-1110BC (O'Hara R. 2008, 3).
DU013-043----	Cremation pit	Excavated (Licence no. E3917) in advance of the construction of the Tyrrelstown to N2 Link Road, this monument consisted of a cluster of three cremation pits. Pit 1 (0.47m x 0.40m) contained a mix of cremated human bone, charcoal and fragments of burnt clay. While the weight of cremated bone recovered was a fraction of a cremated individual analysis revealed the burial to be an older adolescent or perhaps an adult (O'Hara R. 2008, 2). Pit 2 (0.27m x 0.25m) contained a mix of cremated human bone, charcoal and fragments of burnt clay. While the weight of cremated bone recovered was a fraction of a cremated individual analysis revealed the burial to be an older adolescent or, perhaps, an adult. A charred false oat-grass tuber was identified and may have been used as kindling for the funeral pyre (O'Hara R. 2008, 2). Pit 3 (0.5m x 0.4m) was located immediately adjacent to Pit 2 and contained cremation deposit placed within a coarse pottery vessel. The burial was radiocarbon dated to the Late Bronze Age (1010-840 cal. BC). The vessel which survived to a height of 12cm is a Late Bronze age vessel similar to domestic vessels of the same date (O'Hara R. 2008, 3).

### 3.3 Previous Archaeological Investigations

The location of the proposed GIS Kilshane Substation and a small section of the proposed pipeline is located within the proposed Open Cycle Gas Turbine development which is currently a greenfield site. This was subject to geophysical survey in 2022 (22R0092). The survey identified an enclosure and archaeological activity. Subsequent test trenching 22E0248 confirmed the presence of an enclosure complex and associated features and preservation by record (archaeological excavation) was approved by the National Monuments Service and is being carried out at present. This will effectively mitigate the impact on the archaeological features.

The footprint of the Cherryhound Tyrrelstown Link Road was subject to archaeological assessments, including a geophysical survey (08R017) and subsequent test trenching (07E1147). These identified a number of archaeological monuments that were excavated under licences E3917 - E3920 (O'Hara, 2008a-d). Furthermore, a number of investigations took place in areas adjacent to the proposed works, these are also listed in Section 3.1.

Listed below (Table 2) are the investigations relevant to the site. The details are derived from the *Summary Accounts of Archaeological Excavations in Ireland* ([www.excavations.ie](http://www.excavations.ie)).

Table 2: Previous archaeological investigations in the environs of the site

Site	Licence No.	Site Type	Investigation Type
2008:369 - Tyrrelstown to Cherryhound Interchange, Bay/Cherryhound/ Cloghran/ Cruiserath/Goddamendy/ Hollywoodrath/Killamonan, Dublin	07E1147	Various	Test Trenching
2008:372 - Bay 3, Dublin	E003919	Multi-period	Excavation
2008:371 - Bay 2, Dublin	E003918	Bronze Age burial and Iron Age hearth/kiln	Excavation
2008:370 - Bay 1, Dublin	E003917	Late Bronze Age cremations	Excavation
2008:464 - Hollywoodrath 1, Dublin	E003920	Early medieval	Excavation
2018:212 - Hollywoodrath, Dublin	18E0662	Charcoal-production pit	Test trenching and excavation
2004:0483 - CHERRYHOUND, Dublin	03E1360 ext.	Early medieval corn-drying kiln	Test trenching and excavation

Site	Licence No.	Site Type	Investigation Type
2013:538 - Killamonan, Dublin	13E0010	Two corn drying kilns, three sub rectangular pits and a small hearth site	Test trenching and excavation
1999:253 - KILSHANE, Dublin	99E0220	Unenclosed cemetery	Monitoring
2022:045 - Kilshane, Dublin	21E0580	Rectilinear ditched enclosure	Excavation
2021:352 - Kilshane, Dublin	21E0398	Bronze Age	Test trenching
2017:647 - Bay Lane, Mulhuddart, Dublin 16, Dublin	17E0611	No archaeology found	Test trenching
2021:139 - Cruiserath, Mulhuddart, Dublin 15, Dublin	20E0643	Kiln, barrow, enclosure ditch and pits	Test trenching
2019:699 - Cruiserath, Dublin	19E0483	No archaeological significance	Test trenching

The location of the proposed GIS Kilshane Substation and a small section of the proposed pipeline is located within the proposed Open Cycle Gas Turbine development, currently a greenfield site. The area was subject to geophysical survey (22R0092) that identified an enclosure and associated archaeological activity. This was conducted in April/May 2022 by Joanna Leigh of J.M. Leigh Surveys Ltd.

Following the survey, the area was tested and included the northwest and northeast field that were not subject to the geophysical survey. Test trenching (22E0248) confirmed the presence of the enclosure complex with associated features and additional deposits. A total of 33 test trenches were excavated across the site. Archaeological remains were identified in trenches 15-21 and 25. The archaeological features identified were described by Lynn and Long (2022) as

....*The enclosure ditch [7] was uncovered in trenches 15-21. Four box sections were put into the ditch to confirm its north, south, east, and west extent. These sections revealed that the ditch generally had an inconsistent width of 1.22m (box 1 trench 16) to 2.5m (box 4 trench 20) and depth of 0.25m (box 1 trench 16) to 0.9m (box 4 trench 20). The ditch seems to be wider and correspondingly deeper at its southern and eastern extent. However, each feature generally had consistent fills, a top fill of a compact grey, brown sandy clay [8] and a basal fill of a compact grey sticky clay [28]. Box 3 in trench 17 had a different top fill [44] which was a compact dark grey clay with frequent charcoal inclusions. The middle fill varied in each section. It was not present in box 1 trench 16, in box 2 trench 15 the middle fill was [77], a grey clay with frequent stones representing a wall, in trench 17 box 3 the middle fill was [45] a light grey silty clay with frequent charcoal inclusions and in box 4 trench 20 the middle fill was [27] a mottled grey, brown clay. All four of the sections reveal that the base of the ditch contains a channel or groove, flanked either side by a row of postholes. The ditch may have represented the*

foundations of a wall or stockade, which would explain the variable width and depth of the feature and the large number of postholes contained within it. Animal bone inclusions were uncovered from all box sections through the feature.

The interior of the enclosure contained a number of features. Trench 15 contained an oval pit [93] with a width of 0.85m and a depth of 0.23m, extending beyond the limits of excavation to the south. Its fill [94] was a dark brown clay with occasional flat stone inclusions. Bone was recovered from the feature. Feature [78], also in trench 15, was a linear sub-oval feature that extends north-east beyond the limits of the trench. It had a width of 0.66m and a depth of 0.31m. Its top fill [79] was a light orange, brown clay, its basal fill [80] was a lens of charcoal and burnt clay. This feature may have been a kiln. Trench 17 contained a curvilinear slot trench [29], probably representing a structure. It had a width of 0.64m and a depth of 0.35m. It had an internal diameter of 5m. It contained two fills, the top fill [30] was a brown sticky clay with occasional charcoal inclusions. The basal fill [31] was a loose grey silty clay. Two postholes had been cut into the base of the slot trench, [32] and [34]. Both had a diameter and depth of 0.1m. No features were identified within the structure, but animal bone was recovered from the surface of the interior. 1.1m to the west of [29] was a posthole or shallow pit [36]. It had a diameter of 0.23m and a depth of 0.17m and a single fill [37] which was a brown sandy clay. A second curvilinear slot trench, [72] was then present within the trench 3.35m to the west of [36]. It had a width of 0.12m and a depth of 0.1m and had an internal diameter of 5.6m. Its single fill [73] was a brown, grey clay with occasional stone inclusions. The interior of [72] contained a number of small shallow pits [66], [68], [70] and postholes [38], [40] and [42]. All six features had a similar fill of a brown, grey clay. A potential metalised surface was present in both trenches 15 and 17. In trench 15 it had a width of 13m and in trench 17 16m.

Outside the enclosure a further 4 features were identified. In trench 15 a shallow pit [74] was uncovered at its north-western end which may have formed part of anomaly 14 from the geophysical report. The pit extends beyond the trench to the north and has a width of 1.55m and a depth of 0.23m. Its top fill [76] was a brown clay, its basal fill [75] was a dark grey charcoal rich clay. Animal bone was recovered from [75]. Trench 17 a curvilinear slot trench [58] is present 10.5m to the southeast of the enclosure ditch [7]. It extends to the northeast for 5m beyond the limit of excavation. It had a width of 0.5m and a depth of 0.2m. It contained a single fill [59] which was a brown sandy clay. At the excavated terminus of [58] three stakeholes were uncovered, [60], [62] and [64]. [58] may represent a windbreak for activity beyond trench 17 to the north. In trenches 19 and 20 a linear gully [5] extending northwest to southeast through both trenches was uncovered. It did not appear in trenches 18 or 20. A box section was inserted into it in trench 20. This showed the gully had a width of 0.62m and a depth of 0.21m. It contained a single fill [6] which was a grey, brown sandy clay with frequent charcoal inclusions. Animal bone was uncovered from this feature. Feature [3] was uncovered in trench 25, 4.4m from the north end of the trench. It was sub-oval in shape with a length of 1.5m, a width of 0.7m and a depth of 0.08m. It contained a single fill [4] which was a compact dark grey clay with frequent charcoal inclusions and small burnt stones.

The footprint of the Cherryhound Tyrrelstown Link Road running along the site's southwest extent was subject to archaeological assessments, including a geophysical survey (08R017) and subsequent test trenching (07E1147). These identified a number of archaeological monuments; that were excavated under licences E3917 - E3920 (O'Hara, 2008a-d). The excavated monuments included the already mentioned pit DU013-046002-, Excavation – miscellaneous DU013-



046001-, two cremation pits DU013-044002-; DU013-045002-, Kiln DU013-044001- and ring-ditch DU013-045001- located in an area adjacent to the south portion of the site. The kiln was dated to the middle Iron Age (BC 160 – AD 50), while the ring ditch returned a Middle Bronze Age date (BC 1370-1110). Medieval activity (DU013-046001-), dating to the 13th and 14th centuries based on material evidence, was represented by two ditches, a pit and a deposit of clay, and might be linked to the former house, depicted on the Down Survey 1655-56, a monument House - 16th/17th century DU014-089---- located just outside and to the east of the site.

### 3.4 Protected Structures, National Inventory of Architectural Heritage (NIAH)

The site contains no protected structures listed in the Fingal Development Plan 2017 – 2023 or sites listed within the National Inventory of Architectural Heritage (NIAH). The nearest such structure is located c. 0.66km south of the western extent of the development and consists of Mulhuddart Church (in ruins) and Graveyard (RPS 670).

### 3.5 Topographical Files of the National Museum of Ireland

The Topographical Files of the National Museum of Ireland were consulted and listed no finds within the townlands of Kilshane, Bay, Hollywoodrath, Tyrrelstown, or Cruiserath.

### 3.6 Cartographic Review

An examination of pre-Ordnance Survey mapping included the Down Survey Map 1654-56 and Rocque's 1760 map. The map of 1654-56 depicts the townlands of Bay with a building shown within the townland; representing registered monument House - 16th/17th century DU014-089----. Rocque's map of 1760 (Figure 3) shows roads running roughly within the footprints of Kilshane Road, Bay Lane and Church Road.

Ordnance Survey maps of the area were examined to identify any possible archaeological features and trace the site's development during the 19th and early 20th centuries.

The Ordnance Survey Mapping of 1836, 1906 and 1935-38 was reviewed (Figures 5-6). The proposed location of the Kilshane substation is within a large agricultural field that has remained unchanged from the 1836 map until the present. The 1836 map shows Kilshane Road, Bay Lane and Church Road but with more detail. Kilshane Ho. is depicted to the south of Kilshane Road, Old Gravel Pit and a number of houses with trees growing along the north side and along Bay Lane that runs past Bay Ho. depicted to the south of it, with associated demesne lands and its very west extent is a townland boundary with Hollywoodrath. From that point, the site crosses an area depicted as agricultural fields until it joins Church Lane with a pond, and buildings shown. It runs along the demesne lands associated with Tyrrelstown House with a band of trees along the west side screening the road from the house. A number of boundaries shown represent townland boundaries and appear to correspond with the boundaries depicted on the Down Survey Map of 1655-56. A road that Bay Lane meets

at its west extent, running northwest to southeast, as depicted on the 1836 map, was realigned and moved further to the west by the time of the 1906 map, where the current Ratoath Road now is. The 1906 maps show the roads largely unchanged, and the buildings adjacent to the road depicted previously are not shown. *Fox Covert* and *Bay House* with annotation *In Ruins* are depicted to the south of Bay Lane, and only a small band of trees along the west side of Church Road is now shown.

No changes are apparent from the examination of the 1935-38 Cassini map in relation to the site.

### 3.7 Aerial Photography Review

In addition to examining the various editions of the OS maps, aerial photographs from the Geological Survey of Ireland, dating from between 1995 and 2013, and the google aerial imagery dating between 2002 and 2022 were consulted.

The proposed location of the Kilshane substation is within a large agricultural field that has remained unchanged since 1995. Most of the footprint of Kilshane Road and Bay Lane appears largely unchanged since the 1995 aerial, with few buildings adjacent to it. By 2003 a large quarry adjacent and north of Bay Lane was established. A portion of Church Road with associated roundabouts was upgraded by 2003; this was associated with the residential development to the west of it. The 2004-2006 aerial shows the construction of the N2 underway and complete by 2008 with upgrades to the west portion of Kilshane Road. In 2012 the new road Cherryhound Tyrrelstown Link Road with associated roundabouts was constructed, linking Bay Lane with Church Road.

## 4. CONCLUSIONS & RECOMMENDATIONS

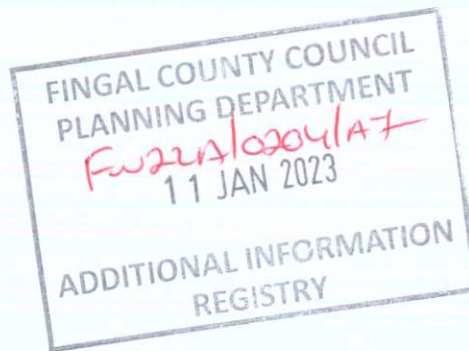
The proposed service line runs within Kilshane, Bay, Hollywoodrath, Tyrrelstown, and Cruiserath townlands. The proposed service will run within the footprint of public roads largely and measures c. 4.69km in length. The line will connect the GIS Kilshane Substation (ITM 710899, 742533; E) to the existing Cruiserath GIS substation (ITM 707525, 741755 W) and run within Kilshane Road, Bay Lane, Cherryhound Tyrrelstown Link Road and Church Road.

The location of the proposed GIS Kilshane Substation and a small section of the proposed pipeline is located within the proposed Open Cycle Gas Turbine development, currently a greenfield site. The proposed pipeline and sub-station lie within an archaeologically sensitive area with archaeological monuments recorded and sites identified as a result of recent archaeological investigations. This area is currently under archaeological excavation which was approved by the National Monuments Service. This excavation will mitigate any impact on archaeological features from the proposed development of the sub-station and section of pipeline within the extent of the site. Archaeological sites within the footprint of the Cherryhound Tyrrelstown Link Road were also previously preserved by record (excavated).

The archaeological excavations at the location of the GIS Kilshane Substation are currently ongoing. The proposed pipeline will run largely within the footprint of the existing roads. Due to the nature and location of the works largely within public roads, test trenching is not recommended. The western portion will run within the footprints of upgraded Church Road and

modern Cherryhound Tyrrelstown Link Road. This is unlikely to impact any archaeological remains as these roads were previously assessed and all features identified were subjected to full archaeological excavation. Kilshane Rd and Bay Lane were not upgraded in recent years, however. Furthermore, an area of increased potential was identified along Bay Lane, particularly the stretch in the environs of the archaeological monument, Burial Ground DU014-048---- which has been recently found to be quite extensive.

In order to mitigate any potential impact on previously unknown archaeological remains, should they be present, archaeological monitoring of all groundworks should be conditioned within any grant of permission for this development. This should be carried out by a licence eligible archaeologist working under licence from the Department of Housing, Local Government and Heritage.



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Topographical Files of the National Museum of Ireland

### Cartographic Sources

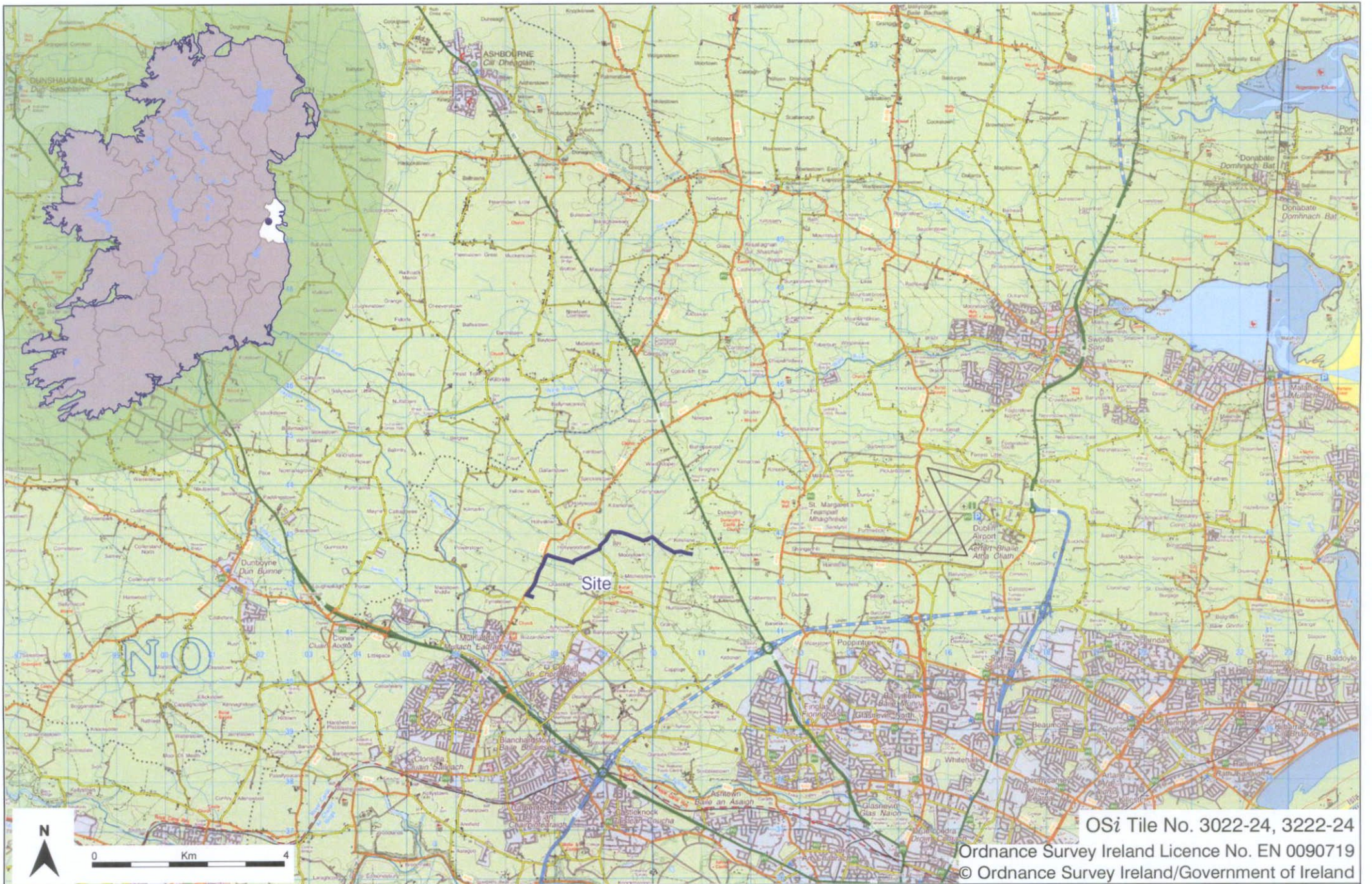
Down Survey map of County Dublin, Barony of Castleknock


First edition 6-inch Ordnance Survey map (1836-43)

Rocque's 1760, An actual survey of the county of Dublin (northwest and southwest sheet)

Third edition 25-inch Ordnance Survey map (1906–09).

Google Earth Pro (aerial photography) 1985-2022



<b>Project</b> Kilshane, Co. Dublin	<b>Date</b> September 2022	<b>Drawing No.</b> 2220_C0011	
<b>Figure 1</b> Location of site		<b>Scale</b> 1:100,000 @ A4	