

EirGrid Evidence Based Environmental Studies Study 2 Cultural Heritage

Literature review and evidence based field study on
the effects of high voltage electricity infrastructure on
archaeological, architectural and cultural heritage in Ireland

November 2015



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EirGrid Evidence Based Environmental Studies

Study 2: Cultural Heritage

Literature review and an evidence based study of the effects of the construction, presence and operation of high voltage transmission projects on Ireland's cultural heritage.

This document has been prepared by EirGrid plc with the assistance of RPS Group.

The evidence contained in this study has been provided by Courtney Deery Heritage Consultants, under contract to RPS Group.

The Study has greatly benefitted from discussions with, and review of the Draft Study by, experts from the Department of Arts, Heritage, and the Gaeltacht.

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SUMMARY

Cultural heritage, including archaeological heritage and architectural heritage, are places and objects of beauty, cultural, historic, scientific, social or spiritual value. They include archaeological monuments, world heritage sites, protected structures, designed landscapes, place names, language and inherited traditions.

This is an independent, evidence-based study undertaken by experts in cultural heritage. The research examines the actual effects of the construction, presence and operation of high voltage transmission projects on Ireland's cultural heritage. Such projects include overhead lines, underground cables and substations.

The purpose of this study has been:

- To review national and international literature on the subject of the potential impact on cultural heritage of transmission infrastructure.
- To establish the impacts of transmission infrastructure on the cultural environment in Ireland. This was done through field studies of sections or sites of existing power lines, cables and substations.
- To provide a factual basis for separate evidence-based design guidelines for transmission projects in Ireland.

The routing of transmission projects is a complex process. It requires a balance between a number of issues, including EirGrid's obligations to ensure a safe and secure transmission grid, land use constraints, engineering and other technical requirements, cost, and environmental protection.

Transmission infrastructure has the potential to affect the environment, including cultural heritage.

Available monitoring and excavation reports which have been undertaken for transmission projects (overhead lines and infrastructure) over the last 40 years were reviewed. This showed that any identified impact on cultural heritage by the construction of overhead lines is generally small-scale. This is because the excavation required to construct poles or steel pylons is very limited. This means that such sites can be easily avoided.

Underground cable projects have at times revealed larger sites, including burial sites with skeletal remains. This is because such projects require the excavation of a long linear trench.

Even though substation sites are large in scale, and thereby have the potential to impact on the cultural heritage, construction site records of investigation have not revealed large scale archaeological sites. This is because the initial studies which identified the substation site would have included consideration of all known cultural heritage, and would have sought to avoid sensitive areas.

The field survey results highlighted that the cultural heritage of about a third of the areas visited has been managed perfectly. In these areas, archaeological and architectural features were found to be under no threat whatsoever. The remaining sites mostly had moderate to minor issues that did not put the heritage assets under any severe threat; however, the wider setting of a site was affected. In a few cases, transmission projects had resulted in a significant impact on existing archaeology. There was no major impact to architectural heritage among the survey sample.

It should be understood that such minor, moderate and major issues identified during the field survey were not deliberate. Rather, it must be remembered that the construction of existing transmission projects primarily dates back to the 1970s and 1980s, where there was no formal Environmental Impact Assessment (EIA), and where advice from governing departments would have been limited, and of its time.

Nowadays, with good routing practices, well designed EIA processes, greater statutory protection, and better engagement with regulatory authorities, worst case impacts can normally be avoided.

There is still a challenging question of dealing with indirect impacts, such as impact on the setting of a cultural heritage feature – that wider landscape associated with a feature - and the impact of crossing sensitive cultural landscapes. However, international policy and guidelines provides a good basis for the preparation of best practice guidance for an Irish context .

The results of the evidence-based study for cultural heritage have established that good practice for the construction of transmission projects depends on:

- Early and appropriate consultation with authorities and stakeholders.
- Robust cultural heritage reporting throughout the planning stages, such as route selection studies and preparation of the Environmental Impact Statement (EIS).
- Early and open community involvement in the identification and reporting of non-designated or intangible heritage, for example folklore, local graveyards etc.
- Consideration of the interaction between cultural heritage, landscape and visual impacts. This requires discussion between EIS experts.
- Consideration of possible routing or technology options, informed by archaeological/architectural heritage survey and evaluation.
- Balanced decision-making on often competing values and interests, eg visual amenity versus potential impact on buried archaeology.
- Appropriate mitigation.

Recommendations for the future include ensuring the input of a Project Archaeologist in all transmission projects. This would ensure a consistent approach to a portfolio of individual projects.

This study has provided a factual basis for the development of evidence-based Cultural Heritage Guidelines for transmission projects in Ireland. The purpose of the guidelines is to ensure a consistent approach to cultural heritage at all stages of the development of transmission projects. The guidelines will also result in a standard approach for cultural heritage assessment during the planning process.

1 INTRODUCTION

1.1 THE SCOPE OF THIS PROJECT

In April 2012, EirGrid published the *Grid25 Implementation Programme 2011-2016*, and its associated Strategic Environmental Assessment (SEA).

The SEA identified a number of Environmental Mitigation Measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the Implementation Programme.

Environmental Mitigation Measure (EMM) 3 concerns *Preparation of Evidence-Based Environmental Guidelines*. These are intended to comprise a series of authoritative studies examining the actual effects of the construction and existence of transmission infrastructure in Ireland. The studies would thereby provide benchmarks to facilitate the robust preparation of projects with an evidence-based understanding of likely environmental impact.

Three types of studies are envisaged under EMM3:-

- **Environmental Benchmarking Studies:** to determine the actual effect, in respect of a number of environmental topics, of the construction and existence of transmission projects in a representative range of Irish environmental conditions – typical, non-standard, and worst-case. The studies, while authoritative, are conceived as an ongoing body of work that can be continuously updated to take account of new information and/or developments in understanding arising from practice and research;
- **Evidence-based Environmental Design Guidelines:** deriving from the factual basis and evidence contained in the initial Benchmarking Studies, these will provide practical guidance to practitioners and consultants in the planning and design of transmission infrastructure from the perspective of a particular environmental topic. These might comprise new guidelines, or the updating of existing guidelines;
- **Guidelines on EIA for Transmission Projects in Ireland:** Accompanying, or incorporated into the Design Guidelines, these are intended to provide an agreed and authoritative format for the preparation of EIA for transmission projects in Ireland, again in respect of particular environmental topics.

This Study is one of the Environmental Benchmarking Studies – to determine the actual effect of the construction and existence of transmission infrastructure in Ireland on its receiving environment.

1.2 THE SCOPE OF THIS STUDY

A review of available documentation and literature undertaken for the study provides the basis for an assessment of the type of potential challenges facing cultural heritage assets in the context of the development of the transmission network.

This study examines how such potential impacts may be identified and minimised, with uncertainties removed where possible. It also identifies appropriate mitigation strategies, accepted best practice and the role of legislative protection.

The objectives from a cultural heritage view point for this study are:

- To provide evidence for the type of route, design, construction and maintenance methods that will give rise to the least impact on cultural heritage features.
- To establish the actual impacts of existing transmission infrastructure, and associated structures and ancillary services, on the cultural environment in Ireland. This occurs by means of surveying and assessing representative sections of existing infrastructure – deemed to be typical, non-standard and worst-case.
- To provide a factual basis for subsequent evidence-based cultural heritage guidelines in respect of the development of transmission infrastructure projects in Ireland.

1.3 THE TRANSMISSION NETWORK AND CULTURAL HERITAGE

Electricity supply is an essential service in Ireland's economy. The transmission system is a meshed network of 400 kV, 220 kV and 110 kV high voltage lines and cables and plays a vital role in the supply of electricity¹.

The development of the transmission network is the responsibility of EirGrid, the Transmission System Operator (TSO) under statutory instrument 445 (2000)². EirGrid is committed to delivering quality connection, transmission and market services to its customers and to developing the transmission grid infrastructure required to support the development of Ireland's economy.

¹ Transmission Development Plan 2008-2012 EirGrid

² Statutory Instrument 445 (2000), entitled European Communities (Internal Market in Electricity Regulations, 2000)

Grid development requires a careful balance between meeting the technical requirement for a project, the costs of that project, and the environmental impact of that project.

ESB, as the Transmission Asset Owner (TAO), is charged with constructing the transmission assets as specified by the TSO. ESB also has the role of Distribution System Operator (DSO) with which the TSO coordinate planning and development requirements.

An overview of the primary types of transmission infrastructure, including an outline of construction methodology is set out in **Appendix A** of this study.

Cultural heritage is part of our cultural identity as a nation, as well as having a dynamic physical expression in the landscape. Within the landscape, it is a finite, non-renewable resource. Under the Code of Practice³ agreed by EirGrid and the Department of Environment, Heritage and Local Government⁴, EirGrid is equally committed to the preservation of archaeological heritage and ensuring that transmission infrastructure development is undertaken in an environmentally sensitive manner, protecting our cultural heritage.

Notwithstanding this, increased development, shifting population patterns and economic sources have placed competing pressures on our cultural heritage resource. Landscape change in Ireland has been guided by and assisted by government policy, incentives and grant schemes. Those pertaining to agriculture and infrastructure development in particular are driven by government policies influenced in turn by external forces at work in the EU. The state and its agencies have the responsibility for identifying, protecting, maintaining and preserving cultural landscapes, monuments and protected structures.

The potential effects of transmission infrastructure development on the historic environment relate primarily to the potential for ground disturbance and excavation caused by construction activities; this may lead to the damage or destruction/removal of recorded and previously unknown heritage assets. In addition, the routing of an overhead transmission line can potentially indirectly adversely affect the setting of archaeological monuments, historic demesnes, protected structures and/or architectural conservation areas.

In transmission infrastructure development, every effort is made to cause least disturbance to landowners and local residents during construction. However, it is also necessary to ensure that the preferred/chosen route does not impact or affect a cultural heritage feature, be it a recorded monument, protected structure or historic demesne for example. This applies to

³ Code of Practice between the Department of the Environment, Heritage and Local Government and EirGrid, 2009a

⁴ Now referred to as the Department of Arts, Heritage and the Gaeltacht

both known and previously unknown features. This is why transmission infrastructure development should be reviewed by a consultant archaeologist as the design of a scheme progresses, and by a monitoring archaeologist on site during construction.

In addition, depending upon the siting of a substation, its presence could potentially have adverse effects on the setting⁵ of archaeological monuments and sites, built heritage features, historic landscapes, protected structures and architectural conservation areas.

The significance of the effects on the historic environment depends on the monument/building type, extent of development and potential for screening and mitigation measures.

1.4 STUDY LAYOUT

The study begins with a review of the legislation and guidelines designed to protect archaeological remains and cultural heritage sites in Ireland (Chapter 2). Following this, the literature review (Chapter 3) assesses existing guidance and codes of practice, and collates a sample of available cultural heritage investigations that have been undertaken along previous transmission projects in Ireland. It assesses the results of these investigations and the occurrence of these investigations revealing archaeological features.

A comparative analysis of the findings from other linear infrastructural projects in Ireland (road, gas pipeline and windfarm development) is then discussed. Chapter 3 also outlines the best practice developed in the United Kingdom and Scotland in relation to cultural heritage and transmission projects.

The study goes on to examine the practice of constructing transmission lines and associated infrastructure in the field (Chapter 4). It then presents the methodology used and the findings of the observational evidence-based survey of cultural heritage sites in proximity to existing transmission lines, cables and stations (Chapter 5).

The study concludes (Chapter 6) with a discussion of the survey results, and provides recommendations to assist with the development of a consistent, comprehensive and robust cultural heritage planning framework.

⁵ Setting is the surroundings in which the heritage asset is experienced. All heritage assets have a setting, irrespective of the form in which they survive and whether they are designated or not. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral. (The Setting of Heritage Assets, English Heritage Guidance, 2011 and para 113, *PPS 5 planning for the Historic Environment; Historic Environment Planning Practice Guide*, 2010).

2 CULTURAL HERITAGE IN IRELAND

2.1 GENERAL

The Irish landscape is rich in physical archaeological, architectural and cultural heritage remains. There are at present over 140,000 recorded archaeological monuments⁶ most of which date to before AD 1700 and 5000 of which have been entered into the Register of Historic monuments (Kirwan 1998). The Heritage Council has recorded 39,380 protected structures throughout Ireland⁷.

Each recorded monument and protected structure provides a unique cultural record in itself as a carrier of memory, meaning and cultural value. When considered in the context of its surroundings, each can form an essential component in the mechanism for analysing the wider cultural character and context of an area.

Together, these can assist in mapping the evolution and changes that have led to the development of the modern environment. Such analysis also provides insight into the communication, trade, transport, growth and associations of past human societies.

In recent decades, there have been fundamental changes in the approach to Irish archaeology, and to the prevailing policy in respect of cultural heritage. Over the period 1995–2010, virtually all archaeological excavations were undertaken in response to infrastructural, urban and other developments; estimates in 2006 indicate that, on average, a previously unrecorded site was discovered every two kilometres on linear infrastructural routes⁸. However, the approach was dominated by research excavations and conservation concerns.

The rise and decline of development-led archaeological investigation in relation to infrastructural projects, particularly concerning ESB and EirGrid projects, are discussed in the Literature Review (Chapter 3, and in particular Section 3.1 - *Overview*) of this study.

Cultural heritage and archaeological resources are valued for the important contribution they make to our understanding of the history of a place, an event or a people.

⁶ The Archaeological Survey of Ireland, National Monuments Service (www.archaeology.ie), 2012.

⁷ Heritage Council Record of Protected Structures Draft List May 2011 (Version 3)

⁸ Archaeology 2020 – Repositioning Irish archaeology in the Knowledge Society (2006)

2.2 DEFINITIONS

For the purpose of this study, the terms archaeology, architectural heritage, cultural heritage and heritage are defined as follows –

'Archaeology' *'is the study of past societies through the material remains left by those societies and the evidence of their environment. The 'archaeological heritage' consists of such material remains (whether in the form of sites and monuments or artefacts in the sense of moveable objects) and environmental evidence*⁹.

'Monument' under the existing legislation, *'a monument may consist of a man-made structure or group of structures or a natural structure altered by man. Monuments may also consist of site where there are no visible features, but where below surface archaeological remains are known or suspected to exist'*¹⁰.

'Heritage' includes built and natural assets (both tangible and intangible), including monuments, archaeological sites and objects, heritage objects, architectural heritage, flora, fauna, wildlife habitats, natural and man-made landscapes, seascapes, wrecks, geology, heritage gardens and parks and inland waterways¹¹.

'Architectural heritage' is defined as *'all structures and buildings (together with their settings and attendant grounds, fixtures and fittings, groups of such structures and buildings and sites), which are of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. Architectural heritage is generally visible and has a presence in the landscape which requires assessment'*¹².

'Cultural heritage' is a general term used to describe aspects of the environment and intangible heritage which are valued for their age, beauty, history or tradition. It encompasses aspects of archaeology, architecture, history, landscape and garden design, folklore and tradition and topography. Cultural heritage is expressed in the physical landscape in numerous often interrelated ways.

⁹ Framework and Principles (DAHGI), 1999, pg 9

¹⁰ Review of Archaeological Policy and Practice in Ireland – Identifying the Issues

¹¹ as defined in the Heritage Act, 1995

¹² Architectural Heritage Guidelines for Local Authorities 2006

‘Historic Landscapes’ are areas of land, as perceived by people, whose character is the result of the interaction of natural with human factors, and any area adjacent to such historic landscape which assists or supports in giving such landscape its character, value or integrity or in maintaining same¹³.

‘Cultural Landscapes’ emphasize the interrelationship of people and the natural environment and convey information about the processes and activities that have shaped the landscape and its living communities. Cultural heritage landscapes may be organically evolved landscapes as opposed to designed landscapes. Some are ‘continuing landscapes’ which maintain the historic use and continue to evolve while other are ‘relict landscapes’ where the evolutionary process has come to an end but within which important landscape features or built heritage resources survive from its historic use and are still visible¹⁴.

2.3 LEGISLATION AND MONUMENT DESIGNATION

Ireland has ratified a number of international conventions and agreements in relation to archaeology and built heritage.

The Council of Europe’s *Convention for the Protection of the Architectural Heritage of Europe* signed at Granada in 1985, was ratified by Ireland in 1991 and the *European Convention on the Protection of the Archaeological Heritage 1992* (the Valletta Convention) was ratified by Ireland in 1997. Such agreements place legal obligations on the State in relation to the recording, conservation and management of archaeological and built heritage.

In essence these conventions prescribe that the archaeological heritage is conserved and maintained preferably *in-situ* and that archaeological and architectural heritage concerns are integrated into the planning and development process e.g. through Environmental Impact Assessment. In Ireland, these Conventions are given effect through the National Monuments Acts 1930-2004 and the Planning and Development Act 2000 and its amendments.

*UNESCO’s*¹⁵ *Convention concerning the Protection of World Cultural and Natural Heritage* was drawn up in 1972 and ratified by Ireland in 1991. There are currently two designated

¹³ Expert Advisory Committee note (2009)

¹⁴ Cultural heritage resources report – Built heritage & cultural heritage landscapes environmental assessment report, Underman McPhail Associates Heritage Resource Management Consultants, Toronto, Ontario Canada (September 2008)

¹⁵ United Nations Educational, Scientific and Cultural Organisation

world heritage sites in the Republic of Ireland – the Archaeological Ensemble of the Bend of the Boyne and Skellig Michael. The statutory policy for managing these sites is as follows:

The managed landscape concept involves, essentially, the protection of the archaeological resource in its overall environmental setting while facilitating visitor access under conditions which are compatible with this primary objective of protection. This is achieved by the implementation of a local visitor-management regime, by the application of the national Monuments Acts and by the co-ordination of public and private land-use, while respecting the existing agricultural land-use pattern and social/economic activity.

The State has also submitted seven areas to the World Heritage Tentative List which are considered to be cultural and/or natural heritage sites of outstanding universal value and therefore suitable for inscription on the World Heritage List.

2.3.1 Monuments

The National Monuments Act, 1930 and subsequent amendments provide the formal legal mechanisms to protect monuments in Ireland. There are four protective mechanisms by which a monument is protected under the Acts; these are:

- The Record of Monuments and Places (RMP)
- The Register of Historic Monuments (RHM)
- Preservation Order (PO) or Temporary Preservation Order (TPO)
- National Monuments (NM) either in the care (ownership or guardianship) of the State or a local authority

All known sites and monuments in Ireland are identified and listed for protection in the Record of Monuments and Places (RMP). This is a statutory inventory of sites protected under the National Monuments Acts.

For National Monuments in the ownership or guardianship of the State, the Minister or a local authority or which are subject to a Preservation Order the prior written consent of the Minister is required for any works at or in proximity to the monument.

2.3.2 Protected Structures

A protected structure is a structure that is considered to be of 'special interest', which is broadly defined by the Planning and Development Act, 2000 as structures of architectural, historical, archaeological, artistic, cultural, scientific, social or technical point interest.

The 2000 Act requires each planning authority to compile and maintain a Record of Protected Structures (RPS). The RPS is a mechanism for the statutory protection of the architectural heritage and is listed in every County Development Plan and Town Development Plan.

RPSs are designated as part of the Development Plan process, either during a review of the County Development Plan or as a variation of the plan. Each owner and occupier of a protected structure is legally obliged to ensure that the structure is protected/ conserved.

The protection, unless otherwise stated in the RPS, includes the exterior and interior of the structure, the land lying within its curtilage (boundary), any other structures and their interiors within the curtilage, plus all fixtures and fittings which form part of the interior or exterior of any of these structures.

By definition, a protected structure includes the land lying within its curtilage and other structures within that curtilage and their interiors. The notion of curtilage is not defined by legislation, but according to Architectural Heritage Protection Guidelines for Planning Authorities (2006) it is that parcel of land immediately associated with the structure and which is (or was) in use for the purpose of the structure.

The attendant grounds of a structure are the lands outside the curtilage of the structure but which are associated with the structure and are intrinsic to its function, setting and/or appreciation. For example, the attendant grounds of a protected structure, such as a country house, could include the entire demesne, or pleasure grounds, and any structures or features within it such as follies, plantations, lakes etc.

2.3.3 National Inventory of Architectural Heritage

The National Inventory of Architectural Heritage (NIAH) is a section under the administration of the DAHG which was established in 1990 and placed on a statutory basis under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999. The NIAH's role is to identify, record and evaluate the post-1700 architectural heritage of Ireland. It aims to promote the appreciation of, and contributes to the protection of, the built heritage by systematically recording a representative sample of that built heritage on a nationwide basis¹⁶. The surveys provide the basis for the recommendations of the Minister to the planning authorities for the inclusion of particular structures in their Record of Protected Structures (RPS).

¹⁶ www.buildingsofireland.ie

2.3.4 The Historic Garden and Designed Landscape Survey (NIAH)

Historic landscapes, gardens and demesnes are usually, but not always, associated with Protected Structures and therefore do not always have statutory protection. The NIAH Designed Landscapes and Historic Gardens Survey is a preliminary survey, based on paper study using historic map sources and aerial photography¹⁷.

2.3.5 Architectural Conservation Areas

Architectural Conservation Areas (ACAs) are areas, places, groups of structures or townscapes that are of special architectural, historical, archaeological, artistic, cultural scientific, social or technical interest/value or contribute to the appreciation of Protected Structures. ACAs and candidate ACAs are listed in every County Development Plan and Town Development Plan.

2.3.6 Cultural Heritage

Cultural heritage is a broad, and in a way an open term, which was once exclusively used to refer to monumental remains and objects. However in addition to the physical cultural heritage features that are recognised and protected by legislation, cultural heritage is a term that now has come to include a wide range of tangible and intangible cultural considerations that are linked to and bound up in cultural memory and associations, belief traditions, past knowledge, traditional and arcane practices, craft and building skills, and oral tradition of local populations.

Cultural heritage is both tangible and intangible. It is expressed in the physical landscape in numerous often interrelated ways e.g.

- Settlements (form, material composition and particular responses to the physical environment)
- Designed landscapes
- Natural resources of economic value (industrial/ farming sites e.g. mining sites, caves, mills, weirs, and fish passes etc.)
- Building & structures (outside of NIAH and RPS)
- Infrastructures (coach roads, military roads etc.)

¹⁷ www.buildingsofireland.ie/survey/gardens

And it is also expressed in non-physical ways, for example:

- in folklore
- inherited traditions (pilgrim paths, pattern day routes, historical county fairs or long established sporting activities and traditional country pursuits)
- language, values, memories
- history/ historical events (e.g. battle sites, association with historic personalities)

Intangible heritage is often community based and provides a link to, and an identity to, even the smallest parcels of land. It must be recognised as such by the local community and in order to be maintained and transmitted (both formally and informally) on to each generation.

The examination of townland names (toponymy) of an area can be a valuable indicator of the type of cultural heritage therein. A variety of place names, whether of Irish, Viking, Anglo-Norman, and English origin and the appearance of the different languages is often a good indicator of the cultural heritage, and therefore the archaeological record of the area.

By identifying, recording and articulating these sensitive values they may be considered, respected and protected in the context of change in the future. In this regard local communities, groups and heritage offices of Local Authorities have a huge role and responsibility to play in the protection of local cultural heritage.

The 2003 UNESCO *Convention for the Safeguarding of the Intangible Cultural Heritage* defines intangible cultural heritage as:

'the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity'

This Convention requires all signatories to safeguard intangible cultural heritage by identifying, defining and creating an inventory of such heritage in their territory and to create policies for the protection, enhancement and promotion of that heritage. This Convention has not as yet been ratified by Ireland.

2.3.7 Historic Landscapes

In April 2010 the Government approved a draft scheme of legislation which will, if enacted, repeal and replace the existing National Monuments Acts 1930 to 2004 and a number of associated Acts. Work on drafting the Bill is currently underway.

When drafting is complete the Bill will be brought to Government for approval. If approved by the Government, the Minister will introduce it into the Houses of the Oireachtas (*pers. comm.* Sean Kirwan, Senior Archaeologist, NMS).

The Bill, if enacted, will form a single piece of consolidated legislation which will replace the existing acts, and which will afford additional protection for heritage and historic cultural landscapes. In the context of this evidence-based study, if enacted the new legislation will include a broad definition of an historic landscape.

There will be two levels of protection for historic landscapes. The first level will include a small number of iconic landscapes, to be known as Outstanding Historic Landscapes. The second level will be comprised of Special Historic Landscapes; these will be more locally based historic landscapes, mainly complexes of archaeological monuments.

The Planning Acts will be amended to acknowledge the existence of 'Outstanding' and 'Special' historic landscapes and it will be the duty of the local authorities to conserve them.

Similar to monuments, a landscape will not attract automatic protection simply by virtue of the fact that it fits the definition. The issue of statutory recognition will be restricted through the set criteria and expert advice that the Minister applies prior to designation.

2.3.8 Setting and Visual Amenity

All sites, irrespective of the form in which they survive have a setting. While subsurface sites may not be readily accessible they also have a setting that contributes to its significance, this setting may include an important topographical context or landform e.g. (hilltops, watercourses, sheltered aspects), strategic views or a line of sight to other sites etc. and may extend outside the site's immediate area. An interpretation of the buried site can enhance the public's appreciation of its setting.

As well as the physical preservation of a monument, the legislation includes provision for the protection of the setting and visual amenity of the monument or structure which can be fundamental to its significance.

An understanding of how to characterise the unique setting of a site is essential in order to accurately evaluate the effect of change on its setting and to define how the cultural significance of a site might be altered by that change. Proposed changes to the setting of a site can either enhance or detract from its cultural value and significance.

In a development context, appropriate development design can take on a vital role in maintaining the setting and visual amenity of a site. The scale, form and layout of a development, therefore, requires a collaborative and iterative design development process with designers, archaeologists and landscape and visual specialists engaged in the process from the outset.

In the National Monuments Acts the amenity of the monument is mentioned but is not explicitly defined:

‘National monument’ “means a monument or the remains of a monument the preservation of which is a matter of national importance... And the said expression shall be construed as including in addition to the monuments itself, the site of the monument and the means of access thereto and also such portion of land adjoining such site as may be required to fence, cover in, or otherwise preserve from injury the monument or to preserve the amenities thereof”¹⁸

The amenity of a monument was however enshrined in law in a Supreme Court judgement relating to a development in the vicinity of a monument:

“If a particular area be identified as an area for conservation for any amenity reason, one does not then legitimately permit development to the very boundary of the area; either the area must itself be prescribed as extending to a sufficient circumference as will allow for a fallow area in between, or must envisage that such fallow area shall adequately extend outside the immediate area of the amenity.”¹⁹

The DAHG ‘*Archaeology in the Planning Process*’ guide notes that the setting and visual amenity of a monument is a matter of judgement based on an individual site assessment:

¹⁸ *National Monuments Act, 1930. Section 2*

¹⁹ McCarthy J. in the case of *Attorney General (McGarry) v Sligo County Council* [1991] 1 I.R. 99. (In relation to a proposal to operate a refuse dump within Carrowmore megalithic cemetery and also on the concept of ‘fallow area’ around it).

*“The establishment of a buffer or fallow area around a monument, sufficient to protect the amenity and setting of the monument requires individual assessment. Each planning application is therefore examined on an individual basis”.*²⁰

Currently, there are no Irish guidelines on how to approach the task of defining the setting or visual amenity of an archaeological monument.

The ICOMOS *Xi’an Declaration on the conservation of the setting of heritage structures, sites and areas* (2005) builds upon the concept of setting as set out by UNESCO and ICOMOS recommendations²¹ and acknowledges the contribution of setting to the significance of heritage monuments, sites and areas.

2.4 PLANNING CONTROLS

Statutory consent for transmission projects is sought on a project by project basis as the need arises. Proposals for major new infrastructure are primarily determined by An Bord Pleanála as Strategic Infrastructure Development (SID), involving considerations of proper planning and sustainable development. This includes:

- conformity with the applicable provisions of the relevant Development Plans,
- input from Prescribed Bodies and the relevant Statutory Authorities,
- requirements to protect areas on account of their ecological, cultural, archaeological, visual sensitivity or significance,
- having regard to strategic Directives and development policies.

Under the provisions of the Strategic Infrastructure Act 2006 (as inserted into the Planning and Development Act 2000 as amended), the National Monuments Service (NMS) will make submissions or observations with regard to any potential impact on archaeology and cultural

²⁰ *Archaeology in the Planning Process, DAHG, 2006*

²¹ Such as the Recommendation concerning the Safeguarding of Beauty and Character of Landscapes and Sites (1962), the Recommendation concerning the Preservation of Cultural Property Endangered by Public or Private Works (1968), the recommendation concerning the Safeguarding and Contemporary Role of Historic Areas (1976), the Convention for the Safeguarding of the Intangible Cultural Heritage (2003) and more specifically the World Heritage Convention (1972) and its operational guidelines, where setting is listed as an attribute of authenticity and as needing protection through the establishment of buffer zones and the on-going opportunity this brings for international and interdisciplinary co-operation.

heritage features arising from a proposed SID. Similarly, the Architectural Heritage Advisory Unit will comment on architectural heritage and built cultural heritage features.

Applications for statutory consent are accompanied, where required or appropriate, by an Environmental Impact Statement (EIS) to comply with statutory requirements under the Environmental Impact Assessment Directive and associated legislation, or where it is determined necessary by the relevant planning authority (a County Council or An Bord Pleanála in the case of Strategic Infrastructure Projects).

Part 10, and Schedule 5, of the Planning and Development Regulations 2001 (as amended) sets out specific thresholds for when a formal EIS is required to be submitted with an application for statutory consent. Item 20 of Part 1 of Schedule 5 of the Regulations requires an EIS in respect of development comprising *“Construction of overhead electrical powerlines with a voltage of 220 kilovolts or more and a length of more than 15 kilometres”*.

In addition, Item 3b of Part 2 of Schedule 5 requires an EIS in respect of development comprising *“Industrial installations for carrying gas, steam and hot water with a potential heat output of 300 megawatts or more, or transmission of electrical energy by overhead cables not included in Part 1 of this Schedule, where the voltage would be 200 kilovolts or more”*.

EIA may be required for sub-threshold development involving transmission of electricity by overhead cables where the voltage is below 220 kV or where the voltage is 220 kV and the length is less than 15km and where significant impacts on the environment are likely (as determined by the decision maker).

An Environment Report (ER) is generally prepared for development of new major transmission projects which do not require EIA.

The statutory consents process ensures that appropriate consideration and equal weighting is given to cultural heritage assets at the early design stages of transmission projects.

In order to ensure objectivity and transparency, public consultation is undertaken throughout the planning and construction stages of all transmission projects. Early and ongoing consultation plays a key role in identifying cultural heritage features within local communities, with the objective of allowing a thorough examination of all environmental factors to take place. However, debate between different parties can occur over the value, extent and significance attributed to heritage assets.

2.5 PLANNING AND DESIGN PROCEDURES

In general, the specific planning and design (routing and siting) of an electricity infrastructure project commences with a constraints study which defines the area through which the development might optimally run. This is followed by a series of high-level studies on a route corridor to determine a preference of routes from the most to least environmentally sensitive.

The next level of assessment is based on a more detailed design defining the route and the likely location of support structures. At this stage, cultural heritage field work is carried out. Often the results of this stage will necessitate further design changes and further consultation with statutory authorities, designers and other stakeholders.

The Minister of Arts, Heritage and the Gaeltacht (DAHG) is a statutory consultee in respect of planning applications that impact on archaeology and architectural heritage.

The final EIS (or ER) will follow various revisions to the routing and design of the project, in order to minimise as many potential environmental impacts as possible.

EirGrid approaches the development of its major transmission projects – following their Capital Approval by EirGrid’s Board - in a structured five stage process²² (Figure 2.1):

Stage 1	Information Gathering
Stage 2	Evaluate Options
Stage 3	Confirm Design
Stage 4	Prepare Planning Application
Stage 5	Wayleaving and Construction

Public and statutory consultation is ongoing throughout all stages of development.

²² EirGrid (2012) *Approach to the Development of Electricity Transmission Lines*, p. 4



Figure 2.1: EirGrid's Project Development and Consultation Road Map

The principles of avoidance, by design or preservation *in-situ* and mitigation (DAHGI 1999, 33) are central to the cultural heritage EIA process and guide the planning and design of transmission projects.

Where EIA applies, the cultural heritage studies must take into account the EPA guidelines which provide a framework within which EIA operates. It sets out a methodology to allow specialists and decision makers to consider key aspects of the environment to understand the impact of the proposed change in that environment.

Guidelines on assessing the impact of road schemes on archaeological and architectural heritage were devised by the NRA (2005). The guidelines aimed to standardise the approach for cultural heritage assessment during the planning process from constraints study stage, through to route selection and EIA stage.

The methodology used to assess the type and level of impact assessment in the guidelines was devised in accordance with the EPA guidelines (2002). This published and tested impact categorisation was used to assess the impact of transmission projects on cultural heritage during the site survey for this evidence based project (**Tables 2.1 - 2.3**).

In 2012, EirGrid published its Ecology Guidelines²³. These guidelines detail the level of information required at each stage of the planning process and combines this with EirGrid's phased approach for development. The approach to impact assessment is broadly similar to cultural heritage in that it consists of a qualitative and quantitative approach based on professional judgement while referencing the EPA guidelines (2002).

Category of Impact	Description
Direct	Occurs when an item of archaeological, architectural or cultural heritage is removed in part, or totally, due to the proposed works. A direct impact can also occur in an area considered to be of archaeological potential is affected.
Indirect	May be caused due to the close proximity of the proposed transmission development to an archaeological, architectural or cultural heritage feature. Mitigation strategies and knowledge of detail design may ameliorate any adverse indirect impact.
No predicted	Occurs when the proposed development does not adversely or positively affect an archaeological, architectural or cultural site.

Table 2.1: Type of Impact

The impacts of the proposed transmission development on the archaeological, architectural or cultural heritage are first assessed in terms of their quality i.e. positive, negative, and neutral as described below in Table 2.2.

Quality	Description
Negative	A change that will detract from or permanently remove an archaeological, architectural or cultural heritage monument, structure or feature from the landscape.
Neutral	A change that does not affect the archaeological, architectural or cultural heritage environment.
Positive	A change that improves or enhances the setting of an archaeological, architectural or cultural monument, site or feature.

Table 2.2: Impact Quality

²³ EirGrid (2012) Ecology guidelines for Electricity transmission projects – a standard approach to ecological impacts assessment of high voltage transmission projects.

A significance rating which defines the scale or severity of a specific impact is then given i.e. slight, moderate, significant or profound as described in **Table 2.3**.

Significance	Description
Profound	Applies where mitigation would be unlikely to remove adverse effects. Reserved for adverse, negative effects only. These effects arise where an archaeological, architectural or cultural site is completely and irreversibly destroyed by a proposed transmission development.
Significant	An impact, which, by its magnitude, duration or intensity alters an important aspect of the environment. An impact like this would be where the part of a site/structure would be permanently impacted upon leading to a loss of character, integrity and data about the archaeological, architectural or cultural feature/site
Potentially Significant	An impact on a potential feature or area of archaeological, architectural or cultural heritage potential that could be significant without mitigation measures taking place. This impact relates to items of archaeological potential, possible sub-surface remains, recorded archaeology, possible archaeological sites and areas of archaeological potential as well as features of architectural heritage merit and sites of cultural heritage interest.
Moderate	A moderate impact arises where a change to the site is proposed which though noticeable, is not such that the archaeological/ architectural integrity of the site is compromised and which is reversible. This arises where an archaeological, architectural or cultural heritage feature can be incorporated into a modern day development without damage and that all procedures used to facilitate this are reversible.
Slight	An impact which causes changes in the character of the environment which are not significant or profound and do not directly impact or effect an archaeological architectural or cultural heritage feature or monument.
Imperceptible	Impact capable of measurement but without noticeable consequences.

Table 2.3: Impact Significance (Based on *Guidelines for the Assessment of Archaeological Heritage Impact of National Road Schemes* (NRA, 2005))

3 LITERATURE REVIEW AND PLANNING GUIDANCE

3.1 OVERVIEW

Overhead transmission lines are large linear elements (structures) in the landscape. The scale of a transmission line relative to objects in close proximity, for example trees or houses, are such that the major effect is usually the visual intrusion of the towers on the area through which the line is routed²⁴. It is also acknowledged that the construction of towers may disturb previously unknown or subsurface archaeological remains.

The potential issues in relation to archaeology and architectural heritage have been defined as follows in the Strategic Environmental Assessment report conducted for the Grid25 Implementation Programme (2012)²⁵.

Table 3.1: Extracted from EirGrid Environmental Report for Grid25 Implementation Programme 2011-2016. Strategic Environmental Assessment (2012 pg. 91)

Environmental Component	Potential Cumulative effects that could generally occur
Archaeological and Architectural Heritage	<ul style="list-style-type: none"> • Impacts could include interference with sites of archaeological significance during construction and impacts upon the context of archaeological and architectural heritage. • Construction of underground cables may involve significant direct impacts on archaeological heritage. • By facilitating the development of renewable energy infrastructure, which are provided for by land use planning policies including those from the NSS, NDP and lower tier Regional and County Plans impacts could occur upon archaeology. • New or extended substations, cables or facilitated development could impact on any nearby built up areas including heritage. • Impacts could occur upon protected structures and associated 18th and 19th century demesne landscapes.

²⁴ Strategic and environmental impact assessment for overhead electrical transmission lines (R. Marshall & R. Baxter) (2002)

²⁵ Available at www.eirgrid.com

However, there are no empirical studies and there is no published research regarding the effects of transmission projects on cultural heritage assets in Ireland. International studies are focused on the assessment of impact rather than the actual impacts.

In the absence of published literature it was necessary for the purposes of this study to undertake baseline research and to gather a body of evidence from a variety of sources in order to establish and understand the actual impacts of transmission projects in Ireland on archaeological and cultural heritage features and to identify gaps in the data. In order to provide evidence in relation to the effect of transmission projects on cultural assets, a full literature review was undertaken for the project. This sought to:

- Assess the effectiveness of the EIA process in the protection of cultural heritage through careful routing and best practice measures including the Code of Practice (2009) between EirGrid and the statutory authority.
- Review published literature on cultural heritage for other linear infrastructure projects such as roads and gas pipeline and site specific large scale developments such as wind farms and relate these findings to transmission projects and procedures where appropriate.
- Assess the effectiveness of the archaeological licencing procedure²⁶ and review reports on monitoring, testing and excavation that have taken place in Ireland for transmission projects over the last 40 years.

One of the main sources for the review was the examination of the published excavations summaries (Excavation Bulletins²⁷).

The review of the excavations sought to:

- determine as far as the data would allow the extent of excavations relating to transmission projects
- establish the type of sites typically found
- establish the direct and indirect impacts
- establish the impact of specific technology type

²⁶ A licence is issued for archaeological investigation (monitoring, testing, excavation, geophysical survey) by the National Monuments Service in consultation with the National Museum of Ireland.

²⁷ Yearly summary accounts of archaeological investigations in Ireland edited by Isabel Bennett. It is a statutory requirement of the licensing procedure to submit an account of all investigations that have taken place within any given year to the National Monuments Service.

One of the gaps noted during the literature review was the lack of integrated heritage studies that would normally include architectural and cultural heritage. In the absence of a reporting framework, apart from the initial EIS and due to the avoidance of architectural features, there are no further mechanisms for recording and assessing built heritage features.

3.2 METHODOLOGY

The study methodology for the literature review involved the following elements in the desk study:

- A library and internet search of literature concerning the subject of high voltage transmission projects and cultural heritage
- Review of all published Excavation Bulletins and the website www.excavations.ie
- Interrogation of relevant records from *the National Monuments Service Licencing Database*
- The creation of an inventory (Appendix B) organising material (reports) from the Excavations Bulletins, database and individual archaeologists
- Analysis of the findings from individual cultural heritage reports

The literature review results and research is discussed under the following headings:

- International planning guidance
- Irish context - codes of practices and project archaeologists
- Code of Practice and Guidelines
- Frequency of archaeological sites on linear projects
- Licenced projects
- Archaeological findings
- Analysis

3.3 INTERNATIONAL PLANNING GUIDANCE

The routing of transmission projects is a complex process that requires a balance between statutory obligations, land use, engineering requirements, economic viability and the environment. Given the extent and location of schemes, they have the potential to affect environmental aspects including the cultural heritage of the area they travel through.

3.3.1 Europe

Eurelectric²⁸ proposes a best practice approach for managing effectively future transmission projects. When planning new transmission lines and substations it is advised that:

All areas should be avoided that contain items belonging to the cultural heritage, to prevent either direct damage, such as the deterioration or destruction of archaeological remains, or indirect, resulting from placing the substation in the vicinity of a monument and affecting its visual setting²⁹.

and

All areas should be avoided that contain items belonging to the cultural heritage, to prevent either direct damage, such as the deterioration or destruction of archaeological remains, or indirect, resulting from erecting towers or conductors in the vicinity of such a monument and affecting its visual setting.

3.3.2 United Kingdom

In the United Kingdom (U.K), the development of new transmission lines and other works are carried out in accordance with Schedule 9 of the Electricity Act 1989, which requires transmission licence holders to give due consideration to amenity, and to endeavour to mitigate any effects of their proposals on amenity. They are required to take account of the following factors in formulating proposals for the installation of overhead transmission line-:

²⁸ Eurelectric is the sector association representing the common interest of the European Electricity Industry and its worldwide affiliates and associates. Its mission is to contribute to the development and competitiveness of the electricity industry and to promote the role of electricity in the advancement of society.

²⁹ Public Acceptance for New Transmission Overhead Lines and Substations – Networks Committee. Union of the Electricity Industry. Eurelectric. March 2003, pg 10.

'have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest and do what he reasonably can to mitigate any effects which the proposals would have on the natural beauty of the countryside or any such flora, fauna, features sites, buildings or objects.'

The process of achieving the balance between technical requirements and environmental issues for the routing of overhead line grid connection is undertaken through a series of well-established step by step principles that follow a broad set of principles known as the Holford Rules³⁰ (Holford 1959) which set out best practice for the routing of transmission lines.

The guidance is primarily concerned with reducing the visual impact of overhead lines by careful routing. Notes produced by National Grid Company (1992) (the network operator in England and Wales) modernises the guidance and includes reference to the avoidance of World Heritage Sites, registered parks and gardens (Rule 1, Note 1)³¹ and minimising the effects on the setting of areas of architectural, historic and archaeological interest including Conservation Areas, List Buildings, Listed Parks and Gardens and Ancient Monuments. It also recognises that some sites of value may not be within designated areas (Rule 2, Note 2)³².

³⁰ These guidelines on overhead line routing were first set out in 1959. They are presented in the National Policy Statement for Electricity Networks Infrastructure (EN-5). The National Grid have added notes to the original rules (1992).

³¹ **Rule 1** Avoid altogether, if possible, the major areas of highest amenity value, by so planning the general route of the line in the first place, even if the total mileage is somewhat increased in consequence.

Note on Rule 1 Investigate the possibility of alternative routes, avoiding where possible the areas of the highest amenity value. The consideration of alternative routes must be an integral feature of environmental statements. Areas of highest amenity value include: Areas of Outstanding Natural Beauty; National Parks; Heritage Coasts; World Heritage Sites and Registered Parks and Gardens.

³² **Rule 2** Avoid smaller areas of high amenity value or scientific interests by deviation, provided this can be done without using too many angle towers, i.e. the bigger structures which are used when lines change direction.

These rules provide a valuable basis for approaching an assessment. However it is largely recognised that the Holford Rules are of their time and were devised when the area of land designated for environmental and cultural heritage purposes was far smaller than now and therefore easier to avoid and route around.

A limitation of the rules is that they do not provide guidelines as to how to avoid features of cultural heritage interest.

3.3.3 Scotland

In Scotland, the energy supply industry, has adopted its own preferred routing practice. However, these are largely derived from the Holford Rules and the National Grid 'Supplementary Notes for Routing of New High Voltage Transmission Lines'. The approach to routing focuses on establishing a number of potential routes or route corridors and identifying the route that has the least impact. The Scottish system places an emphasis on the importance of consultation.

The National Trust of Scotland has highlighted the issue of wind farms and transmission lines as part of its 2007 election manifesto. The manifesto states that:

At present the greatest threat to Scotland's landscapes comes from ill-sited wind farms and transmission lines. Scotland does need to source more of its energy from renewable sources, but not at the expense of its natural and cultural heritage landscapes, which are also so vital to the health and well-being of the people of Scotland and to the nation's economy³³.

Further to this the 2011 manifesto states:

Scotland needs to reduce the amount of energy it uses, to use that energy more efficiently and to source more renewable sources. However, ill sited windfarms and

Note on Rule 2 Some areas (e.g. Site of Special Scientific Interest) may require special consideration for potential effects on ecology (e.g. to their flora and fauna). Where possible choose routes which minimise the effects on the setting of areas of architectural, historic and archaeological interest including Conservation Areas, List Buildings, Listed Parks and Gardens and Ancient Monuments. Again, recognise that some sites of value may not be within designated areas.

³³ The National Trust of Scotland, *A Call to Action*, 2007, 42

transmission lines could irreparably damage Scotland landscapes and heritage. The trust believes that to prevent this:

- *The Scottish Government must take the lead and identify suitable areas for wind farms and transmission lines*
- *The Scottish Government must develop a national locational strategy with the conservation of Scotland's landscape and heritage at the forefront³⁴.*

In Scotland there have been a number of transmission projects and windfarm developments that have courted controversy, for example the Western Isles connection 400 kV overhead transmission line and the Lewis Wind Farm. In the case of the latter development, Lewis Wind Power (the developer) and the Western Isles Council had to make assurances that the importance of the shielings (historic stone dwellings by crofters and farm tenants) had been taken into account:

Archaeological features were identified and taken into account during the design and consultation process. Issues around shielings were considered by the Comhairle (Western Isles Council) and its elected members during the process that led to their vote for the scheme. The construction process will be carefully managed to avoid damaging any important archaeological features³⁵

The initial proposal was reduced to 181 wind turbines, revised and subjected to further environmental assessment before the Western Isles Council recommended that the Scottish Executive approve this revised project. The Scottish Executive refused planning.

In 2010, the Energy Minister for Scotland approved a scheme for thirty-three turbines at Lewis in the Western Isles. Compensatory mitigation measures were agreed with the developer committing one per cent of turnover of the wind farm to the Muaitheabhal Community Wind Farm Trust, to enhance the ecological and cultural heritage resource of the Eisgein estate³⁶.

The Beaully-Denny 400 kV Transmission Project (220km) in Scotland was granted approval on January the 6th 2010 having met with considerable opposition on the conservation and

³⁴ The National Trust for Scotland, Scottish Parliamentary Elections Policy Manifesto, 2011, 3

³⁵ Scotsman, 'Historic dwellings face uncertain future', 2005

³⁶ www.scotland.gov.uk

landscape issues³⁷. The cultural heritage assessment of the EIS did not predict any significant direct adverse effects on the known cultural heritage and archaeological remains. Major adverse effects on the setting of three cultural heritage sites were predicted. Moderate adverse effects were predicted on the setting of sixty-eight sites. Successful mitigation measures of micro-siting tower locations will reduce these effects³⁸.

The cultural heritage conditions attached to planning approval included the creation of an environmental liaison group and a tourism, cultural heritage and community liaison group. The applicant was required to submit a Construction Procedure Handbook CPH, detailing how the development is to be constructed and managed with the objective of minimising disturbance to the environment and impacts on tourism, historic sites and cultural heritage.

Mitigation measures as specified in the EIS was also required to be carried out. In addition, the applicant was required to appoint appropriate and qualified specialists in cultural heritage and archaeology, whose role is that of giving advice on the subsequent development, review of the CPH and to produce a monthly report.

Other specified conditions included:

64.-*No mature tree shall be felled adjoining the access track that runs past Croftmoraig Stone Circle to Tullichuil unless the particular planning authority have confirmed that they are satisfied that there is no alternative to gain access for construction. Lopping branches shall be considered as a first option. Any dry stone walls that are removed to permit access shall be reinstated to the satisfaction of the planning authority in consultation with SNH.*

65.-*Where any access routes cross or join the Rob Roy Way the applicant shall reinstate the Way to its previous width and character and/or make good any damage that results from crossing the Way by construction access to the satisfaction of the planning authority.*

To assist the on-site work and to keep the public informed, an information booklet was compiled outlining why the project was necessary. It also detailed the design and type of infrastructure required and the processes involved. The booklet provided detail on how mitigation measures for environmental issues will work and contact details for community liaison managers who will address any concerns about the work. While a simple and practical

³⁷ Beaully-Denny 400 kV Transmission Project, Parliamentary Briefing, March 2009, Beaully-Denny Landscape Group

³⁸ Scottish and Southern Energy (2009) The Beaully-Denny 400 kV replacement transmission line project EIS, non technical summary, 15

document, it is a good example of how to keep people informed on the key construction and environmental issues.

3.3.4 Australia

In Australia, in terms of landscape assessment it is recognised that cultural and natural values should be dealt with in an integrated and holistic manner (Burra Charter 1999³⁹).

The Australian Council of National Trusts and the Australian Wind Energy Association have collaborated on a project to identify, analyse and develop priorities for assessing landscape values in relation to the siting of wind farm developments⁴⁰. The assessment principles employed in the national heritage system are used as an example of a more inclusive methodology. Heritage is defined as part of the environment. Places and landscapes can be included in the National Heritage List for natural, indigenous, or cultural (historic, aesthetic and spiritual) values.

In this way, heritage is seen to encompass intangible as well as tangible values⁴¹. However, not all these values can be measured or quantified as the project document suggests:

It is relatively easy to quantify the effects of a wind farm development on the tangible values of native vegetation; it is more difficult to quantify the effects on intangible values such as an individual's feelings about a place⁴².

In order to appropriately record and document these values effective community involvement in the assessment process will be required. The paper concludes with the following on how this could be achieved:

For a landscape assessment to be a useful guide for the planning and development of wind farms, there does need to be a balance between subjective input and professionally developed frameworks with which to understand and document this input.

³⁹ The Burra Charter (1999.) The Australia ICOMOS Charter for Places of Cultural Significance. The charter applies to all types of places of cultural significance including natural, indigenous and historic places with cultural values.

⁴⁰ Australian Council of National Trusts & Australian Wind Energy Association, Wind Farms and Landscape Values Stage one Final Report: Identifying Issues, Canberra, 2005, 2-17

⁴¹ Ibid, 15

⁴² Ibid, 16-17

The project demonstrates how setting is assessed on differing but similar infrastructural projects.

3.3.5 Landscape and the Setting of Heritage Assets

English Heritage has developed guidance in relation to the setting of heritage assets and development (2011)⁴³. The guidance has been designed to assist in the decision making process regarding development proposals and heritage assets. While consideration of setting is necessarily a matter of informed judgement, the aim of the guidance is to assist effective and timely decision-making by ensuring it takes place within a clear framework and is as transparent and consistent as possible.

According to English Heritage, setting is not a heritage asset, nor a heritage designation. Its importance lies in what it contributes to the significance of the heritage asset. All heritage assets have a setting, irrespective of the form in which they survive. They can be obvious, for example, a designed landscape such as Russborough House, Co. Wicklow, created to appreciate particular views and vistas. Equally, an historic battle, such as the Battle of the Boyne, Co. Meath leaves little visible trace, but the location includes strategic views and routes used by the opposing sides and historic associations with the landscape. Most settings have also experienced change and have been altered over time and how people enjoy the heritage asset is also an important aspect of setting.

English Heritage recommends the following assessment steps:

Step 1: identify which heritage assets and their settings are affected;

Step 2: assess whether, how and to what degree these settings make a contribution to the significance of the heritage asset(s);

Step 3: assess the effects of the proposed development, whether beneficial or harmful, on that significance;

Step 4: explore the way maximising enhancement and avoiding or minimising harm;

Step 5: make and document the decision and monitor outcomes⁴⁴.

⁴³ English Heritage Guidance The setting of heritage assets 2011, 6-8

⁴⁴ Ibid, 15

Whilst these may assist analysis, as setting is a matter of qualitative and expert judgement, they cannot provide a systematic answer. English Heritage recommends that

When submitted as part of a design and access statement, Environmental Statement or evidence to a Public Inquiry, technical analyses of this type should be seen primarily as material supporting a clearly expressed and non-technical narrative argument that sets out ‘what matters and why’ in terms of the heritage significance and setting of the assets affected, together with the effects of the development upon them⁴⁵.

English Heritage have put together a non-exhaustive check list of attributes to consider when assessing how and to what degree settings make a contribution to the significance of a heritage asset. This list considers the physical surroundings, the experience and associate attributes of the asset.

The asset’s physical surroundings
Topography
Other heritage assets (including buildings, structures, landscapes, areas or archaeological remains)
Definition, scale and ‘grain’ of surrounding streetscape, landscape and spaces
Formal design
Historic materials and surfaces
Land use
Green space, trees and vegetation
Openness, enclosure and boundaries
Functional relationships and communications
History and degree of change over time
Integrity
Issues such as soil chemistry and hydrology
Experience of the asset
Surrounding landscape or townscape character
Views from, towards, through, across and including the asset
Visual dominance, prominence or role as focal point
Intentional intervisibility with other historic and natural features
Noise, vibration and other pollutants or nuisances
Tranquillity, remoteness, ‘wildness’
Sense of enclosure, seclusion, intimacy or privacy
Dynamism and activity

⁴⁵ Ibid, 17

Accessibility, permeability and patterns of movement
 Degree of interpretation or promotion to the public
 The rarity of comparable survivals of setting

The asset's associative attributes

Associative relationships between heritage assets
 Cultural associations
 Celebrated artistic representations
 Traditions⁴⁶

When assessing the effect of the proposed development the following checklist may help to elucidate the implications for the significance of the heritage asset.

Location and siting of development

Proximity to asset
 Extent
 Position in relation to landform
 Degree to which location will physically or visually isolate asset
 Position in relation to key views

The form and appearance of the development

Prominence, dominance or conspicuousness
 Competition with or distraction from the asset
 Dimensions, scale and massing
 Proportions
 Visual permeability (extent to which it can be seen through)
 Materials (texture, colour, reflectiveness etc.)
 Architectural style or design
 Introduction or movement or activity
 Diurnal or seasonal change

Other effects of the development

Change to built surroundings and spaces
 Change to skyline
 Noise, odour, vibration, dust etc.
 Lighting effects and 'light spill'
 Change to general character
 Changes to public access, use of amenity
 Changes to land use, land cover, tree cover
 Changes to archaeological context, soil chemistry or hydrology

⁴⁶ Ibid 19

Changes to communications/ accessibility/ permeability
Permanence of the development
Anticipated lifetime
Recurrence
Reversibility
Longer term or consequential effects of the development
Changes to ownership arrangements
Economic and social viability
Communal use and social viability ⁴⁷

English Heritage recommends that, wherever practicable, consideration of the setting of heritage assets is incorporated within relevant sectoral guidance and statements of best practice prepared by decision-making authorities and utility providers.

3.4 IRISH CONTEXT - CODES OF PRACTICE & PROJECT ARCHAEOLOGISTS

Codes of Practice have been drawn up between the Irish Government and a number of state and private infrastructure providers⁴⁸. These codes are generally guided by the following principles:

- Every effort will be made to avoid direct impacts on archaeology;
- A Project Archaeologist will be employed to provide in-house expertise or by retainer who will work with the developer and project design team during planning and construction stages, with a view to minimising the impact on known archaeological sites or areas of archaeological potential and provide advice and liaison with the regulatory authorities.

⁴⁷ Ibid , 21

⁴⁸ National Roads Authority (NRA) (2000), Bord Gáis Éireann (2002), Railway Procurement Agency (RPA) (2007), Irish Concrete Federation (2009), Coillte, Bord na Móna (2012), ESB Networks (2009), EirGrid (2009) and Iarnród Éireann (2012)

The role of the Project Archaeologist⁴⁹ as defined by the various Codes of Practice is

Table 3.2: Project Archaeologist Role

Number	Task
1	Be engaged/ employed by specific infrastructure providers for a specified period.
2	Work closely with engineering consultants at pre-planning stage of the project, with a view to informing route selection and seeking to minimise the impact on known archaeological sites or areas of established archaeological potential.
3	Prepare the specification for the consultant archaeologist at EIA stage and ensure that all preparatory archaeological work (desk study, field walking, test-trenching, aerial photography and if necessary, geophysical surveys etc.) for the EIA is in accordance with best practice.
4	Ensure that the EIA and mitigation recommendations are in keeping with best practice and policies as determined by the Department.
5	Be responsible for ensuring that the applications for excavation licences and applications for ministerial consent are in order before they are submitted to the Department. An application for ministerial consent must fully identify the national monument concerned and must include a complete description of the proposed works. Where archaeological excavation is required a method statement must be included with the application. The method statements will specify the way in which the excavations are to be conducted and also the timescales for the completion of the recording of the sites.
6	Be responsible for overseeing the conduct of the archaeological excavation to ensure that the work is conducted in accordance with the conditions and within the agreed timescales.
7	Submit any proposed changes to method statements to the Department for approval.
8	Ensure that archaeological mitigation and archaeological excavations are carried out to a standard acceptable to the Minister.

⁴⁹ As above (footnote 47)

9	Certify all archaeological costs.
10	Notify the Department when the excavation has been completed.
11	Ensure the nature and quality of excavation reports are of a standard acceptable to the Minister and are submitted within the agreed time scale.

By having a Project Archaeologist present throughout the planning and development process a consistent, independent approach to a portfolio of individual projects is assured and a centralised framework of managing and organising all archaeological considerations is developed.

The development of the role of Project Archaeologists in organisations such as the NRA is well documented⁵⁰ and has led to the timely delivery of meaningful statutory compliance and key deliverables (**Table 3.3**) ensuring value for money. Research programmes, seminars, publication of findings and an organised approach to data management has been developed within the organisation.

Table 3.3: NRA Project Archaeologist Deliverables

Deliverables	NRA Compliance	Statutory Requirement
Excavation Report	√	√
Database	√	
Popular Publication	√	
Publication	√	√
Excavation Summary	√	√

⁵⁰ Daire O'Rourke (2006) *Archaeology and roads: an historic opportunity* in Settlement, Industry and Ritual, Monograph Series No. 3, pp. 1-6.

Ken Hanley (2003) *The Role of the Project Archaeologist and the Code of Practice in Archaeology and the National Roads Authority*, Monograph Series No. 1, 25-32

Daire O'Rourke (2003) *Archaeology and the National Roads Authority in Archaeology and the National Roads Authority*, Monograph Series No. 1, 19-24

Archive – National Monument Service	√	√
Artefacts – National Museum of Ireland	√	√

The Project Archaeologists appointed under the Codes of Practice have a direct role in determining the level of archaeological mitigation required and ensuring all mitigation is carried out in a satisfactory and cost effective manner. The new Bill to consolidate the National Monuments Acts will give a general statutory basis for the promotion of the Codes of Practice with infrastructure providers (National Monuments Service 2009b).

3.5 CODE OF PRACTICE – EIRGRID

In 2009, EirGrid developed a Code of Practice with the Department, which outlines the principles and measures to be applied to ensure the protection of Ireland’s archaeological heritage whilst developing and upgrading the existing transmission system.⁵¹ The code includes the following principles:

- Every effort will be made to avoid direct impacts on archaeology;
- Mitigatory planning will take place at the earliest opportunity as it minimises the impact on the archaeological heritage;
- EirGrid and the Minister will co-operate to ensure, as far as possible, that appropriate archaeological investigation is carried out during the period from route identification to the commencement of construction;
- If avoidance cannot be achieved, EirGrid will finance a balanced and cost effective approach to archaeological investigation, excavation and mitigation as an integral element of the transmission system development programme.

The Code of Practice confirms that EirGrid has agreed with the statutory authorities safeguards that protects archaeology, and outlines its commitment to avoid archaeology where possible. However the code differs from others⁵² in that it proposes the appointment of

⁵¹ EirGrid Code of Practice (2009a)

⁵² Apart from Coillte’s Code of Practice which seeks to appoint a suitably qualified archaeologist who will deal with the process of identifying the potential impact of forestry proposal on known archaeology.

a consultant archaeologist as opposed to a project archaeologist for any transmission project that requires an Environmental Impact Statement (EIS).

The consultant archaeologist will independently assess the feasible site/route alternatives, will advise in relation to the construction strategy, and will input into the development with regard to the management of archaeology.

3.6 GUIDELINES

In Ireland, there are a number of guidance documents issued by government departments, local authorities and utility developers to assist in the identification, protection and avoidance of heritage assets. These guidances also assist in standardising the approach taken during the planning and design stages of infrastructural schemes. In particular the EIA process (constraints, route selection and EIS) is assessed in order to produce comprehensive reports acceptable to statutory consultee employing all available sources.

The planned development and upgrading of the national grid should have regard to existing guidance and ensure that it is based upon established, proven cultural heritage data in order to promote the most effective measures to mitigate any identified negative impacts (see section 3.6.1 below).

3.6.1 Existing Guidance

Framework and Principles for the Protection of the Archaeological Heritage (1999)

These guidelines prepared by the Department of Arts, Heritage, Gaeltacht and the Islands (DAHGI) set out the basic principles of national policy on the protection of the archaeological heritage. A key principle is that there should always be a presumption in favour of avoidance of developmental impacts on the archaeological heritage and preservation in-situ of archaeological sites and monuments must be presumed to be the preferred option.

Policy and guidelines on archaeological excavation (1999) DAHGI

This document covers the policy on licensing excavations, guidelines for applicants and licensees and outlines the standard set of licensing conditions.

Architectural Heritage Guidelines for Planning Authorities (2006) DAHGI & DELG

The objective of these guidelines is to protect architectural heritage, they offer guidance to planning authorities, owners and occupiers of protected structures and those proposing to carry out works on historic structures generally. The guidelines also set out general principles

for the assessment of the extent of the curtilage and attendant grounds of a protected structure which are integral to the character of that structure.

Guidance Notes for the appraisal of historic gardens, demesnes, estates and their settings (2006) Cork County Council

The purpose of this guidance note is to facilitate the preparations of appraisals of historic gardens and designed landscapes in the context of any development proposal that might impact on their heritage value and to foster a better understanding of designed landscapes.

To ensure that the highest archaeological standards are met during the planning process, the NRA has published two sets of guidance:

Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes (2005a)

and

Guidelines for the Assessment of Architectural; heritage Impacts of National Road Schemes (2005b)

The aim of these documents is to provide guidance on the treatment of the archaeological and architectural heritage during the planning and design of national road schemes and to promote a standardised approach to the production of comprehensive reports that employs all available sources. In practice these guidelines have enabled consultant archaeologists and heritage consultants throughout Ireland to successfully complete all planning reports for the EIA process (Constraints/feasibility studies, Route Selection reports and EISs) to a consistent standard acceptable to the statutory consultees under the guidance of the NRA Project Archaeologists.

The NRA has also published:

Guidelines for the Testing and Mitigation of the Wetland archaeological Heritage for National Road Schemes (2005c)

These guidelines assist the project design team, project archaeologist, archaeological consultant and contractors working on testing, field survey, and excavation and post-excavation phases of archaeological mitigation in wetland environments on national road schemes.

The Forest Service has produced a set of guidelines:

Forestry and Archaeology Guidelines for the Forest Service (2000)

These guidelines advocate the avoidance of recorded monuments and protected structures and the reporting of newly revealed archaeological and cultural heritage sites to the appropriate authorities. The guidelines have been compiled to assist non-archaeologists involved in forestry development to identify archaeology sites and set out the procedures which should be followed to avoid site disturbance. The document focuses on the post-planning stages of development, for example the planting and harvesting of trees as these activities create the greatest potential for disturbance of archaeological sites which themselves are often difficult to recognise in a forest setting.

The guidelines also acknowledge the importance of more recent buildings and man-made structures such as farmhouses, cottages, limekilns as well as pier and stone entrances, townland boundaries, mass paths, mass rocks and drover routes that are disappearing from the landscape. It also states that stone walls should also be retained where possible.

3.7 FREQUENCY OF ARCHAEOLOGICAL SITES ON LINEAR PROJECTS

Transmission route planning typically aims to avoid heavily populated areas (on the grounds of visual and amenity impact) however in order to provide distance from population centres, transmission projects may be located in more remote areas often noted for their well-preserved historic remains and their natural attributes. This creates the potential to bring the location and siting of projects into direct conflict with archaeological and historic environments.

While the construction of transmission projects has the potential to damage previously undiscovered archaeological remains, ground disturbance associated with the overall footprint of an overhead line (steel lattice tower, angle tower and/or double wooden poleset) is comparatively very limited, when compared with other more conventional forms of development. Furthermore, flexibility in the siting of individual structures affords significant opportunity to avoid obvious damage.

A sample of six 110 kV projects (transmission and distribution projects) undertaken in the last ten years where archaeological monitoring and investigation has taken place was examined, the results are contained in **Table 3.5**. Each of these investigations is recorded in Appendix B and can be referenced by year and licence number. Where possible, information is given on the number of structures that were monitored and investigated for archaeological purposes.

Monitoring took place on two 110 kV lines linking Cashla 220 kV substation with the existing Dalton-Galway 110 kV line at Barravilla and Baile Chlair (Licence No.10E0038). The four footings per angle tower, each measuring 3.3m² or 2.3m², were monitored as well as a sample of the 85 polesets. A previously unrecorded ring barrow was identified in the centre of the same field as angle tower 15 about 40m to the south-west of the tower. A gas pipeline which also passes through the field can be seen to kink around the barrow on aerial photographs. The barrow measures 14m east-west by 16m. A possible second monument lies c.60m south-east of the barrow in the same field. It may simply be a pond that measures 6m east-west by 7m with an interior depth of 0.6m but its proximity to the barrow raises the possibility that it is also archaeological. A stone structure was identified to the west of angle tower 6. It measured 4m north-south by 4.5m by 2.7m high. It is built above the intersection of four field boundaries and resembles an elaborate crossing point with four sets of stone steps leading up to a viewing platform.

Apart from the features noted in the field in proximity to the transmission line, no features or archaeological material were revealed as a result of the monitoring of the excavated footings.

For the Carrowbeg-Castlebar 110 kV line monitoring (Licence No.09E0309) was carried out during the excavation of the footings of each of the fifteen angle towers and also in the areas where intermediate polesets were located in close proximity to aerial photographic anomalies identified in the cultural heritage impact report. Monitoring of works was also undertaken in the vicinity of ecclesiastical remains (MA077-018). No archaeological finds or features were uncovered during the course of monitoring on this scheme.

On the Castlebar to Cloon 110 kV line, the archaeological impact assessment (Moore Group 2002) recommended that monitoring (Licence No. 02E0956) take place throughout the scheme and seven areas in proximity to recorded sites were test excavated in advance of construction (**Table 3.4**).

Table 3.4: Investigated Recorded Monuments

Pole/Tower No.:	Townland:	In Vicinity of :	National Grid Reference:
141	Caltragh	Enclosure MA101:063	13206/27375
137	Caltragh	Burial Ground MA101:060	13206/27375
73	Brownhall Demesne	Enclosure MA090:048	12365/28312
53	Ballinlassa	Enclosure MA090:011	12061/28464
50 & 49	Roslahan	Enclosure MA090:008	12040/28518
46	Elmhall	Elmhall House MA090:146	12000/28536
27	Lisgowel	Enclosure MA079:054	11909/28847

No finds or features of archaeological significance were uncovered.

On the Killonan-Tipperary 110 kV line the EIS identified a number of points on the route where associated groundworks could impinge on either listed sites or site of potential archaeological significance. The sites of sixteen separate polesets and angle towers were determined to require mitigation by archaeological investigation (Licence No. 02E0403). This investigation consisted of the manual excavation of a test trench adjacent to the proposed location of each structure. Each trench measured 1m square. Nothing of archaeological significance was revealed.

Monitoring of the construction of the Flagford-Tonroe 110 kV was required as a condition of a grant of planning permission (Licence No. 02E0944). A pointed wooden stake (0.33m long and 30mm in diameter) with two facets cut with a metal blade was retrieved from peaty topsoil. This stray find was not associated with any feature or occupation material.

Following the recommendations of the cultural heritage impact report (CRDS 2001) and consultation with the statutory authorities, a programme of pre-development testing and monitoring (Licence No. 03E0250) was undertaken on the Charleville to Newmarket 110 kV line. Archaeological remains were found at four polesets, in each case, it was possible to relocate the poleset position to avoid archaeological deposits. Charcoal-rich material and cremated bone were found during testing and monitoring of poleset 21. A linear feature associated with and physically related to the site of Milltown Castle (RMP CO007-039) was revealed during the monitoring of poleset 14. During the monitoring of poleset 84 material typical of a fulacht fiadh was exposed and a previously unrecorded lime kiln was recorded 80m west of poleset 117.

Table 3.5: Transmission/Distribution projects investigated for archaeological purposes

Project and date	Licence No.	Project Length	Polesets & Structures	Occurrence of archaeology
GALWAY Cashla 220 kV substation-Dalton-Galway 110 kV (2010)	10E0038	22km	33 angle towers & 85 polesets (all angle towers were investigated and polesets identified as having an archaeological potential in the EIS were investigated).	3 features revealed in proximity to the scheme. No features were revealed as a result of monitoring the excavated footings.
MAYO Carrowbeg – Castlebar 110 kV (2009)	09E0309	22km	15 angle towers and a number of polesets (unspecified)	0
GALWAY-MAYO Castlebar-Cloon 110 kV (2002)	02E0956	57.3km	253 polesets & 38 angle towers (all areas monitored and 7 areas were investigated)	0
TIPPERARY Killonan – Tipperary 110 kV (2002)	02E0403	42km	27 polesets & 5 angle towers	0
ROSCOMMON Flagford – Tonroe 110 kV (2002)	02E0944	32.3km	Unspecified. The footings for all polesets and angle towers were archaeologically monitored.	1 wooden artefact recovered from the topsoil.
CORK Charleville – Newmarket 110 kV distribution project (2003)	03E0250	unspecified	EIS recommended several areas to be investigated. Polesets 14, 21, 84, 117 were relocated to avoid archaeology.	4 features revealed and avoided.

In sharp contrast to these results is the statistical analysis for large linear schemes such as road and gas pipelines. Recent large-scale archaeological investigations of linear infrastructure projects such as motorways and pipelines have resulted in the discovery of large numbers of archaeological sites (Mount 2011).

For example the Bord Gàis pipeline to the west construction corridor was 335 km long and impacted an area of 1,005 ha. During the course of the development, 190 previously unknown archaeological sites were identified, that is one site per 5.3 ha. (Grogan *et al*, 2007, 5-9). Similarly, during construction of the Cork to Dublin gas pipeline 96 monuments were impacted over a distance of 222m, an area of 489 ha., representing one site per 5.1 ha (Eogan 2009).

During the construction of the M8 Motorway, 249 sites were identified in an area of 1,494 ha., or one site per 5.6 ha. (Eogan 2009).

A total of 299 hectares of land was subject to the compulsory purchase orders (CPO) associated with the N25 Waterford City Bypass scheme. The frequency of excavated archaeological sites along this scheme is one site per 3.6 hectares of land subject to CPO. The frequency of previously undocumented archaeological sites on this project is comparable with the frequency of sites encountered on a number of sections of the M8 in counties Laois, Kilkenny, Tipperary and Cork (Eogan 2009).

Using the above figures, the average ratio of sites per hectare can be calculated as one site per 4.9ha. Allowing for the geographical and topographical distribution of sites, there is therefore a strong probability that almost any development impacting on an area of 4.9ha or more has the potential to impact on archaeological remains.

Wind farms and wind turbines may have the most similar footprint in terms of infrastructure to transmission projects. Using an illustrative development of six turbines, covering a total area of 14 hectares, the actual footprint of the turbines and their associated infrastructure may be limited to 1% to 2% of the overall development area (English Heritage 2005). There is no statistical analysis available in Ireland as to the occurrence of cultural heritage findings in relation to the development of wind farms.

Underground cabling has a greater excavation footprint and therefore a greater potential to reveal buried archaeology or cultural heritage features. Substations also have a large excavation footprint and have the potential to disturb the setting of a designed landscape, monument or a protected structure. Further analysis on the results of investigation undertaken for high voltage projects is detailed below in the section 3.8 of the report.

3.8 LICENCED PROJECTS

As part of establishing baseline data as to the extent of investigations that have taken place to inform transmission projects the *Excavations* bulletins (the published inventories and www.excavations.ie were interrogated. All archaeological investigatory work such as test excavation, monitoring and excavation is undertaken under licence to the Minister and the National Museum of Ireland who have a statutory role of regulating and controlling archaeological excavation⁵³. Summary publication is a mandatory requirement under the terms of an archaeological licence.

The data gained from the bulletins was cross referenced with the licencing database held in the Department of Arts Heritage and the Gaeltacht (DAHG) and records from individual archaeologists where possible. A number of limitations in the data were noted namely:

- The licence database held in the DAHG dealt with licences from 1990 onwards. Information held in the department did not always tally with the excavation bulletins; this may be for a number of reasons such as the licence application being made but the work not carried out, the work being carried out under a different name or licence number. These issues are limited and were not explored in any greater detail as it was outside the scope of this project. For the purpose of this report it is suffice to note this as a limitation.
- The *Excavations* bulletin is devised to provide summaries of excavations so that people have an idea of what type of sites are being investigated until such time as the full report becomes available, the prime purpose is to describe the archaeology found (if any). For this public record there is no onus for contributor to describe the 'proposed development' or why the site is being excavated. Therefore it can be difficult to establish why the excavation was undertaken and for who, as such it is reasonable to assume that some sites carried out for electricity projects have been inadvertently omitted from the inventory.
- Equally where it is specified that work was carried out for the ESB, it is not stated in a lot of cases whether or not this was undertaken for local connection purposes (38 kV) or for infrastructure associated with 400 kV, 220 kV, and 110 kV. For the purpose of this report this study assessed all entries, as it is considered preferable to include all references in relation to electricity projects completed to date to provide as comprehensive a record as possible.

⁵³ DAHGI (1999) Policy and Guidelines on Archaeological Excavation, Dublin pgs7-21.

- As archaeological recording was very different in the 1970 and 1980s, the record is not seen as a dependable reflection of the work carried out during that period. Indeed there are no entries for the following years 1970-71, 1973-74 and 1976-1990. This includes the 1980's, a time of significant expansion of the National Grid in Ireland.
- While there is a mandatory obligation to submit reports of archaeological work undertaken under licence to the DAHG and the National Museum of Ireland as part of their licencing requirement it has been difficult to obtain previous work undertaken in relation to electricity and transmission projects. Prior to interrogating the archaeological summaries held in the *Excavations* bulletins, there was no way of accessing reports without knowing the licence number and licensee as they are not stored according to project type. The study revealed that reports may have been sent to individual archaeologists responsible for different areas as well as to the licensing section at the National Monuments Service.

However, even with these acknowledged limitations; 103 investigations have been identified and recorded in relation to electricity and transmission projects in Ireland and examined for the purpose of this report (Appendix B). This data provides good baseline information over a wide geographical area with a large regional spread for a number of different scenarios including transmission lines, substations, underground cables and similar construction works, indirect works and/or works as a result of other schemes.

3.9 FINDINGS

An analysis of the available information on licenced monitoring and test excavation results over the last 40 years has revealed that the majority of sites identified during the monitoring or site investigation for OHL are small scale in nature (such as fulachta fiadh and burnt spreads) and that underground cabling has revealed partial evidence for larger sites and revealed burial and skeletal remains.

The evidence is only reliable for the last 10 years (2000-2010) and there seems to be a gap in the archaeological record throughout the 1980's when some major transmission projects were constructed such as 400 kV Dunstown–Moneypoint and 220 kV Cashla–Flagford.

A sample consisting of 103 investigations was collated and provides information on different aspects of transmission projects as well as a general account of the type of investigation undertaken. **Table 3.9** details the year when the investigation took place and the location (on a county basis). These results are discussed under the following categories in the following sections of this chapter:

- OHL (**Table 3. 6**) (34 licences)

- Underground cabling (**Table 3.7**) (20 licences)
- Substations (**Table 3.8**) (25 licences)
- Miscellaneous (22 licences)
- Two excavations conducted by the National Museum of Ireland took place in the early 1970s at the request of the ESB.

3.10 ANALYSIS

3.10.1 Overhead lines (OHL)

Archaeological monitoring and test excavation of OHL is documented on 34 separate occasions in the archaeological record from 2010–1970 (Appendix B). **Table 3.6** records when and how many investigations took place within a particular year and if archaeological features were revealed as a result of monitoring the excavated footings for polesets and towers. It also records where previously unknown cultural heritage features and monuments were identified in proximity to transmission projects. It is considered that this is as an indirect result of having an archaeologist on site.

Table 3.6: Archaeological Investigation of OHL

Date	Frequency of Investigation	Archaeology Revealed	Cultural heritage assets revealed in the environs of the transmission project
2010	2	0	2
2009	2	0	0
2005	4	0	0
2004	2	0	0
2003	2	1	1
2002	13	2	0
2001	4	0	1
1998	2	1	0
1997	2	0	0
1993	1	0	0

On four occasions archaeology was revealed as a result of monitoring or test excavation at towers or double wood polesets along overhead lines. These findings occurred at:

- Cork (2003): Charleville – Newmarket 110 kV, three areas of archaeology revealed. Poleset 21 – charcoal rich area and cremated bone (located 50m from ringfort RMP CO 007-035), poleset 14 – linear feature associated with Milltown castle (RMP CO 007-039), poleset 84 – material typical of a fulacht fiadh was revealed (located in proximity to CO 006-077, ecclesiastical complex). Predevelopment test excavation at selected locations (identified in the cultural heritage report (CRDS, 2001)) allowed the relocation of polesets (licence ref. 03E0250).
- Waterford (2002): Waterford 110 kV Loop Line, Knockaderry Lower/Johnstown townland, fulacht fiadh material was revealed (licence ref. 02E1445).
- Roscommon (2002): Flagford-Tonroe 110 kV, pointed wooden stake, two facets cut with a metal blade probably iron (0.33m long and 30mm in diameter) revealed in Drummercool townland. This was a stray artefact recovered from the peaty topsoil (licence ref. 02E0944).
- Cavan (1998): Enniskillen-Gortawee 110 kV, burnt area revealed (2.5m north-south x 2m east-west x 0.1m thick). This feature was inundated with water (licence ref. 98E0592).

Four previously unrecorded archaeological and cultural heritage sites were identified in proximity to transmission projects and recorded as a result of the monitoring process:

- Galway: Dalton-Galway 110 kV, a barrow 40m southwest of an angle tower 15 in Lisheenavalla (licence ref.10E0038) and a possible ritual pond feature.
- Galway: Dalton-Galway 110 kV, an unusual stone structure was identified to the west of angle tower 6 in Cashla. It measured 4m north-south x 4.5m x 2.7m high and is depicted on the second but not the first edition OS map. It was built above the intersection of four field boundaries. It resembles an elaborate crossing point with four sets of stone steps leading up to a viewing platform or watchtower (licence ref.10E0038).
- Cork: Charleville-Newmarket 110 kV, a limekiln 80m west of a poleset (licence ref. 03E0250).
- Louth: Jenkinstown-Grange townlands, a midden was recorded and subsequently avoided in routing a low-voltage ESB line (licence ref. 01E1218).

There was a significant increase in licences issued in 2002 for work on OHL. This can be attributed to three extensive archaeological monitoring projects which took place that year:

110 kV Castlebar-Cloon, 57.3km, eight separate licences

110 kV Killonan – Tipperary, 42km, two licences

110 kV Flagford – Tonroe, 32.3km, one licence

In addition, a diversion to an existing 110 kV OHL took place in Dublin (Ballyman) (licence ref. 02E1864) and the Waterford 110 kV loop project (licence ref. 02E1445) where fulacht fiadh material was revealed was also undertaken during 2002.

Individual licences were taken out at specific locations on the Castlebar-Cloon 110 kV OHL where test excavation was carried out in sensitive archaeological locations in advance of construction. This therefore increased the number of entries for this specific year. No archaeology was revealed as a result of these investigations.

3.10.2 Underground cabling

Twenty archaeological licences are recorded as having been issued for work associated with underground cables for electricity and transmission projects from 2010-1970 (Appendix B).

Table 3.7: Archaeological Investigations of Underground Cabling Projects

Date	Frequency of Investigation	Archaeology Revealed
2010	2	2
2009	1	0
2008	2	2
2007	1	1
2006	1	1
2004	1	0
2003	2	1
2002	4	3
2001	2	1
1999	2	2
1997	1	0
1996	1	0

Thirteen archaeological discoveries were revealed as a result of the monitoring of the twenty projects. For the purpose of this study, all work associated with underground cabling that revealed archaeological remains was recorded. These are as follows:

- 2010, Mayo-Ballynew – Medieval Burials (licence ref.10E0150)
- 2010, East West Interconnector Project, Dublin – Burials (licence ref. 10E155)
- 2008, War Memorial Gardens, Dublin – Viking Burial (licence ref. 08E0693)
- 2008, Phoenix Park, Dublin – Post Medieval Remains (licence ref. 08E739ext)
- 2007, Tipperary, Cahir – Disarticulated bone revealed beside the east boundary wall of St Mary's Medieval Church and graveyard (licence ref. 07E0148)
- 2006, Roscommon – Field boundary (licence ref. 06E0297)
- 2003, Tipperary, Cashel – Wall foundation thought to be post medieval in date (licence ref.03E01447)
- 2002 Sligo, Carrowmurragh – Charcoal enriched clay spread and burnt stone with no datable evidence (licence ref. 02E1740). The feature occurred at 0.5m-0.6m below ground level and extended for 4m in the trench (licence ref.02E1740)
- 2002 Sligo, Cunghill-Kingsmountain – Charcoal spread identified (licence ref. 02E1431)
- 2001 Cork, Youghal – Three stone culverts preserved in situ, wall observed (licence ref. 01E1149) and an extension to the licence in 2002 uncovered the flooring of an 18th–19th century house (licence ref. 01E1149)
- 1999 Galway, Athenry – Loose stones found in the vicinity of the town wall (licence ref. 99E0655)
- 1999 Meath, Trim – Urban medieval features revealed (Licence ref. 99E0041)

In the case of three of the above findings, an archaeologist was requested to monitor work after contractors revealed:

- Disarticulated bone adjacent to a church in Tipperary (07E0148)
- A Viking burial (disturbed) with associated finds of an iron sword, spearhead, copper alloy plain ringed loop-headed ringed pin and a possible scale pan and pointer in Dublin (08E0693). The finds were retrieved from the spoil heap.

- A collapsed trench for cabling revealed burials along the East West Interconnector Project adjacent to the Rogerstown Estuary, Rush, north Co. Dublin (10E155).

3.10.3 Substations

Twenty-five archaeological licences have been issued from 1998-2010 in relation to work undertaken at substations (Table 3.8 and Appendix B).

Table 3.8: Archaeological Investigations of Substations

Date	Frequency of Investigation	Archaeology Revealed
2010	1	0
2009	2	0
2008	1	0
2007	1	0
2006	1	0
2005	1	0
2004	8	2
2002	4	1
2001	2	1
2000	1	0
1999	2	0
1998	1	0

This work revealed the following buried archaeological features at four substations areas:

- 2004 Meath, Causetown townland – excavation of a fulacht fiadh at Gorman substation 220 kV (licence ref. 04E0608 and 04E0826).
- 2004 Sligo, Ballysumaghan townland – three potential areas of archaeology revealed by monitoring and test excavation. Full excavation revealed two areas were natural and one area contained a small amount of charcoal in a bank feature at Srananagh substation 220 kV (licence ref. 04E0334 and 04E1254).
- 2002 Cork, Aughinida, Clashavoon – a fulacht fiadh was identified (01E1210) at a proposed ESB substation. Excavation of a 40m x 10.4m area took place; the site

appeared as an oval mound consisting of a circular pit and stake holes. No finds were revealed (licence ref. 02E1039).

- 2001 Waterford, Cullenagh townland – five potential sites were identified during monitoring (licence ref. 01E799). These areas were further investigated and a kiln and charcoal spread/group of pits were fully recorded and excavated (licence ref. 01E0859 and 01E0860).

3.10.4 Miscellaneous

This section records activity that was archaeologically monitored or investigated as a result of work associated with the ESB, ESBI, EirGrid and electricity projects in general. The works that have been carried out for these organisations are unspecified or for local purposes and so cannot be classified under the foregoing headings OHL, cabling or stations. Also within this section are works that have been undertaken for other purposes and have unearthed archaeological features in close proximity to transmission infrastructure.

In total twenty-two licences were issued as a result of associated works and nine of these areas revealed archaeology as a result of monitoring work taking place.

These are:

- Monitoring, excavation and survey of a post-medieval mill race, west of the constraint zone for Scribblestown Castle (DU014-074) in Dublin in advance of ESBI ground works (licence ref. 07E0756).
- Moore Abbey (KD021-001-003), Monasterevin, several burials and a collapsed stone wall were identified as a result of an excavation of a trench for an ESB cable. It was possible to reroute around the archaeological features (licence ref. 96E0024 ext.).
- Kilkenny City, a project encompassed the rerouting of services including ESB cables and involved the excavation of trenches at Abbey Street and Abbey Square in the medieval city. Nine test trenches yielded archaeology; seven structures and burial were revealed (licence ref. 00E0335). The pipework was rerouted to avoid damage to archaeological structures.
- Clare, Quin Friary, archaeology was recorded in an ESB service trench (licence ref. 01E0573).
- Laois, Athaboe Abbey, an ESB service trench revealed fragments of human and animal bone (licence ref. 99E0592).

- Limerick, Castle Lane, work was suspended when the excavation of an ESB service trench revealed human bone (licence ref. 98E0047).
- Offaly, Derryvilla, a quarried area around an ESB pylon exposed human bones (licence ref. 98E0315)
- Westmeath, Mullingar, the laying of Telecom cables in an ESB cable trench revealed skeletal remains previously disturbed and left in the trench (licence ref. 96E069).
- Offaly, Birr, Bridge St/ Mill Lane. Trial trenching in advance for the construction of ESB offices, urban post medieval material were revealed (licence ref. 1991:109).

Two excavations conducted by the National Museum of Ireland took place in the early 1970s at the bequest of the ESB.

- Excavation was necessitated by development plans of the ESB in 1975 in Wexford at St Vogues church and enclosure. A building (9.48m x 4.7m) within a large D-Shape enclosure was fully excavated, four phases of activity was identified.
- An examination of St Kevin's Road in Wicklow, Brockagh townland adjacent to Turlough Hill pumped storage scheme took place in 1972. Previous excavation work had taken place in 1968 by the National Museum of Ireland. The road was surveyed and recorded.

3.11 REVIEW OF LICENCED ARCHAEOLOGICAL REPORTS RESULTS

Analysis of available monitoring and test excavation licenced reports undertaken for transmission projects (overhead lines and infrastructure) over the last 40 years (**Table 3.9** and Appendix B) has revealed that the majority of sites identified due to construction related excavation are small scale in nature, for example features such as fulacht fiadh and burnt spreads, and which can be easily avoided.

On the other hand, underground cable projects have occasionally revealed larger sites and burial and skeletal remains. Even though large in scale the record of investigation at the construction sites of substations has not revealed large scale archaeological sites, although it has the potential to do so.

For the purposes of this study, documentation of onsite archaeological and cultural heritage work has been assisted by the licencing requirement in Ireland which carries a mandatory requirement to submit a report upon completion of the work.

However difficulties were experienced compiling information due to:

- A lack of a central, accessible archive
- A lack of understanding of the transmission process and terminology, and inconsistent reporting from licensed archaeologists undertaking licenced work on these projects.
- No available authoritative studies available on the effect of transmission lines on heritage assets.

It would significantly improve and appropriately manage cultural heritage work carried out in relation to transmission projects if:

- A managed and centralised archive is created of all archaeological and cultural heritage reports from the planning stages to on site/survey and post-excavation work with an accompanying database to query these results.
- The design criteria and project details of projects such as name, type, extent and nature of the development is provided to the heritage consultant and that these criteria are followed and included in all subsequent reports – this will assist in tracking all work undertaken for transmission projects.
- An illustrated booklet/leaflet is developed displaying different typical design scenarios and the phasing of a transmission project.

Table 3.9: Summary of Recorded Archaeological Investigations per County

County/Year	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1993	1991	1975	1972
Carlow																			
Cavan									1S				1OHL	1OHL					
Clare										1OHL /1M			1OHL						
Cork		1M				1OHL /1M	1OHL	2OHL /2M	1S/ 1U	1S/ 1U					1U				
Donegal							1S	1U		1OHL			1M			1OHL			
Dublin	1U	2S	2U	1U/ 1M		2OHL /1U	1U		1OHL	1U		1S							
Galway	1OHL	1U							3OHL			1U			1M				
Kerry									1M			1M	1U						
Kildare											1S				1M				
Kilkenny											1M								
Laois					1M							1M							
Leitrim							1S												
Limerick									1OHL				1M						
Longford		1OHL							1S										
Louth										1OHL		1S/ 1M							
Mayo	1OHL /1U	1OHL			1U				6OHL										
Meath							1S/ 1E		1M			1U/ 1M							
Monaghan																			

County/Year	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1993	1991	1975	1972
Offaly			1U						1S				1M				1M		
Roscommon					1U		1OHL		1OHL										
Sligo						1OHL	1S/ 1E		1U/ 1E										
Tipperary				1U			1S	1U	1OHL /1U	1OHL									
Waterford									1OHL	1S									
Westmeath										1S				1U	1M				
Wexford				1M														1E	
Wicklow													1OHL						1E

- OHL=Over Head Line, S=Stations, U=Underground cable, E=Excavation & M=Miscellaneous, indirect, works as a result of another scheme,

4 SITE SELECTION AND METHODOLOGY

4.1 SITE SELECTION

Site selection for archaeological, architectural heritage and cultural heritage evidence-based studies was established on a nationwide platform using the existing transmission system. The study also acknowledged the location of proposed future transmission projects as outlined in EirGrid's GRID25 Implementation Programme 2011-2016.

The case study areas and selection criteria represent:

- Diverse topography;
- Well documented archaeology and also 'blank' areas;
- Wide range of heritage asset types
- Good geographical spread
- Previous and current significant development and landscape change.

The site selection was developed to allow an integrated approach to field methodologies to take place on existing electricity transmission projects whilst also acknowledging planned development, as outlined in the GRID25 Implementation Programme 2011-2016. The regions and relevant counties as well as proposed works for those regions as detailed in the Implementation Programme and accompanying Strategic Environmental Assessment (SEA), and are listed in **Table 4.1**.

For the purpose of this evidence-based study, existing transmission projects in areas proposed for future works were targeted so similar landscapes could be assessed and assist in the benchmarking of cultural heritage effects for future projects. On a broad basis, the types of sensitive landscapes that have been, and potentially will be, affected are outlined in **Table 4.1**. The type and range of archaeological, architectural heritage and cultural heritage features typical in such landscapes are also listed.

The selected areas may contain one or many archaeological monuments, protected structures or a diverse range and combination of historic site types. The methodology for site selection included:

- The development of a sampling strategy designed to produce an unbiased sample
- The compilation of files on each of the sample cases regarding the transmission line infrastructure and the cultural heritage involved
- Site visits involving assessment by inspection, and photographic record.

Digital mapping of the existing transmission infrastructure was overlaid on aerial photography datasets, together with data from the Archaeological Survey of Ireland and relevant local authority databases, such as protected structures and features of an architectural heritage merit. This allowed a review of the proximity of existing known heritage assets to existing transmission infrastructure and provided an opportunity to further examine specific areas in greater detail.

As the information included in these data sets can vary from county to county, for example the range and extent of site types, it was acknowledged that this can introduce a bias in the recorded sample. Measures were taken to counteract this bias by ensuring there was a range of typical and non-typical site types from diverse environments within the sample.

The spread and regional diversity of sample sites was also confined to the existing transmission infrastructural network and projects under construction with a preference for recently commissioned transmission projects (1980's to the present) to ensure the availability of relevant planning data where necessary. Transmission projects including 400 kV, 220 kV and 110 kV lines and substations are all represented in the sample selection. For ease of identification the site selection was recorded by line name and townland.

Based on the list in **Table 4.1**, and in line with the above selection criteria, the existing transmission infrastructure and the digital map overlay, a sample of twenty seven potential case study sites suitable for archaeology, architectural heritage and cultural heritage evidence based assessment was devised. These sites, which are listed in **Table 4.2**, were visited and assessed in the field. This table provides an overview of the areas selected for the evidence based survey with information on townland names, topography, the location of the heritage asset and the line name.

This study is concerned with whether or not a monument or structure (i.e. a recorded monument - RMP site or a protected structure – RPS site) or National Monument, has been affected by an existing transmission project. All RMP sites as outlined in the National Monuments Acts 1930-2004 are considered to be of equal significance. Therefore the site selection is not based on a particular monument type but whether or not a monument has been effected by an existing transmission project and the effect that the power transmission project has had on the monument (regardless of site type).

A report on monument grading systems was commissioned by the Heritage Council (Sharma, Wait, and Darvill 2003). As detailed in that report, the significance of components of the architectural heritage in Ireland has, since 1990, been assessed according to their international, national, regional, local or other significance. Being largely above ground, the architectural heritage is clearly more amenable to grading than archaeological features.

Structures included in the RPS are of regional importance or greater and structures in the NIAH may be of a local to international significance. For the purpose of this project, built heritage structures were assessed from the point of view of whether they were affected by transmission projects regardless of their significance rating.

During the course of the study, the majority of this selection was reviewed by EirGrid to assess the suitability of the sample e.g. regarding access etc. This sample was then subject to field assessment, analysis and reporting.

In order to establish a full range of conditions that could arise as a result of the construction and existence of power projects in Ireland, a review of the nature, magnitude and significance of the effects that have already occurred were assessed during the field survey, and are described in Chapter 6. This range of conditions, when taken together, can be used to determine the parameters within which the benchmarking of the archaeological, architectural and cultural heritage effects can be deemed to be reliably predicted.

The study examined the effects of the construction and existence of a range of power transmission projects, including substations and a range of sizes of transmission lines ranging from 110 kV-400 kV and assessed:

- Typical Conditions
- Non-standard Conditions
- Worst Case Conditions

The study examined the effect on typical heritage assets or circumstances that are commonly encountered – such as recorded monuments, NIAH buildings and gardens, RPS and cultural heritage features and vernacular buildings. For example typical impacts can include:

- No direct impact on archaeology, architectural and cultural heritage.
- Electricity transmission projects that traverse a cultural heritage landscape.

The non-standard condition occurred due to the proximity of a cultural heritage asset as there is a potential to increase the effect on the cultural heritage asset, for example:

- Proximity to a heritage asset (indirect impact).
- Locating a power transmission project adjacent to a protected structure or building/structure considered to be of architectural heritage merit or a largely intact demesne landscape or monument.
- Direct impact on the immediate curtilage of a protected structure.
- Electricity transmission project that traverses a cultural heritage landscape of significance (local and regional).

The worst-case condition occurred when there is a severe adverse effect on a heritage asset due to the existence, construction or maintenance of a power project, for example:

- Direct impact on a heritage asset.
- Direct impact on a National Monument or heritage asset of national or international significance.
- Indirect impact on a National Monument or heritage asset of national or international significance (impact to the setting/ curtilage and/or amenity zone).
- Direct impact/ crossing a World Heritage or candidate World Heritage site.
- Electricity transmission project that traverses a cultural heritage landscape considered to be of national importance or as described by UNESCO (1972) of 'outstanding universal value'.

In all cases in the field survey the nature, magnitude and significance of the effects that have occurred were described (Chapter 5).

An initial condition assessment (expected conditions) is provided in **Table 4.2**. This is based on the selection criteria and type of sites and landscape involved. The Condition Type column in **Table 4.2** describes the expected condition (i.e. typical, non-standard and worst case) based on the known/recorded spread and distribution of archaeological sites, architectural structures, designed and cultural heritage landscapes.

The assessment at the desk-based stage of the process provides a generalised approach as a number of interrelated factors have to be considered in the field before an evidence based assessment can take place. The occurrence of a type of monument is site and location specific and very much depends on the prevailing environmental and landscape considerations. As the condition is a function of the results, the conditions outlined in this table are described as 'Expected Conditions'.

Following mitigation measures or field work expected conditions can vary from the actual conditions as shown in **Table 4.4**. This table is based upon detailed research and the results of the field survey and takes into account mitigation measures such as test excavation and monitoring that has occurred to describe the actual effect or outcome of a transmission project on a heritage asset.

Table 4.1: Potential Areas for Inclusion in the Evidence Based Study

Sector	Regions	Counties	Existing and proposed power infrastructure	Historic Landscape setting	Archaeology, Architectural Heritage, Cultural Heritage
Sector 1	The Border & West Regions	County Donegal and part of counties Leitrim, Sligo, Cavan, Monaghan and Louth	Upgrading existing and constructing new transmission infrastructure. Inter-Regional Reinforcement. Additional Interconnector.	Bog/uplands, wetland (lakes and rivers).	Previously undisturbed megalithic structures. Pre-famine Clachans and field systems.
Sector 1	West	Counties Galway, Mayo	New electricity transmission infrastructure North Mayo area and West Co Galway to Galway City and beyond. Upgrading 365km of existing infrastructure.	Bog landscapes, upland, lake, wetland and river habitats. Large scale forestry plantations to be considered.	Consideration of bog landscapes and the potential to reveal previously unknown Neolithic landscapes similar to Céide Fields. Pre-famine Clachans and field systems, children's burial grounds and ringforts.
Sector 2	The Midlands	Counties Offaly, Laois, Carlow and Kilkenny	New 110 kV between Thornsberry and Cushaling. Reinforcement of transmission infrastructure in the Mullingar area. Laois Substation (400/110 kV Laois area). Upgrade 250km of transmission network to facilitate renewable and conventional sources.	River Shannon, peatlands, grass lands and farmed landscapes.	Occurrence of milled peatlands with abundance of archaeological evidence dating from the Neolithic onwards, in the form of trackways, artefacts, settlement and ritual sites. High occurrence of organic material. Occurrence of early medieval monuments such as ringforts
Sector 2	South East	Counties Wexford, Waterford, part of Wicklow	Transmission Infrastructure reinforcement – to facilitate power flow planned wind generation. Strengthening of 220 kV links to both Dublin and Cork. Supplies to major cities and towns. Upgrading of 480km of existing 110 kV and 220 kV circuits.	Upland areas, river valleys and coastal areas.	High density of upstanding stone castles and Anglo-Norman activity. Large demesne landscapes.

Sector	Regions	Counties	Existing and proposed power infrastructure	Historic Landscape setting	Archaeology, Architectural Heritage, Cultural Heritage
Sector 2	Greater Dublin Region and Mid East	County Dublin, Kildare, Meath, Carlow, Wicklow part of East Offaly	<p>Increased capacity at Carrickmines, Finglas and Inchicore in Dublin and Dunshaughlin, Co Meath and Dunstown Co Kildare stations. Need identified for 2 new 220/110 kV to feed stations in north (Balgriffin) and west (Finnstown) Dublin.</p> <p>East-west interconnector.</p> <p>New overhead lines or underground cables as part of the 400 kV in the great Dublin Area. Upgrade of 515km of existing network.</p>	<p>High level of urbanisation, bog areas in east Offaly and Kildare, the Curragh, upland peat and forestry areas in Wicklow, coastline and river valleys such as the Boyne. Rural landscape also present.</p>	<p>World Heritage Site – Brú na Bóinne, archaeological and historic landscape of the Curragh. Sites of national importance such as Tara, Fourknocks. Carrickmines Castle.</p> <p>18th and 19th century demesne landscapes and historic towns such as Kells, Slane.</p> <p>High density of artefact assemblages such as flint scatters.</p>
Sector 3	Mid West	Clare, West Limerick, South east Galway	<p>Reinforcement of transmission system between Moneypoint and Tarbert, including provision of new substation.</p> <p>Strengthening the transmission capacity across the Shannon Estuary.</p> <p>Upgraded networks supplying urban centres of Ennis and Limerick.</p> <p>Up-rating 260km of existing networks.</p>	<p>The Burren, Galway Bay, Hills of Clare, Shannon Estuary, Lower Shannon.</p>	<p>Large scale prehistoric, monumental sites such as promontory forts.</p> <p>Small scale intertidal sites along the Shannon Estuary.</p> <p>Abundance of more recent large managed estates and houses and earthen monuments.</p>
Sector 3	South West	Counties Cork and Kerry, Limerick, Tipperary	<p>Need to connect key transmission hubs at Moneypoint and Cork.</p> <p>Upgrading of 165km of transmission network.</p> <p>Renewable and conventional sources – strengthen capacity.</p>	<p>River valleys, uplands, bog and coastal areas.</p>	<p>Bronze Age ceremonial sites such as stone circles, standing stones and alignments. Fulacht fiadh, battle sites. Intertidal archaeological remains. Stone forts, rock art sites.</p> <p>Consideration of bog landscapes and the potential to reveal previously unknown Neolithic/Bronze Age landscapes, coastal cave sites.</p>

Table 4.2: Archaeological, Architectural Heritage and Cultural Heritage Site Selection for the Evidence-Based Study

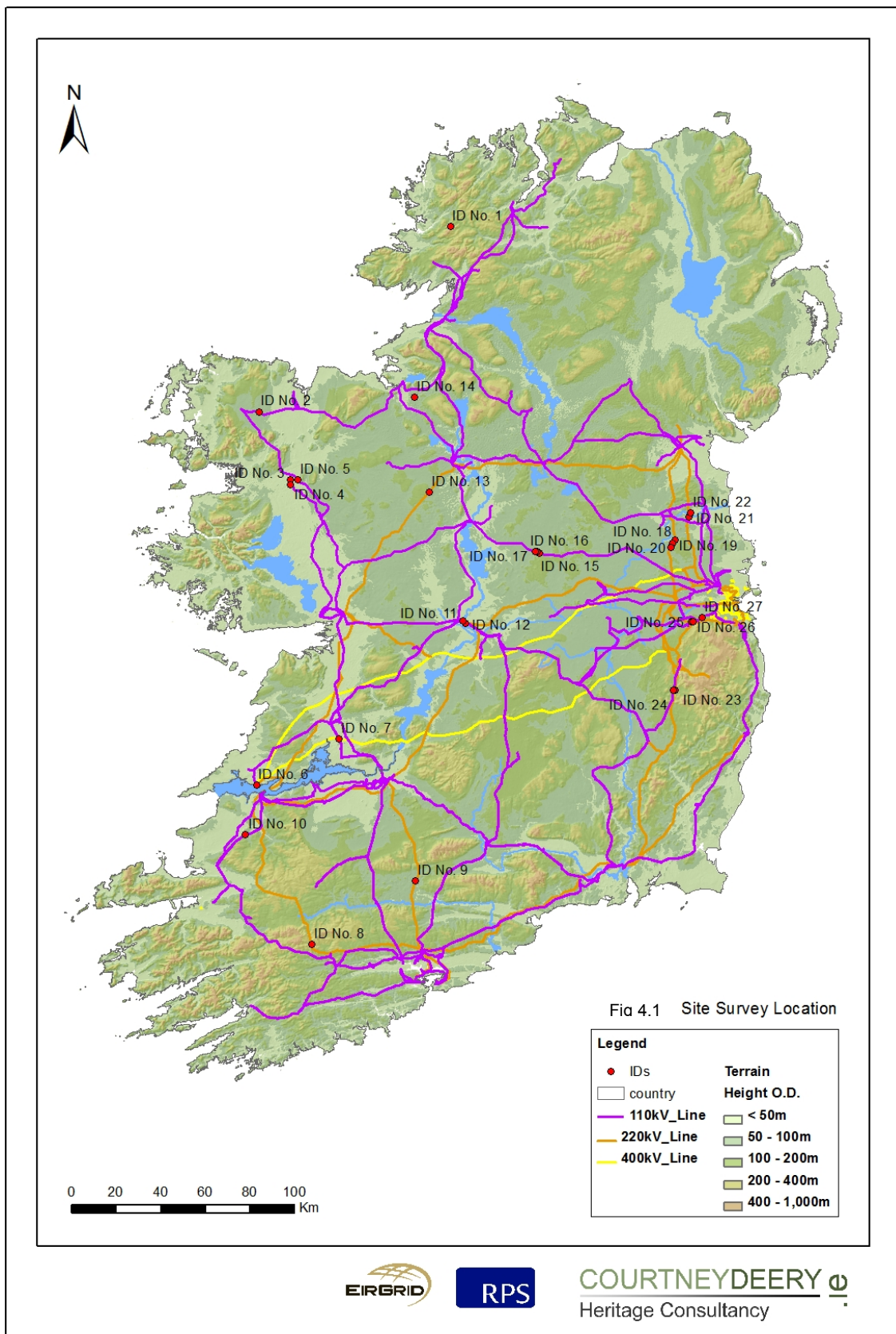
ID No.	County	Area	Project	National Grid Reference (NGR)	Land cover	Potential to encounter archaeology, architectural heritage and cultural heritage site types	Expected Condition
1	Donegal	Meenascrone and Clogher East townlands - Donegal 110 kV Project	Binbane-Letterkenny	NGR no available. Poleset 218, angle towers 215 and 180	Bog and rough pasture	Pre-bog archaeology, cultural heritage features and vernacular architecture. Railway embankment, Meenascrone and ruined cottage, Clogher East.	No recorded effect
2	Mayo	Eskeragh townland	110 kV Bellacorick - Moy	NGR 104901, 318914 ITM 504873, 818923	Blanket Bog	Pre-bog archaeology, stray finds. MA028-003002; Standing stone, MA028-003004; stone row, MA028-003006; fulacht fiadh, stone circle and MA028-003003; court tomb MA028-003001; field boundary.	Typical
3	Mayo	Elmhall townland	110 KV Castlebar-Cloon	NGR 12000 28536	Pasture	Walled garden associated with an 18 th /19 th century house MA090-146	Non-standard
4	Mayo	Rinnshulty/ Manualla townlands	110 kV Castlebar - Dalton	NGR 122594, 288453 ITM 522562, 788469	Grassland, site located on a ridge close to a lake	MA079-061001/002 – church and children's burial ground, MA079060001/002 – castle unclassified and earthwork, MA079-062 – ritual site. Vernacular house on road side and iron barrel vaulted barn	Typical
5	Mayo	Roslahan Upper townland	110 kV Castlebar-Cloon	NGR 120398, 285186 ITM 520366, 785202	Pasture land used for grazing cattle	MA090-008 – Ringfort located on a raised hillock commanding a dominant position in the landscape	Typical

ID No.	County	Area	Project	National Grid Reference (NGR)	Land cover	Potential to encounter archaeology, architectural heritage and cultural heritage site types	Expected Condition
6	Clare	Carrowdotia North townland	400 kV Dunstown - Moneypoint & 220 kV Moneypoint - Prospect	NGR 103694, 152330 ITM 503665, 652375 NGR 103866, 152793 ITM 503837, 652838 NGR 105280, 153489 ITM 505251, 653534	Estuarine/lowlying pasture	Ringforts (CL067-040) and enclosures, Historic demesne landscapes.	Worst case/ non standard
7	Clare	Ballykilty townland north of Moughaun	400 kV Dunstown-Moneypoint	NGR 140734, 172655 ITM 540697, 672695	Farmed pasture land, south of railway line	Ceremonial enclosure (CL042-020)	Non-standard
8	Cork	Carrigonirtane	220 kV Clashavoon - Tarbert	NGR 128563, 80681 ITM 528529, 580741	Rough pasture and scrub upland	CO059-011 – stone circle, CO059-012 - standing stone	Non standard
9	Cork	Ballydeloughy townland	220 kV Killonan - Knockraha	NGR 175359, 109140 ITM 575315, 609194	Pasture fields and road and dwellings	CO019-087 – Castle unclassified, CO019-152 – ritual site, vernacular structures located further north along the road and church and graveyard (CO019-085001/002)	Non-standard
10	Kerry	Beheens West, Ballyduhig, Furhane townlands	110 kV Clahane - Trien	NGR 99104, 129746 ITM 499076, 629796 NGR 98985, 129724 ITM 498957, 629774 NGR 98850, 129630 ITM 498822, 629680	Farmed pasture land, east of the N69, south of Listowel	Fulacht fiadh complex in Furhane (KE016-032-031-030), other sites in the vicinity: burial ground (KE016-029), Beheens West, holy well (KE016-028), Beheens West, Ringfort (KE016-033), Furhane	Typical

ID No.	County	Area	Project	National Grid Reference (NGR)	Land cover	Potential to encounter archaeology, architectural heritage and cultural heritage site types	Expected Condition
11	Offaly	Cloniffeen	220 kV Killonan – Shannonbridge 110 kV Cahir – Shannonbridge 220 kV Maynooth - Shannonbridge	NGR 197799, 224317	Lowlying farmed landscape	Church and CBG (OF013-007001/002)	Non-standard
12	Offaly/ Roscommon	Shannonbridge, Cloniffeen and Raghra townlands	220 kV Shannonbridge station. 220 kV Killonan to Shanonbridge	NGR 197799, 224317 ITM 597750, 724346 NGR 196802, 225350 ITM 596753, 725379 NGR 196650, 225448 ITM 596601, 725477	River crossing and grassland	Industrial archaeology, river crossing, vernacular architecture. Ford (OF013-037002 and RO056-018002), Weir (OF013-037003 and RO 036-018003), Castle (OF 013-010), Bridge (OF013-037001), Bastioned fort (RO056-016)	Non standard
13	Roscommon	Carrowtoosan, Carrowgobbadagh, Kilnahooan and Tullintuppeen townlands	220 kV Cashla - Flagford	NGR 180972, 282510 ITM 580927, 782527	Agricultural grass land. Archaeological landscape of Rathcroghan (Royal site of Connaught and on the list of potential nominees for World Heritage status), proximity to Tulsk.	RO022-054064 – ringfort, RO022-057058 – field system, RO022-057062 – enclosure, RO022-057057 – ringfort, RO022-057059 – pitfield, RO022-057060 – Road/trackway, RO022-056048 - ringfort	Worst case
14	Sligo	Ballysumaghan townland	220 kV Flagford - Srananagh. Srananagh Station	NGR 174560, 325526 NGR 174753, 325408 ITM 574710, 825415 NGR 174708, 324957 ITM 574665, 824965 NGR 175086, 325119 ITM 575043, 825127	Rough pasture land, boggy in places and used for plantation forestry.	Castle Neymoe (NIAH 32402706); country house (in ruin). Cursing stone (SL027-029001), enclosure (SL027-029002), ringfort (SL027-045), enclosure (SL027-046) and enclosure (SL027-048)	Non-standard

ID No.	County	Area	Project	National Grid Reference (NGR)	Land cover	Potential to encounter archaeology, architectural heritage and cultural heritage site types	Expected Condition
15,16, 17	Westmeath	Kilpatrick and Irishtown townlands (Rathconrath By)	110 kV Lanesboro - Mullingar	NGR 233070, 254864 ITM 633014, 754886 NGR 230914, 255656 ITM 630858, 755678 NGR 228934, 256223 ITM 628879, 756245	Pasture, bog and forested lands.	Earthwork (WM018-064); NGR 233482, 255030, Ringfort (WM018-063); NGR 233273, 255133, Earthwork (WM018-057); NGR 233070, 254864, Ringfort (WM017-022); NGR 228934,256223 (Irishtown), Ringfort (WM018-058); NGR 232788,254604	Typical
18,19,20	Meath	Castletown Tara, Ringlestown townlands located west of Tara and south of Blundlestown Interchange	220 kV Gorman - Maynooth	NGR 291535, 261512 ITM 691466, 761532 NGR 290780, 259950 ITM 690711, 759971 NGR 290153, 259396 ITM 690084, 759417 NGR 289974, 258046 ITM 689905, 758067	Farmed landscape. Archaeological landscape of Tara (royal site on the list of potential nominees for World Heritage status),	Ringfort (Castletown Tara ME031-015), Hillfort (Ringlestown ME037-005), Linear earthwork (Castletown Tara ME031-040).	Worst case
21 & 22	Meath	Rosnaree, Crewbane townlands. 220 kV crossing of the River Boyne 2km extent to be examined	220 kV Louth – Woodland	NGR 298097, 271908 ITM 698027, 771926 NGR 298595, 273456 ITM 698525, 773474	Farmed landscape - Improved pasture and grassland. Proximity to buffer zone of World Heritage Site	World Heritage Site – Brú na Bóinne, Crossing of the Boyne River and Battle of the Boyne. Ringfort (ME026-004), Enclosure (ME019-101) Flint and artefact scatters. Demesne landscapes.	Worst case/ non-standard
23 & 24	Wicklow	Castleruddery Lower townland	220 kV Kellis - Maynooth	NGR 290749, 194307 NGR 290761, 194338 ITM 690692, 694373 NGR 291074, 194399 ITM 691005, 694434	Quarry and farmed landscape with ribbon development.	Castleruddery House (NIAH 16402115) and castle (WI021-025). 110kV line – enclosure (WI021-026). 220 kV line – stone circle	Non-standard

ID No.	County	Area	Project	National Grid Reference (NGR)	Land cover	Potential to encounter archaeology, architectural heritage and cultural heritage site types	Expected Condition
				NGR 291579, 194431 ITM 691510, 694466		(WI021-032), designed landscape features (WI021-030)	
25 & 26	South County Dublin	South of M7, Newtown Lower townland	220 kV Carrickmines - Maynooth	NGR 299263, 224966 NGR 299866, 224986 ITM 699795, 725014	Pasture fields and golf-course.	Barrow (DU021-039) NGR 299866, 224986, Gate Lodge (NIAH 11217002); Steelstown, Walled garden and outbuildings (NIAH 11217006); Johnstown (Ne.By)	Typical
27	Dublin	Saggart townland	110 kV Citywest - Killeel	NGR 303827, 226784 ITM 703755, 726812	Urban – rural/urban fringe and golf course.	Royal Manor of Saggart (DU021-034) and protected structure Saggart House	Non-standard



4.2 FIELD SURVEY

The field survey was concerned primarily with a visual inspection of the actual impacts on archaeology, architectural heritage and cultural heritage/landscapes from existing transmission infrastructure. An inventory of archaeological monuments, architectural heritage (protected structures) and cultural heritage sites in proximity to the electricity transmission projects is presented in Appendix C, accompanied by relevant locational mapping, historic mapping and photographs.

Site visits took place once the relevant research and planning history of the site/area of the selected line had been compiled and reviewed. This allowed the inspector the opportunity to assess whether or not planning conditions had been adhered to and to establish if the mitigation measures implemented were effective. It also established if previous archaeological assessments or excavation were carried out, if newly revealed sub-surface archaeological sites were discovered or if concerns voiced during the planning process were justified or warranted retrospectively.

Of great assistance to the identification of architectural heritage assets in recent years is the development of the Record of Protected Structures (RPS), NIAH for built heritage and the NIAH Garden Survey. However these are on-going surveys and in the case of the Garden Survey as yet only a paper survey. Inspection in the field afforded the opportunity to note changes in the appearance of built heritage features and other developments in the landscape. It also provided information on associated remains or on previously unrecorded features. Recording and survey, sometimes for the first time, can take place on structures especially vernacular structures which are particular to a local area.

Field survey comprised the following:

- a visual inspection of the actual impacts on archaeology, architectural heritage and cultural heritage/landscapes from existing transmission infrastructure
- recording sheets to insure a consistent and comprehensive survey
- an inventory, photographs and relevant historic mapping of sites in proximity to the transmission projects

and it:

- established the effectiveness of mitigation measures implemented, whether previous archaeological assessments or excavation were carried out, if newly revealed sub-surface archaeological sites were discovered or if concerns voiced during the planning process were justified or warranted retrospectively
- addressed any inadvertent damage that may have occurred since the establishment of the OHL from maintenance, vehicle access etc.

4.2.1 Field Survey Sheet

To facilitate the consistent, objective and thorough survey of the selected sites, a comprehensive field survey sheet was developed. This sheet includes a number of descriptive and subjective fields to suit the range of sites and the diversity of landscapes and construction techniques (Appendix D).

4.3 ITINERARY

The site visits were undertaken in four blocks. The first inspection was a test run, primarily designed to assess the effectiveness of the approach taken. The remaining inspections were undertaken in such a way as to allow meetings where necessary with landowners. On average, one to two cases were covered per day and a total of twenty-seven areas were visited. These cases involved:

- 55 no. archaeological monuments (RMP sites, including 5 no. archaeological complexes, 2 no. National Monuments and 1 no. preservation order);
- 10 no. previously unrecorded architectural/cultural heritage features/areas,
- 9 no. structures recorded in the NIAH building survey,
- 4 no. recorded historic gardens and designed landscapes (NIAH Garden Survey)
- 10 no. structures recorded in the RPS,
- 3 no. cultural heritage landscapes (1 no. UNESCO World Heritage site and 2 no. documented cultural heritage landscape sites which have been placed on the Tentative List for nomination to the UNESCO World Heritage List)⁵⁴

Table 4.3: Itinerary

Date	Counties Visited
February 2012	Dublin
March 2012	Meath, Westmeath, Kildare, Dublin, Wicklow, Offaly
April 2012	Clare, Cork, Kerry, Roscommon, Mayo
May 2012	Sligo, Mayo
August 2012	Donegal

⁵⁴ These categories are not mutually exclusive, and some features may occur in one or more categories

4.4 ON-SITE PROCEDURE

Before entering lands, contact was made with the landowner or the person responsible for the lands where possible. Project specific ID cards and an introductory letter from EirGrid were carried at all times. All work was carried out according to EirGrid's *Code of Practice in Relation to Access to Land and/or Premises*⁵⁵ and all necessary health and safety inductions took place in advance of field work.

Once on site, the cultural heritage features of each area were located by using mapping showing the features and the transmission OHL or station. The monuments, buildings/demesnes and their immediate environment were then inspected, photographed, described and sketched. Particular attention was paid to the type and extent of the impact of the transmission project on the cultural heritage feature. Assistance was offered by EirGrid and ESBI representatives whenever they were in attendance and all landowners were accommodating.

4.5 REVISION OF THE INITIAL SAMPLE AND FIELD SURVEY RESULTS

The final evidence-based samples presented below are the result of several revisions. The original list underwent several amendments in close consultation with EirGrid in order to identify twenty seven suitable areas. In total fourteen counties were visited as part of the survey and the final selection of sites represent twelve separate counties. The original site selection was reduced at the field work stage; this was due to access issues or where an area proved unsuitable for site evaluation e.g. where the distance between the monument/architectural heritage site and the OHL structure was too great for meaningful assessment given the topography.

The final sample and field survey results are shown in **Table 4.4** below. This table details the transmission project, the type of transmission infrastructure and the type/extent of impact in relation to archaeology, architectural heritage and cultural heritage and approximate distances. The table also describes the site type impacted; these include archaeological sites from the Record of Monument and Places (RMP), archaeological complexes, National Monuments, monuments with a Preservation Order, architectural and cultural heritage features/areas, structures featured in the National Inventory of Architectural Heritage (NIAH) and the Record of Protected Structures (RPS), tentative and UNESCO World Heritage Sites, cultural heritage landscapes and areas surveyed as part of the historic garden and designed landscapes survey (NIAH).

⁵⁵ EirGrid (2007)

As a result of the field survey the actual conditions are listed, and can be compared with **Table 4.2** which records the expected conditions. The planning history of each line is also summarised.

The site inventory (Appendix C) includes full site reports, which details the findings of the site visits, and, incorporates Ordnance Survey maps, RMP constraint maps, and historical maps, mapping of transmission projects and selected photographs.

Table 4.4: The Field Survey Sample Results for Archaeological, Architectural Heritage and Cultural Heritage Evidence-Based Study

ID No.	County	Project	Infrastructure	Site type	Distance	Impact	Actual Condition	Planning History
1	Donegal	Donegal 110 kV Project Binbane-Letterkenny	Pole- set and steel angle towers	Pre-bog archaeology, cultural heritage features and vernacular architecture. Railway embankment (Meenasrone) and ruined cottage (Clogher East).	Angle tower (215) adjacent to railway embankment. Ruined cottage adjacent to stone access road	No impact to date	Typical	Presently under construction, monitored by a licenced archaeologist. Donegal 110 kV Reinforcement Project EIS (November 2008).
2	Mayo	110 kV Bellacorick - Moy	Poleset	Pre-bog archaeological complex MA028-003002; Standing stone, MA028-003004; stone row, MA028-003006; fulacht fiadh, stone circle and MA028-003003; court tomb MA028-003001; field boundary.	This complex ranges from 130m to 219m south of the poleset	Slight	Typical	Originally part of Bellacorrick-Sligo line which was constructed in 1969, refurbishment works took place in 2002.
3	Mayo	110 kV Castlebar-Cloon	Poleset	MA090-146 – 18 th -19 th century house & walled garden of architectural and cultural heritage interest	Poleset located immediately inside the walled garden	Significant on the setting of the walled garden	Non-standard	EIS, testing in advance of construction (Moore Group 2002, 2003).
4	Mayo	110 kV Castlebar - Dalton	Poleset	MA079-061001/002 – church and children’s burial ground, MA079-060001/002 – castle unclassified and earthwork, MA079-062 – ritual site. Archaeological Complex. Vernacular house on road side, corrugated iron barrel vaulted barn & stone bridge.	The church is spanned by OHL with polesets located at a distance to the north and south of the complex	Slight None	Typical Typical	Original line was constructed in 1961/62.
5	Mayo	110 kV Castlebar-Cloon	Poleset; steel angle tower	MA090-008 – Ringfort located on a raised hillock commanding a dominant position in the landscape.	25m from poleset, 30m from angle tower	Significant impact on the setting of the monument	Non-standard	EIS, testing in advance of construction (Moore Group 2002, 2003).

ID No.	County	Project	Infrastructure	Site type	Distance	Impact	Actual Condition	Planning History
6	Clare	400 kV Dunstown – Moneypoint 220 kV Moneypoint – Prospect Moneypoint Station	Towers and Moneypoint station	CL067-040; Ringfort Carrowdotia House & demesne	220 kV is 32m southwest of ringfort 400 kV is 12m southeast of ringfort No longer present	Significant Significant	Worst Case Worst Case	400 kV Dunstown-Moneypoint was constructed in 1986. 220 kV Moneypoint-Prospect was constructed in 1965/66, uprates in planning at present. Former estate lands are now zoned for industrial use and have been forested.
7	Clare	400 kV Dunstown – Moneypoint	Tower	CL042-020; Ceremonial enclosure	Towers are located 216m west of the monument and 162m east	No impact	Typical	Constructed in 1986. No record.
8	Cork	220 kV Clashavoon - Tarbert	Tower	CO059-011; Stone circle CO059-012; Standing stone	Stone circle located 7m north of the tower. Standing stone is 90m southwest of the tower	Significant Moderate	Worst Case Non standard	Clashavoon Station and loop were constructed in 2003, it was originally part of Knockraha-Tarbert (1978).
9	Cork	220 kV Killonan-Knockraha	Tower	CO019-087; Castle unclassified Cultural heritage sites CO019-152; holy well, windmill CO019-086 (NIAH 20901917, RPS 01148) vernacular house	Castle 50m northwest of tower. Holy well is 9m southeast of tower. Windmill is 72m from tower. House is 153m northwest from tower	Moderate Moderate No impact	Non-standard Non-standard Typical	Constructed in 1965/66, uprates in planning at present.
10	Kerry	110 kV Clahane -Trien	Poleset	KE016-032; fulacht fia (no visible trace) KE016-031; fulacht fia (no visible trace)	Polesets are located in the immediate environs of the	Undetermined as area was previously disturbed	Typical Typical	Unauthorised land improvements resulted in the removal of the above ground definition of the

ID No.	County	Project	Infrastructure	Site type	Distance	Impact	Actual Condition	Planning History
					fulacht fia sites			monuments.
11	Offaly	220 kV Killonan – Shannonbridge 110 kV Cahir – Shannonbridge 220 kV Maynooth - Shannonbridge	Towers and poleset	OF013-007001/002; Church, Children’s burial ground (CBG)	Tower 140m northeast of monument. Poleset 58m southwest of monument located along field boundary	Moderate impact on setting due to noise from associated BnM works, disturbs the tranquillity of the site	Non standard	220 kV Killonan & Maynooth – Shannonbridge commissioned in 1965/66, uprates in planning at present.
12	Offaly/ Roscommon	110 kV Lanesboro – Shannonbridge 110 kV Cashla – Shannonbridge 110 kV Ennis – Shannonbridge Shannonbridge station	Polesets and Shannonbridge station	OF013-010; Castle unclassified, OF013-037003; Weir, RO056-018001; Bridge, RO056-016; Bastioned fort (PO). Archaeological complex NIAH 1480510 RPS OF19-08- Swivel bridge, NIAH 31956004- RPS OF19-09, RO05600027- Shannonbridge, NIAH 3195600 RPS RO05600028/295 -tete-de-pont/fortifications, Architectural heritage complex	No direct impact	Significant Impact to the setting of structure/ features when viewed from Roscommon side of the River Shannon. Views are compromised by OHL and Shannonbridge Station	Non standard	Archaeological investigation has taken place at Shannonbridge station and no features were revealed (ADS Ltd 02E0451, Appendix 1). Shannonbridge station was commissioned in 1960. Cashla station and loop was constructed in 1980; originally part of Galway-Shannonbridge which was constructed in 1969. Refurbishment works conducted in 2003.
13	Roscommon	220 kV Cashla - Flagford	Towers	Royal Site Archaeological Complex. RO022-056048; ringfort, RO022-057-057-063; various monuments, RO022-054064; ringfort, RO022-057052; road (part of National Monument complex 473). Candidate UNESCO World Heritage Site	Towers and OHL pass through the archaeological landscape and tower No. 197 is located 43m north of the National Monument, RO022-057052	Significant (direct and indirect)	Worst Case	The OHL was constructed in 1980-82 and there are no archaeological reports recorded in the archive.
14	Sligo	220 kV Flagford – Srananagh 110 kV	Towers, polesets and station	SL027-029001; cursing stone, SL027-029002; enclosure, SL027-045;	Nearest monument (SL027-029002) is	Slight	Typical	EIS report. Monitoring and testing and excavation took place in

ID No.	County	Project	Infrastructure	Site type	Distance	Impact	Actual Condition	Planning History
		Srananagh – Sligo 110 kV Cathleen Falls – Srananagh 1 & 2 Srananagh substation		ringfort, SL027-046; enclosure, SL027-048; enclosure NIAH 32402706 – Castle Neymoe SL-25-G-745255 – Garden Survey (NIAH)	located 50m west of station. Located within the attendant grounds of Castle Neymoe.	Slight	Typical	2004. Topography lends itself to the appropriate positioning of the station and OHL.
15	Westmeath	110 kV Lanesboro - Mullingar	Poleset	WM018-030; Ringfort	Poleset is located 1m south of the outer western bank	Significant (direct)	Worst Case	Mullingar station and loop constructed in 1971; originally part of Finglas-Lanesboro which was constructed in 1967, refurbishment works were conducted in 2003. The double wooden poleset was noted during a survey of the site conducted in 1970.
16	Westmeath	110 kV Lanesboro - Mullingar	Poleset	WM017-024; Ringfort Irishtown Demesne	The poleset is located 60m south of the monument in the field boundary OHL span the former demesne lands	Slight None	Typical Typical	Mullingar station and loop constructed in 1971; originally part of Finglas-Lanesboro which was constructed in 1967, refurbishment works were conducted in 2003.
17	Westmeath	110 kV Lanesboro - Mullingar	Poleset	WM017-022; Ringfort	Poleset 50m north of monument, located on a boundary	None	Typical	Mullingar station and loop constructed in 1971; originally part of Finglas-Lanesboro which was constructed in 1967, refurbishment works were conducted in 2003. Landscape altered due to forestry plantation.
18	Meath	220 kV Gorman	Tower	ME031-015; Ringfort	Tower is located	Significant	Non	The transmission line

ID No.	County	Project	Infrastructure	Site type	Distance	Impact	Actual Condition	Planning History
		- Maynooth		(Rathmiles associated with the cultural heritage landscape of Tara). Located 2km north north-west from the Hill of Tara	at a field boundary adjacent to the northeast of the monument		standard/ worst case	was constructed in 1970-1971 in advance of a full understanding of the extent of the Tara cultural heritage landscape being developed.
19	Meath	220 kV Gorman - Maynooth	Tower	ME037-005; Hillfort (Ringlestown associated with the cultural heritage landscape of Tara). Located 2.5km from the Hill of Tara	Towers are located 113m to the west of hillfort and 182m north	Moderate	Non standard/ worst case	The transmission line was constructed in 1970-1971 in advance of a full understanding of the extent of the Tara cultural heritage landscape being developed.
20	Meath	220 kV Gorman - Maynooth	Tower	ME031-040; Linear earthwork (Riverstown associated with the cultural heritage landscape of Tara). Located 1km west of the Hill of Tara	Tower located 20m west of a non-visible section of the linear earthwork	Significant	Non standard/ worst case	The transmission line was constructed in 1970-1971 in advance of a full understanding of the extent of the Tara cultural heritage landscape being developed.
21	Meath	220 kV Louth - Woodland	Tower	ME026-004; Ringfort Vernacular roadside building – thatched cottage	The tower is c.158m southwest of the monument Building located 92m uphill and west from the tower	Sight Slight	Typical Typical	The transmission line was constructed in 1970-1971.
22	Meath	220 kV Louth - Woodland	Tower	ME019-081; Souterrain, ME019-090; Ringfort, ME019-091; Field system, ME019-101; Enclosure Transmission project is located on the western alignment of the buffer zone of Brú na Boinne UNESCO	Towers located 460m west of monuments and 1.5km from the Knowth passage tomb complex. On the boundary.	Slight/None Significant Slight/None	Typical Worst case Typical	The transmission line was constructed in 1970-1971 in advance of the area receiving the UNESCO World Heritage Status.

ID No.	County	Project	Infrastructure	Site type	Distance	Impact	Actual Condition	Planning History
				World Heritage Site Crewbane House & gardens	Towers located 460m west of Crewbane House			
23	Wicklow	220 kV Kellis - Maynooth	Tower	WI021-032; Stone Circle (National Monument), WI021-03001/002; Designed landscape features	Tower located on lower ground to the west (168m) of the monument Tower located 62m northwest of the closest corner of the designed landscape feature. Tower located in field boundary	Slight Slight/None	Non standard Typical	Constructed in 1973/74, uprates in planning at present.
24	Wicklow	110 kV Pollaphuca - Stratford	Tower	WI021-026; Enclosure, WI021-025; castle unclassified 16402115 (NIAH) Gates, railings, walls WI-55-S-907943 Castleruddery House	Towers are located 80m northwest and 85m southwest from the enclosure at the corners of the field	Slight/None	Typical	110 kV Stratford station is known as a tie in station and was constructed 2001/2002. It is a distribution station and is not considered as part of this study.
25	Dublin	220 kV Carrickmines – Maynooth	Tower	11217002 (NIAH) Gate Lodge DU-50-N-995238 Johnstown House (Garden Survey NIAH)	Located in the corner of the field immediately north of the laneway and Lodge House Passes through the outer demesne lands	Moderate (setting of the lodge) Slight	Non standard Non standard	OHL commissioned in 1971/72.
26	Dublin	220 kV Carrickmines - Maynooth	Tower	DU021-039; Ring barrow	0m	Significant (direct)	Worst Case	OHL commissioned in 1971/72. The site was surveyed for archaeological purposes.
27	Dublin	110 kV Citywest - Killeel	Towers	Royal Manor of Saggart (DU021-034) and NIAH	Two towers are located 15m north	Slight	Typical	Strung but not energised. Golf course

ID No.	County	Project	Infrastructure	Site type	Distance	Impact	Actual Condition	Planning History
				11213034; RPS 309 cemetery/graveyard, NIAH 11213041; RPS 328 Catholic Church DU-50-O-041272 Saggart House (Garden Survey NIAH)	of the cemetery/graveyard The towers are placed in former demesne lands	None	Typical	now occupies the demesne lands. Monitoring and test excavation (Licence Ref. 99E0229; 05E1244 and 09E0222) in advance of the towers, no archaeological findings.

5 SURVEY RESULTS

The survey results assess the potential for heritage impacts to occur on transmission projects. The report also assesses the appropriateness of mitigation measures as suggested as part of the Strategic Environmental Assessment⁵⁶ in relation to the findings of the evidence based studies. These are:

- Where the proposed route is in close proximity to archaeological sites the working area shall be kept to a minimum
- Preconstruction work shall be carried out in those unrecorded areas identified as having archaeological potential
- There will be full implementation of an archaeological plan including preconstruction works, watching briefs and excavation
- Where previously unrecorded finds are uncovered during construction, adequate temporary protection, archaeological investigation and recording will be carried out before construction works in these areas are continued.

These scenarios are based on good practice and are in keeping with the requirements of the Minister and the National Monuments Service. It is widely accepted, and confirmed by the findings of this study, that a large number of potential effects on archaeological monuments and historic landscapes can be avoided through careful routing and station site selection and the implementation of the EirGrid and Archaeology Code of Practice (2009).

The survey is a qualitative assessment and no statistical analysis has been conducted as the sample is not a numerically representative one.

5.1 GROUPING OF THE SITE REPORTS

A written report on each site was undertaken and compiled in a site inventory which accompanies this report (Appendix C). The visits highlighted the different issues relating to archaeology, architecture and cultural heritage in proximity to transmission projects. The cultural heritage of approximately one-third of the areas visited had been managed perfectly and the archaeological and architectural features were found to be under no threat whatsoever. Most of the remaining two-thirds had moderate to minor issues that did not place the archaeological remains under any immediate or severe threat but did

⁵⁶ The Environmental Report for the Grid25 Implementation Programme 2011-2016, Strategic Environmental Assessment (2012). Section 9.9.4 EMM8D Cultural Heritage pg. 138

impact the setting of the monument to a greater or lesser degree. However, in a few cases some transmission projects had significant issues and the archaeology was found to be vulnerable, damaged or even partially destroyed. There was little significant impact to architectural heritage features among the survey sample and the issues of setting and the need for field survey are discussed in the findings.

The results of the evidence based research are discussed below according to the type of transmission infrastructure and in some cases a combination of different transmission infrastructure types where the cumulative effect is considered. These summaries should be read in association with the full reports contained in the Site Visit Inventory (Appendix C):

- OHL, 400 kV, 220 kV and/or 110 kV
- Substations
- Cumulative impact

Each section is concluded with a summary table of the field results on each type of infrastructure or a combination of infrastructure types in the case of the cumulative impact. This table describes the archaeological, architectural heritage and cultural heritage impacts experienced in the field in that particular area.

5.1.1 Heritage Asset Conditions and Impacts

The impacts recorded in the field are based on the 27 areas visited and are defined as:

The **typical condition** examined the effect on typical heritage assets or circumstances that are commonly encountered – such as recorded monuments, NIAH buildings and gardens, RPS and cultural heritage features and vernacular buildings. The practice of placing a steel lattice tower or poleset at a field boundary or corner of a field boundary was observed in the field. This typically occurred at a remove from a cultural heritage asset and ensured in the majority of cases that the transmission project was at a remove and well screened from the recorded feature. However; when there was a heritage asset adjacent to the field boundary this had an adverse effect and increased the impact.

The **typical impact** for architectural heritage assets is avoidance by EirGrid transmission projects. Field work is essential in defining the intactness of demesnes and estates and thereby determining the level and extent of impact.

The **non-standard condition** occurred due to the proximity of a cultural heritage asset as there is a potential to increase the effect on the cultural heritage asset. The **non-standard impact** mostly related to indirect visual impacts on monuments and interference with the setting of a monument.

Wirescape and the location of towers that detract from views and the setting/curtilage of a protected structure or feature of cultural or architectural heritage merit are also considered a **non-standard impact**.

The **worst-case condition** occurred when there is a severe adverse effect on a heritage asset due to the existence, construction or maintenance of a power project. The **worst case impact** was recorded at two monuments, where the placement of a tower and poleset were located on outer bank of a barrow (ID Number 26) and on a ringfort site (ID Number 15) respectively. It was also recorded at two individual monuments where the setting was significantly impacted – a stone circle in County Cork (CO059-001 ID Number 8) and a ringfort in County Clare (CL067-040, ID Number 6).

The **worst case impact** also occurred at three documented archaeological landscapes where transmission lines were located along and within their boundaries and adjacent to individual monuments that form part of these landscapes.

The **worst case impact** occurs where a designed landscape is altered beyond recognition due to the Architectural and Cultural Heritage impacts.

With good routing practices, well designed EIA processes, statutory protection and consultation with the regulatory authorities, the worst case conditions from the sample field study for heritage assets can be avoided.

5.1.2 OHL, 400 kV

ID Number 7

County Clare

Townland Ballykilty

Transmission line

Transmission Infrastructure

400 kV Dunstown – Moneypoint

400 kV steel lattice tower

One area in Ballykilty townland on the 400 kV Dunstown-Moneypoint transmission OHL was examined. A ceremonial enclosure (CL042-020) is located directly under OHL in between two steel lattice towers located 162m to the east and 216m west of the site. This levelled monument set in gentle undulating farmed pastureland is located immediately west of a railway line. The steel lattice towers do not have a physical impact on the site and though overhead lines cross above the levelled monument they do not detract from its setting. There is no impact considered from the location of this line in relation to this monument.

Table 5.1: Summary of Field Results (400 kV)

ID No.	Impact	Archaeology
ID 7	Typical	<ul style="list-style-type: none"> OHL lines directly over a large scale low-visibility earthen monument No direct impact from steel lattice towers No impact on the setting of the site
ID No.	Impact	Architecture
ID 7	Typical	<ul style="list-style-type: none"> No direct or indirect impact

5.1.3 OHL 220 kV

Sixteen areas on eleven separate 220 kV transmission lines were examined,

ID Number 9

County CORK

Townlands Ballydeloughy

Transmission line

Transmission Infrastructure

220 kV Killonan – Knockraha

220 kV steel lattice tower and overhead lines

The transmission line and towers cross to the south and east of a monument complex comprising a ritual site - holy well (CO019-152); unclassified Castle (CO019-087); Church and graveyard (CO019-152), vernacular house (CO019-086, NIAH 20901917, RPS 01148) and a decommissioned windmill in Ballydeloughy townland. All but the holy well lies to the south of the transmission infrastructure.

No features of cultural heritage significance are directly impacted by the line and while the tower is in the same field as the castle site (50m southeast) it does not have an imposing presence on these remains. There is however an indirect impact on the immediate setting of the holy well (9m northwest). The well is on the roadside and consequently has been subject to number of roadscape changes over time. The presence of the transmission line does not hinder access to either site, although the castle site is on private property and permission must be gained before going to visit it.

The church and graveyard and vernacular structure are sufficiently removed from the transmission line to not be physically impacted by it, the setting of the sites are also maintained by an enclosure and shelter belt of mature trees. A decommissioned windmill (to power a water pump for a well) of cultural heritage merit is located approximately 72m southwest of the tower (as shown on the 1st edition Ordnance Survey six inch map). The structure is located immediately west of the overhead lines.

Overall there is a moderate impact given the proximity of the archaeological complex.

ID Number 8

County CORK **Townlands** Carrigonirtane

Transmission line **Transmission Infrastructure**

220 kV Clashavoon – Tarbert 220 kV steel lattice tower (tower no 253)

Two archaeological monuments, a stone circle (CO059-011) and a standing stone (CO059-012) are located in the same field as this steel lattice tower. The stone circle is located 7m north from the base of the tower and the recorded standing stone is located approximate 90m southwest in the same field from the transmission structure.

While there is no direct physical impact to the recorded monuments, the setting for the stone monuments has been severely compromised. A significant and moderate impact is considered for the respective monuments.

ID Number 13

County ROSCOMMON **Townlands:** Carrowntoosan, Kilnanooan
Carrowgobbadagh and Tullintuppeen

Transmission line **Transmission Infrastructure**

220 kV Cashla-Flagford Steel lattice towers (six towers No's 196-201)

The archaeological landscape of Rathcroghan, the Royal seat of the kings of Connaught is on the Tentative List of potential nominees for World Heritage Site status and as such is considered, by the DAHG, to be a site of potential outstanding universal value. The transmission line was constructed in 1980-1982; there are no archaeological reports recorded for the 1980's in this area for transmission projects.

The land is used for agricultural purposes, primarily for grazing. The transmission line crosses part of the archaeological landscape of the Rathcroghan royal site complex including: RO022-054064, a ringfort, RO022-057052, a road, RO022-057063, a souterrain, RO022-057062, an enclosure, RO022-057061, a road/trackway, RO022-057057, a ringfort, RO022-057058, a field system, RO022-057059, a pitfield, RO022-057060 (National Monument 473), a road-road/trackway, and RO022-056048, a ringfort. As an ancient royal site it offers the opportunity to engage with the physical past and mythical lore of Ireland.

The study area contains various site types, discreet sites such as souterrains, ringforts and enclosures and dispersed sites in the form of field systems and an enigmatic pitfield. These features are also physically joined together by the ancient roads and track ways. While individual features are not directly physically impacted, towers are placed in areas of archaeological activity such as pitfields and field systems where there may be additional associated features present.

The placement of a transmission line across this archaeological landscape detracts from the national significance of the landscape and its individual components and is considered to be inappropriate. There is a significant impact on the integrity of what is now a Candidate UNESCO World Heritage Site.

ID Number 19, 20 & 21

County MEATH

Townlands Castletown Tara

Transmission line

Transmission infrastructure

220 kV Gorman – Maynooth

Steel lattice tower

Three earthwork monuments; Rathmiles (ME031-015), Ringlestown Rath (ME037-005, PO No. 31/1976)⁵⁷ and Riverstown linear earthwork (ME031-040) form part of the wider Tara landscape and were visited due to the proximity of 220 kV Gorman-Maynooth transmission line. The archaeological landscape of Tara, the Royal seat of the kings of Meath and the seat of the Irish high kings is on the Tentative List of potential nominees for World Heritage Site status and as such is considered, by the State, to be a site of potential outstanding universal value.

Rathmiles is strategically placed on a natural prominence 2km north north-west of Tara and is probably defensive in nature. When considering this monument the setting of this site is of key importance and the location of a steel lattice tower to the northwest in the corner of an adjacent field has a significant impact on the immediate setting of the site. As the lands slope away to the northeast, the tower is located on lower land when viewed from the south so the full mass of the tower appears over the monument. The tower is inappropriately placed and it is considered to be too close to the monument.

Ringlestown Rath is located in an agricultural landscape, 2.5km west from Tara. It is one of four large defended enclosures that occupy a strategic position around Tara and commands extensive views to the west and south. It is easily recognisable from the Hill of Tara due to its tree covered nature. The transmission line and the positioning of OHL towers are located to the west and north of the hillfort at a lower elevation as the ground falls steeply away on both sides. The tower to the west is located one field away (113m) and does interrupt the panoramic views from the monument. There is also a farmyard located in this area and this would appear to be the closest development to the monument. While the steel tower to the north (182m) is located at a lower elevation it can be clearly seen from the monument, also the immediate views from the north to the monument are curtailed. Other developments in the area include a single storey dwelling to the north, located in a similar position as a structure shown on the 1st edition OS 6 inch mapping.

⁵⁷ www.archaeology.ie Preservation Orders 1st February 2010 List

The Riverstown linear earthwork has been traced over a distance of about 1.5km and is located about 1km to the west of the Hill of Tara. It consists of two parallel banks built on the edge of a small river valley, the eastern bank sited as close as possible to the break of slope, the western bank slightly downslope of this. The earthwork which runs has a north-south orientation. There is no direct impact on the upstanding section of the monument that was investigated during the field assessment but the transmission line does cross over the monument and a tower is placed approximate 20m to the west of a non-visible section of the feature.

The Gorman-Maynooth 220 kV OHL was built in 1970-1971 before a full understanding of the extent of the cultural heritage landscape associated with Tara was developed. The line, while difficult to see from the Hill of Tara (National Monument 676 & 148), does pass through a sensitive archaeological and cultural heritage landscape that is largely devoid of large scale development. It is a multi-period and ritual landscape of national importance and this significance is enhanced by the overall group value of the monuments. In addition, the Tara Complex has been placed on the Tentative List for the UNESCO World Heritage Site status

The location of the transmission line detracts from the individual setting of the monuments and the wider cultural heritage landscape and is seen as a significant impact.

ID Number 26

County DUBLIN

Townlands Newtown Lower

Transmission line

Transmission Infrastructure

220 kV Carrickmines – Maynooth

Steel lattice tower

The steel lattice tower is located on the south-eastern outer bank of the ring barrow (DU021-039) and has a direct, significant, physical impact on the monument and significantly diminishes the setting of the monument. The monument was surveyed (Figure 5.1) by the Archaeological Survey of Ireland and the plan layout is published in 'The Archaeology of Ballymount Great Co Dublin', Geraldine Stout in Conleth Manning (ed) Dublin Beyond the Pale (1998), 145-154.

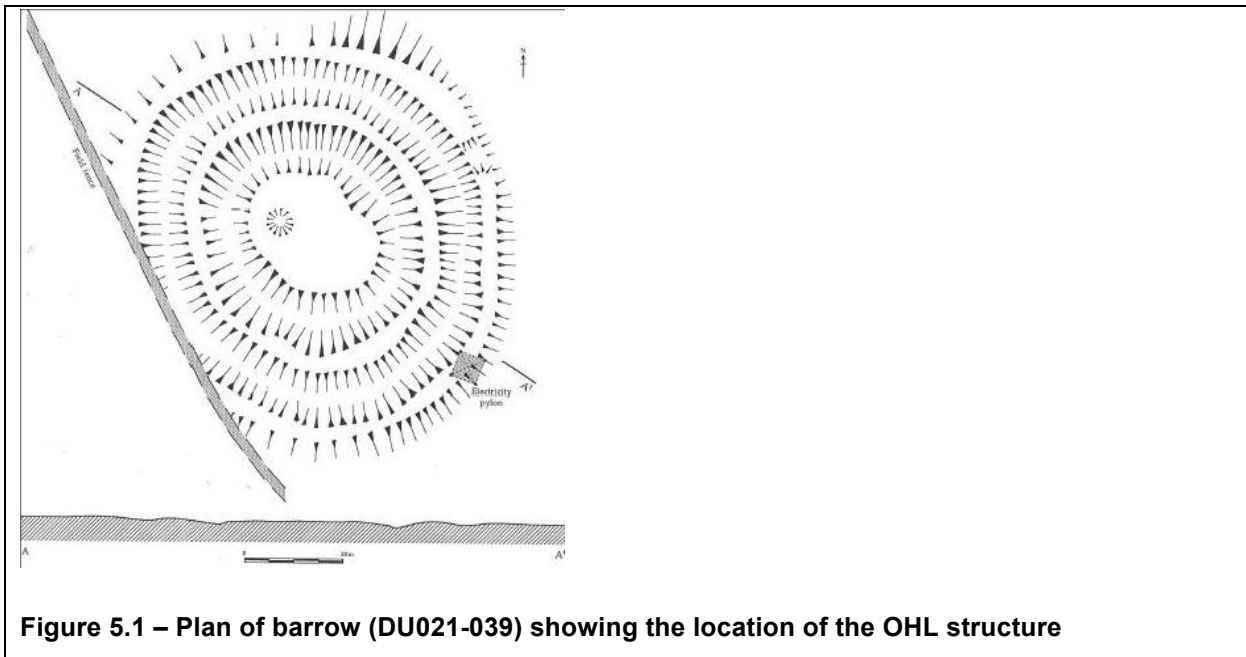


Figure 5.1 – Plan of barrow (DU021-039) showing the location of the OHL structure

ID Number 25

County DUBLIN

Townlands Steelstown

Transmission line

Transmission Infrastructure

220 kV Carrickmines – Maynooth

Steel lattice tower

The NIAH (1121702) records the former gate lodge as retaining all of its original style, character and grace and that the attention to detail make this house an important asset to the local area both architecturally and historically.

The lodge now lies isolated from the former Johnstown-Kennedy Estate. The immediate setting of the lodge is the garden which is bounded by modern walls and well shielded by trees along the entrance laneway. A lattice steel tower is located adjacent to the lane in the corner of a field immediately to the north of the lodge house. As this steel lattice tower has two lines coming into it at different angles it appears to frame the structure and results in the tower being a dominant feature in the landscape. In this case the configuration of the angle and positioning of the line in close proximity to a structure appears to have a greater effect on the structure than a straight transmission line would have had.

The proximity and scale of this tower and line has a moderate/significant impact on the setting of the gate lodge structure.

The transmission line through the former demesne lands of Johnstown House (DU-50-N-995238) does not impact on the remaining structures associated with the house due to their enclosed nature and distance from the line. These are important structures and a valuable asset as they preserve the historic character of the former demesne property.

The transmission line travels through three fields of the outer lands associated with the former demesne. When viewed from the interior of the estate the line is located to the west of a tree lined fields and shelterbelts of woodland and therefore largely obscured from view.

ID Number 23

County WICKLOW

Townlands Castleruddery Lower & Upper

Transmission line

Transmission Infrastructure

220 kV Kellis – Maynooth

Steel lattice tower

The transmission line and tower is located to the west on lower ground (168m) behind a large agricultural shed and yard and has no impact on the stone circle which is a National Monument in State ownership (WI021-032, PO No. 109/1940, NM No. 441)⁵⁸. The tower can be viewed from the entrance of the stone circle if you look straight ahead to the west; and slightly detracts from the setting of the monument.

A public right of way is located to the northeast of the National Monument and a local ESB pole is located immediately west of the stone circle within the embankment and to the south, the overhead lines of this local connection cross over the monument. Due to the small scale nature of the line and the increased proximity to the National Monument it is a great intrusion on the site.

The transmission tower is located 62m northwest of the northwest corner of the designed landscape feature (WI021-030001/02). The tower is located in the boundary of the field and does not impact upon the monument.

ID Number 21

County MEATH

Townlands Rosnaree

Transmission line

Transmission Infrastructure

220 kV Louth-Woodland

Steel lattice tower

A ringfort (ME026-004) is located in agricultural land, east of two steel lattice towers which are located in the adjacent field (158m). There is no direct impact to the monument. As the land slopes to the east; the towers are located on higher ground. A house is located in between the monument and tower.

While the tops of the towers are visible from the monument, you cannot see the monument from the towers due to the presence of high hedgerow boundaries. There is a slight/negligible visual intrusion on the site from the presence of the towers.

⁵⁸ www.archaeology.ie, National Monuments in State Care Ownership & Guardianship 4th March 2009

There have been a number of incremental changes in this landscape including the use of deep ploughing in the same field as the monument which has altered the shape and form of the mound from circular to oval. On aerial photographs reviewed for purpose of the report, the mounded area appears to be located slightly further south of the fort that is shown on the first and revised editions of the Ordnance Survey mapping. Agricultural practices pose more of an immediate threat to this feature than the location of towers to the west.

A thatched cottage is located along the road about 92m to the west and uphill of the tower. The tower does not detract from this roadside vernacular structure.

ID Number 22

County MEATH **Townland** Crewbane

Transmission line **Transmission Infrastructure**

220 kV Louth-Woodland Steel lattice towers

In Crewbane townland, a souterrain (ME019-081); a ringfort (ME019-090); a field system (ME019-091) and an enclosure (ME019-101) was recently discovered. There is no direct impact on this newly revealed, interesting complex of monuments from the transmission towers which are located c. 460m to the west and approximately 1.5km from the Knowth passage tomb complex. While the transmission towers have no physical impact on any cultural heritage asset, they are located along the western perimeter of the Brú na Bóinne UNESCO World Heritage Site 'buffer zone' and detract from the character and landscape setting of the Brú na Bóinne archaeological complex which is of international importance.

Crewbane house, although having no formal designation is considered to be of architectural heritage merit as it lies to the west of these monuments with the monuments forming part of its attendant grounds. The house is orientated towards the east, a designed aspect to overlook the bend in the river towards the site of Brú na Bóinne. The transmission line runs to the rear of the house, field boundaries screen it from the views from the house. The property is not impacted by the transmission line.

When adjudicating on the proposed Slane Bypass which was proposed to be located to the west of the transmission line, An Bord Pleanála⁵⁹ considered that the proposed development would have 'a detrimental impact on the rural character, landscape setting, cultural amenity and archaeological heritage of the Brú na Bóinne archaeological complex, and would be contrary to the heritage

⁵⁹ An Bord Pleanála, 2012 refusal for planning permission for the N2 Slane Bypass Road Scheme.

protection provisions of the Development Plan. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area’.

While a proposed road and bridge crossing is a linear development it is totally different in scale, visual impact and extent compared to a transmission project. The ruling does set a precedent for development in proximity of the buffer zone for the UNESCO World Heritage Site (Brú na Bóinne) and the importance of viewshed analysis and developing an understanding of the setting when assessing heritage sites.

Table 5.2: Summary of Field Results (220 kV)

ID No.	Condition	Archaeology
ID 21	Typical	<ul style="list-style-type: none"> No direct impact or indirect impact from lattice steel towers or OHL
ID 9	Non-standard	<ul style="list-style-type: none"> Indirect visual impact to an archaeological and cultural heritage complex
ID 22 ID 13 ID 26 ID 8 ID 18, 19 & 20	Worse case	<ul style="list-style-type: none"> Proximity to UNESCO World Heritage Site and determined to be within the viewshed OHL detracts from a tentative UNESCO World Heritage sites and towers are located within recorded field systems & pit fields Direct, physical impact on a recorded monument Due to the immediate proximity of tower the setting of the an upstanding stone monument has been irrevocably compromised OHL passing through a documented archaeological landscape, a tentative UNESCO World Heritage site, in proximity to substantial upstanding earthen monuments
ID No.	Condition	Architecture
ID 9 &22 ID 21 ID 23 ID 24	Typical	<ul style="list-style-type: none"> No direct or indirect impact Structure in proximity to the OHL but the towers do not detract from the setting Tower located in field boundary not impacting on a designed landscape and/or features OHL crossing former demesne landscape – does not detract from the historic character
ID 25	Non-standard	<ul style="list-style-type: none"> Angular wire-scape around a recorded structure (NIAH) increases the visual impact and detracts from setting
	Worst case	<ul style="list-style-type: none"> No recorded impact

5.1.4 OHL 110 kV

Parts of twelve townlands containing heritage assets and 110 kV OHL in seven counties were examined. On the 110 kV Binbane-Letterkenny line which is currently under construction, three separate areas were considered and these were assessed due to the presence of bogland, a railway embankment and a vernacular cottage.

ID Number 4			
County	MAYO	Townland	Rinnahulty

Transmission line**Transmission Infrastructure**

110 kV Castlebar- Dalton

Wooden poleset

The overhead lines cross the lowlying area in a northeast-southwest direction between the archaeological complex comprising a castle site (MA079-061002) and a church/children's burial ground (CBG) (MA079-061001). As the polesets are located in fields to the north and south of the archaeological complex on higher ground there is little interference or impact on the setting of the archaeological features and no direct impact to the features.

A local 38 kV OHL is located nearer the road side and in close proximity to features of a vernacular heritage interest such as a stone bridge, corrugated iron barrel vaulted barn and a two storey, three bay rendered roadside dwelling. While none of these features are directly impacted given the smaller scale of this OHL it has more of an immediate impact to surrounding features as it cuts across and frames an individual's view.

ID Number 5**County** MAYO**Townlands** Roslahan Upper**Transmission line****Transmission Infrastructure**

110 kV Castlebar – Cloon

Wooden poleset (no 51) and a steel angle tower (no 50)

This large ringfort (MA090-008) is located on the crest of a hill in rural pasture with extensive views to the west, northwest, southwest and limited to the east. While there is no direct, physical impact to the monument and no other associated features were revealed as a result of testing⁶⁰, there is a significant impact to the setting of the monument when viewed from the southeast.

The immediate setting and view of the ringfort is detracted from the south-east with the placement of a double poleset; c.25m from the exterior of the monument. Other activities such as land improvements and farm access tracks are located immediately to the west of the monument and also detract from the natural setting of the monument.

ID Number 3**County** MAYO**Townlands** Elmhall⁶⁰ Moore Ltd 02E1288

Transmission line

110 kV Castlebar – Cloon

Transmission Infrastructure

Wooden poleset

This extensive walled garden is not specifically recorded but is associated with the recorded monument Elmhall House (MA090-146). Archaeological testing took place at a set of double poles erected near the walled garden of Elmhall House, Elmhall, Co. Mayo. The wall is substantial and in places stands up to 3.5m high. A single trench was excavated. Topsoil and sod directly overlay bedrock. Nothing of archaeological significance was noted⁶¹. The walled garden is now traversed in an east-west direction by overhead transmission lines and there is a double poleset located immediately adjacent to the eastern wall. The overhead line spans the structure and the visual impact is best observed from an elevated position from the east.

ID Number 2**County** MAYO**Townlands** Eskeragh**Transmission line**

110 kV Belacorrick – Moy

Transmission Infrastructure

Wooden poleset

This pre-bog complex of archaeological pre-historic monuments and features is located on a ridge 130m to the south (closest monument, stone row MA028-003004) of the nearest double poleset. The OHL traverses the bogland from the north to northeast of the archaeological complex. However in landscapes such as this there is the potential to reveal extensive sub-surface remains such as field systems. The transmission project does not effect the known recorded remains.

ID Number 10**County** KERRY**Townland** Furhane**Transmission line**

110 kV Clahane – Trien

Transmission Infrastructure

Wooden poleset

A complex of fulacht fiadh (KE016-032, KE016-031) is located in a large, open field that is subdivided by electric fences. The field system has been completely altered from the first edition Ordnance Survey six inch mapping. The land is wet and soggy underfoot and slopes to the north to a large embanked boundary with a deep cut drain. Two sets of double wooden polesets are located to the

⁶¹ Moore Ltd 02E1290

north in the immediate environs of the fulacht fiadh sites. However, in contrast to the record, there are no visible, above ground remains of these monuments. Their removal appears to have been the result of unauthorised land improvements in the area. As the visible expression of these monuments has been removed it was not possible to make a determination as to the level of impact experienced.

ID Number 15

County WESTMEATH

Townland Davidstown

Transmission line

Transmission Infrastructure

Lanesboro – Mullingar 110 kV

Wooden poleset

This ringfort (WM018-030) is located within a pasture field in an undulating landscape. There are remnants of a former house and courtyard to the west of the ringfort on lower ground. The field that the ringfort stands within is currently used for grazing horses. The site is heavily denuded by animal poaching and tyres are placed against the south eastern bank. The poleset is located 1m to the south of the outer western bank and the lines cross directly over the monument. A local electricity connection crosses the site in a north-south direction and is supported by a wooden pole placed in the interior of the site to the east of the entrance feature.

There is a direct impact on this monument due to the proximity of the transmission line and the siting of the poleset is inappropriately located and leads to a degradation of the setting of the site. A local connection crossing over the site in a north-south direction further diminishes the character of the monument.

ID Number 16

County WESTMEATH

Townland Irishtown

Transmission line

Transmission Infrastructure

Lanesboro – Mullingar 110 kV

Wooden poleset

This ringfort (WM017-024) is located in a farmed landscape of pasture enclosed with stone walls in former demesne lands. The double wooden poleset does not detract or physically impact on the ringfort. The transmission line is located to the west and south of the monument. The nearest poleset

located to the south and along the field boundary in the adjacent field is approx. 50m-60m from the ringfort and the overhead line crosses the corner of the same field that the monument is located within. The line is set at a lower level than the ringfort as the land rises to the east. As the poleset is located along the tree lined boundary it tends to blend in with the mature trees and does not detract from the setting of the monument.

ID Number 17

County WESTMEATH **Townland** Irishtown

Transmission line **Transmission Infrastructure**

Lanesboro – Mullingar 110 kV Wooden poleset

This ringfort (WM017-022) is isolated within a forestry plantation, a double wooden poleset and overhead line is located approx. 50m to the north (from the visible edge of the monument) and has no direct impact on the site and does not detract from the setting. The wooden poleset blends into the forested landscape.

ID Number 27

County DUBLIN **Townland** Saggart

Transmission line **Transmission Infrastructure**

Citywest-Kilteel 110 kV Two adjacent steel lattice towers

The tower structures are located in City West Golf Course which was formally part of the lands attached to Saggart House (DU-50-O-041272). The towers are located within the Royal Manor of Saggart (DU021-034) and lie 15m north of a cemetery/graveyard site (RPS 309, NIAH 11213034). The cemetery is screened from the towers by a boundary of evergreen fir trees. The gravestones date from the 1890's to the present day and the cemetery is an important social and religious focus for the people of Saggart. Overhead wires traverse the north-western section of the graveyard and connect to a larger steel tower which is located in the front garden of St Anthony's House. While the tops of the towers can be viewed from the graveyard, the enclosed nature of the graveyard is not disturbed by the presence or the overhead wires. Test excavation established that there were no subsurface archaeological remains in proximity to the towers.

ID Number 1

County DONEGAL **Townlands** Bellanamore, Meenasrone North, Clogher East

Transmission line **Transmission Infrastructure**

Binbane - Letterkenny 110 kV Double Wooden Poleset (218) and angle towers (215, 180)

The scheme is under construction. An archaeologist is monitoring all excavation work associated with the scheme. To date, no archaeological feature or sites have been revealed by the monitoring archaeologist.

Table 5.3: Summary of Field Results (110 kV)

ID No.	Condition	Archaeology
ID 1 ID 4, 10, 17, 16 & 27 ID 2	Typical	<ul style="list-style-type: none"> Archaeological monitoring of the excavation of a double wooden poleset, no features revealed No direct impact or indirect from double wooden poleset or OHL Double wooden poleset located to the north and east of an archaeological complex in bogland – no impact
ID 5	Non-standard	<ul style="list-style-type: none"> Significant impact to the setting of a ringfort due to proximity of a wooden poleset and angle lattice tower
ID 15	Worse case	<ul style="list-style-type: none"> Direct, physical impact on a recorded ringfort due to the location of a double wooden poleset on the outer perimeter of the monument
ID No.	Condition	Architecture
ID 1 & 4 ID 24 ID 16 ID 27	Typical	<ul style="list-style-type: none"> No direct or indirect impact Structure in proximity to the OHL but the polesets do not detract from the setting Poleset located in field boundary it does not impact on the designed landscape and or features OHL crossing former demesne landscape – does not detract from the historic character
ID 3	Non-standard	<ul style="list-style-type: none"> Poleset is located in close proximity to walled garden (cultural heritage feature)
	Worst case	<ul style="list-style-type: none"> No recorded impact

5.1.5 Substations

Two substations and associated infrastructure were visited and assessed:

ID Number 6	
County	CLARE
Townland	Carrowdotia North
Transmission station	Transmission Infrastructure
400 kV Moneypoint Substation	400 kV Dunstown-Moneypoint & 220 kV Moneypoint-Prospect

The landscape in the immediate area has changed significantly since the first edition Ordnance Survey six inch mapping which shows Carrowdotia House and lands as part of a demesne landscape with woodland shelterbelts, a lodge, avenue, orchard, principal house and associated structures, and ringforts which acted as ornamental tree rings. The former demesne lands associated with Carrowdotia House are no longer recognisable and are now used for industry and forestry. This area is now zoned for industrial use and forms part of the lands for Moneypoint power station and is not considered to be of cultural heritage significance.



Plate 5.1 Former Demesne Lands Associated with Carrowdotia Huose (ID Number 6)

ID Number 14

County Sligo

Townland Ballysumaghan

Transmission station

220 kV Srananagh Substation

Transmission Infrastructure

Flagford-Srananagh 220 kV (not live at the time of survey)

Srananagh-Sligo 110 kV,

Cathaleen Falls-Srananagh 1 & 2 110 kV

The siting of the substation is located within a naturally occurring lowlying basin of land (hollow) and so the surrounding landscape acts as a natural screen. The area has experienced changes over the years and this can be viewed on the subsequent editions of the OS maps and in the field where hills to the north of the station are now covered with forestry plantations. The nearest recorded monument, an enclosure (SL027-029002) located approx. 50m to the west is in private lands and well screened behind a tree lined boundary. The monuments located to the south are well screened from the substation, an enclosure (SL027-048) is naturally screened by the undulating topography of the landscape and the ringfort (SL027-0450) and a circular enclosure (DL027-046) is screened from the steel towers and OHL by new forestry plantations.

There are a few remnants of the former demesne landscape (SL-25-G-745255). The demesne lands were largely broken up and in separate ownership in advance of the development of the station and the majority of the original planting and woodland belts have been removed from the landscape. 'Mullaghbawn Wood' is located to the south of the station and the 'Castle Lough' to the north is now a wetland area, these features would have been part of the original demesne layout. When standing in the station there are no recognisable features associated with the former demesne landscape. The former country house, Castle Neymoe (NIAH 32402706) cannot be viewed from the station.

Prior to and during the construction and development of the substation; archaeological reporting, testing, excavation and monitoring took place. While features of possible archaeological interest were revealed at the test excavation stage of the development these were later fully excavated and found to be natural and not archaeological in origin⁶².

It is interesting to note that at first glance this area looks to contain a number of interrelated heritage assets (demesne landscape, upstanding monuments, cultural and built heritage features) but on a closer examination supported by a field inspection reveals itself as an appropriate location for a station. Given the topography and restricted views to and from the station and changes in the landscape it does not conflict with the existing environment that the monuments and built heritage structures present themselves within.

Table 5.4: Summary of Field Results (Substations)

ID No.	Condition	Archaeology
ID 14 ID 6	Typical	<ul style="list-style-type: none"> Archaeological monitoring, test excavation and excavation in advance of the construction of the station revealed no archaeology. Archaeological monuments in proximity to the station, for example 50m however there is no impact on the setting of the monument due to screening.
	Non-standard	<ul style="list-style-type: none"> No recorded impact

⁶² Valerie J. Keeley 04E0334, 04E1254

	Worse case	<ul style="list-style-type: none"> No recorded impact
ID No.	Condition	Architecture
ID 14	Typical	<ul style="list-style-type: none"> Location of station in former attendant grounds of a demesne, no features are impacted and the setting of the demesne is not diminished.
	Non-standard	<ul style="list-style-type: none"> No recorded impact
ID 6	Worst case	<ul style="list-style-type: none"> Designed landscape has been altered beyond recognition due to the development of the station and associated infrastructure

5.1.6 Cumulative Impact

Cumulative impact is the addition of many small impacts to create one larger, more significant, impact. For the purposes of this project, potential cumulative impact is considered to occur when two or more transmission lines converge together in proximity to a heritage asset.

ID Number 6

County CLARE **Townland** Carrowdotia North

Transmission line **Transmission Infrastructure**

400 kV Dunstown – Moneypoint Steel lattice towers

220 kV Moneypoint – Prospect Moneypoint Substation

A large oval shaped ringfort (CL067-040) measuring approximately 35m east-west and 27.50m north-south. It is located in rolling pasture land even though the general surroundings have been significantly altered. It is planted with mature trees and may have been used as an ornamental folly as part of Carrowdotia House which is located to the south. The 220 kV tower is located 32m to the south-west of the ringfort and the 400 kV tower is located approximately 12m south-east from the monument.

There is a significant impact on the immediate setting and potential subsurface features associated with the monument and the entire area to the south has been subject to substantial change with the development of the power station. The demesne lands associated with Carrowdotia House are no longer recognisable and are now used for industry (Moneypoint Station) and forestry.

ID Number 11

County Offaly **Townland** Cloniffeen

Transmission line **Transmission Infrastructure**

220 kV Killonan – Shannonbridge Steel lattice tower

110 kV Cahir – Shannonbridge Double wooden poleset

220 kV Maynooth – Shannonbridge

Steel lattice tower

The nearest tower is located approximately 140m northeast of the church & children’s burial ground (CBG) (OF013-007001/002) monument while the double wooden poleset is located approximately 58m to the southwest of the site along the field boundary in the same field. Even though the wooden poleset is located closer to the monument it detracts less than the 220 kV steel towers to the northeast of the site. However, there are other closer visual impacts that detract from the setting of the site such as a large agricultural shed located to the north east and the Bord na Móna works which are located approximately 57m to the northwest. These works are generally loud and noisy in an otherwise quiet and rural landscape, and they disturb the tranquillity at the site and contribute to a moderate negative impact to the setting of the monument. Even though undertaken with good intentions, the ill-informed improvement works (i.e. the building of an alter and planting of trees) at the monument has the most significant direct impacts on the subsurface archaeological remains. The transmission structures themselves do not detract from the monument.

ID Number 12**County** Offaly**Townland** Cloniffeen**Transmission line****Transmission Infrastructure**

110 kV Lanesboro – Shannonbridge

Double wooden poleset

110 kV Cashla – Shannonbridge

Double wooden poleset

110 kV Ennis – Shannonbridge

Double wooden poleset

Shannonbridge Substation

Shannonbridge village is located on the eastern side of the Shannon in Co Offaly. It is a pleasant, pretty village containing many stone structures. The river at this location is striking with strategically placed; imposing buildings and structures flanking its banks⁶³. The bridge connecting County Roscommon and Co. Offaly is a testament to eighteenth-century engineering and stone masonry⁶⁴.

Three 110 kV lines cross to the south of Shannonbridge. From the eastern side (Co Offaly) while there is a proliferation of lines there is no direct impact on underwater and terrestrial archaeological features⁶⁵ and views to buildings and structures of architectural heritage significance are maintained.

⁶³ Bastioned fort (RO056-016, PO), Roscommon RPS (05600028, 05600029), Roscommon NIAH (31956005), Swivel bridge (Offaly RPS 19-08, NIAH 1480510)

⁶⁴ Bridge (RO056-018001), Offaly RPS (19-09), Roscommon RPS (0560027), Offaly NIAH (14805011 -National Rating), Roscommon NIAH (31956004-Regional Rating)

⁶⁵ Castle unclassified (OF013-010), Weir-fish (OF013-037003),

However entering the village from the Roscommon side, views of the River Shannon are compromised by the lines and Shannonbridge Station. From the bridge and the bastioned fort on the western side of the Shannon, the transmission lines and station dominate the view and negatively impact the setting of the area from this aspect.

Table 5.5: Summary of Field Results (Cumulative Impact)

ID No.	Condition	Archaeology
ID 12	Typical	<ul style="list-style-type: none"> No recorded impact
ID 11	Non-standard	<ul style="list-style-type: none"> Moderate impact on the setting of a church, graveyard and CBG due to noise from associated BnM works which disturbs the tranquillity of the site.
ID 6	Worse case	<ul style="list-style-type: none"> 400 kV tower is located 12m from an upstanding ringfort and the setting is further diminished by the presence of a 220 kV tower in the same field. Significant impact on the setting of the ringfort.
ID No.	Condition	Architecture
ID 11	Typical	<ul style="list-style-type: none"> No recorded impact
ID 12	Non-standard	<ul style="list-style-type: none"> No direct impact on protected & NIAH structures, however views to and from these features and the setting of the structures are compromised by multiple OHL and station.
ID 6	Worst case	<ul style="list-style-type: none"> Designed landscape has been altered beyond recognition due to the development of the station and associated infrastructure

5.2 FIELD SURVEY RESULTS

An assessment of the results of site survey have been arranged thematically into ten headings as follows:⁶⁶

5.2.1 Direct impact on a monument

Two direct impacts were recorded during the field survey, These occurred where a steel lattice tower and a double wooden poleset were placed within or on an upstanding monument, at a ring barrow (DU021-039) in County Dublin (ID Number 26) and a ringfort (WM018-030) in County Westmeath (ID Number 15).

5.2.2 Direct impact on architectural heritage

No direct impacts were recorded to features of architectural heritage significance as a result of the field survey.

5.2.3 Direct impact on a cultural heritage landscape

Three instances were recorded of transmission projects passing through or located on the periphery of a recorded/designated or documented cultural heritage landscape for example Brú na Bóinne (ID Number 22), The Tara Complex (ID Number 18, 19 and 20) and Rathcroghan Royal Complex (ID Number 13). Individual monuments through the latter two landscapes have also experienced deterioration in their setting due to the inappropriate placement of transmission infrastructure (towers).

5.2.4 Direct impact on a demesne

There were six occurrences where transmission projects pass through landscapes that had been annotated as demesnes or estates on the first edition Ordnance Survey six inch edition mapping (1837-41). However fieldwork has revealed that in the case of five, the estate landscapes have experienced significant change from a number of other external factors and that the presence of transmission stations and towers do not detract from the cultural heritage surroundings.

Two of the demesnes are now golf courses (Johnston (ID Number 25) and City West (ID Number 27)) and Castle Neymoe (ID Number 14) had been previously broken up into smaller landholdings so the

⁶⁶ These headings are not mutually exclusive, and some overlap should be expected.

attendant grounds have lost any of the remaining key demesne features and connectivity to them. Other smaller estates such as Irishtown (ID Number 16) and Castleruddery (ID Number 24) have experienced the loss of the principal demesne building and the curtailment and disturbance of lands respectively. The lands of Carrowdotia House and demesne in Co Clare (ID Number 6) have been altered beyond recognition by the development of Moneypoint Station and forestry plantation stands.

5.2.5 Indirect impact on a monument – setting

There were three monuments where there is a significant impact on the setting due to the proximity of towers. These impacts occurred when a tower was 15m or less from a monument or where there was more than one transmission structure in the same field as the monument – MA090-008; a ringfort, in County Mayo (ID Number 5), CO059-001; a stone circle in County Cork (ID Number 8) and CL067-040; a ringfort in County Clare (ID Number 6).

Three monuments (complexes)/cultural heritage sites experienced moderate impacts from the location of transmission towers and infrastructure – CO019-087; Castle unclassified, CO019-152; holy well and windmill, in County Cork (ID Number 9). A standing stone (CO059-012) (ID Number 8) in County Cork and a Church, CBG and graveyard (OF013-007001/002) in County Offaly (ID Number 11) also had moderate impacts.

5.2.6 Indirect impact on architectural heritage – setting

The setting of two individual structures, a walled garden in County Mayo (ID Number 3) and a lodge house in County Dublin (ID Number 25) as well as a complex of historic structures at Shannonbridge (Roscommon/Offaly) (ID Number 12) were impacted due to close proximity of double wooden polesets and steel towers.

5.2.7 The involvement of archaeologists prior to planning approval

Out of the sample of twenty-seven transmission projects, documentary evidence was readily available for eight cases where archaeological and cultural heritage reporting and investigation took place before and during construction (ID Numbers 1, 2, 3, 5, 12, 14, 22, 27).

5.2.8 No archaeological issues

No archaeological issues were observed during the construction process of the Donegal 110 kV project (ID Number 1).

Along nine of the transmission projects sampled for this survey, the field inspection revealed that the transmission infrastructure did not have an impact or had a slight/negligible impact on heritage assets (ID Numbers 1, 2, 4, 7, 14, 16, 17, 21 and 23).

5.2.9 No architectural heritage issues

Seven transmission projects were recorded as having no impact to structures and complexes of an architectural heritage interest. These architectural heritage features range from vernacular houses, stone bridges to designed landscape features (ID Numbers 1, 4, 16, 21, 22, 23 and 24).

5.2.10 Other impacts

At nine of the cultural heritage assets visited for this assessment, it was found that they had experienced a more significant, direct impact from other activities. The monuments were damaged through the lack of appreciation of their fundamental archaeological and cultural value. These activities can be grouped under the following headings:

- Land improvement activities including improved internal access ways through farms (2) (ID Numbers 5 and 13)
- Improvement works at a monument without a recorded archaeological supervision (1) (ID Number 11)
- Consolidation of land holdings (1) (ID Number 10)
- Construction of a railway (1) (ID Number 7)
- Wooden polesets placed on monuments from local ESB connections (2) (ID Numbers 23 and 15)
- Deep ploughing altering the shape of recorded and National Monuments (2) (ID Numbers 21 and 23)

The issues illustrated above are largely based on a lack of understanding regarding

- the full extent and nature of monuments; and
- the need for exclusion zones of specified sizes to be maintained around monuments where no invasive work can take place.

6 CONCLUSIONS & RECOMMENDATIONS

6.1 EVIDENCE BASED CONCLUSIONS

In most cases, infrastructure for transmission projects is capable of adequately avoiding upstanding monuments and protected structures or features of architectural significance. The majority of the breaches witnessed during the field survey were not committed intentionally but resulted instead from the uninformed actions of operators, who do not have a background in archaeology, or along transmission projects that date back to the 1970 and 1980s where advice from the governing department would have been very limited and of its time.

The following observations were made in the field:

- Towers and double wooden polesets are often placed in the corner of a field and or at field boundaries in order to minimise disturbance to the landowner. This practice often minimises the effect on cultural heritage assets as well as enabling the transmission infrastructure to blend into the boundary vegetation and be at a remove from the monument or build heritage structure/feature. Careful routing ensures that earthen or stone structures such as ringforts, cashels and children's burial grounds that sometimes can be defined by a field boundary will be avoided by a transmission project.
- Local connection 38 kV ESB lines – these lines are small in scale and have been witnessed at two archaeological monuments. These lines can have an immediate direct and indirect impact on a monument as they are in a person's line of vision and tend to frame a site. Often the polesets are located on banks and ditches associated with or forming part of a monument.
- Topography and the individual siting of a monument and protected structure are crucial to understand during the route selection and subsequent stages of designing a transmission project. This understanding is best achieved by inspection in the field.
- The footprint of excavation required for an overhead transmission projects while limited can be greater in extent than initially expected due to the excavation of associated elements such as rafts, stay lines, earth mats/rings and access ways and other engineering solutions for the erection of lines in response to challenging ground conditions.
- The presence of a consultant archaeologist during the planning, design and subsequent construction of a project can assist in the avoidance of cultural heritage assets on site.

6.2 PROJECT CONCLUSIONS

Archaeology and cultural heritage sites are a finite physical and cultural resource which cannot be replaced once disturbed or damaged. As the evidence based study has proven, individual designated monuments and protected structures, NIAH structures and gardens tend to be limited in physical extent and therefore not particularly onerous to avoid and have generally been avoided in the past.

Significant but undesignated archaeological sites, buildings and designed landscapes also generally tend to be limited in extent and can most often be avoided. Therefore these should be avoided wherever practical. To facilitate avoidance, early consultation with stakeholders and the completion of robust constraints and route selection studies and EIS reports, supported by the necessary field survey and investigatory work, is important for the early identification of features and areas of significance.

The results of the evidence based study for cultural heritage have established that successful transmission projects depend on:

- Early and appropriate consultation and dialogue with prescribed authorities and stakeholders
- Early and open community involvement in the identification and reporting of non-designated assets (intangible heritage)
- Cross referencing of cultural heritage and landscape and visual impacts and discussion between EIS consultants
- Full consideration of potential options, if necessary informed by archaeological assessment/evaluation and architectural heritage survey
- Good proportionate decisions on often competing values and interests for example visual amenity verses impact on buried archaeology
- Appropriate mitigation

Along with well-planned routing studies, standard mitigation for transmission projects in Ireland includes the following:

- Avoid recorded monuments, National Monuments and areas of known archaeological potential
- Avoid areas that contribute to the setting of National Monuments and Recorded Structures
- Consultation with the Statutory Authority
- Undertake field survey, geophysical surveys or other appropriate remote sensing survey of the proposed development if it is in an area identified as having a potential to reveal archaeological remains or lies in close proximity to a recorded monument
- Investigate/monitor ground disturbed during construction

A grading system of monuments would assist in avoiding the politicisation and polarised debates that can occur between archaeological conservation interests and infrastructural development. The grading system would have to provide an acceptable and transparent comparison methodology that

is judged to be objective and reputable by all stakeholders (Cooney, O'Sullivan & Downey, 2006, 53). The establishment of a formal grading system would have to be nationally agreed and formulated by the National Monuments Service and the National Museum of Ireland.

The development of a set of criteria and attributes to examine the setting of heritage assets in relation to transmission projects (section 6.3) similar to the English Heritage Guidance discussed in this document, would contribute in delivering a more transparent framework to assist the decision-making process.

The creation of multi-disciplinary liaison groups from the planning to onsite construction stages of a project would ensure that dialogue is kept open with all parties and a holistic approach is taken to the environmental elements of any scheme.

6.3 SETTING OF CULTURAL HERITAGE ASSETS

The evidence based study has identified the potentially adverse effects of transmission projects on the visual amenity of the historic landscape and notes that steel lattice OHL structures and double wooden polesets can adversely affect this amenity.

Where these effects have been recorded in the field survey, particularly at Brú na Bóinne, the Tara Complex and Rathcroghan Royal Complex, they occurred at a stage prior to the designation or potential designation of the specific historic landscape or where a documented understanding of the full extent of the historic landscape had yet to be recorded.

While change within the setting of an historic site or landscape may be acceptable, in certain instances development will be considered intrusive and inappropriate. This effect on the setting of archaeological and heritage sites requires an assessment to be made on a case by case basis according to the type of tower and poleset development, its location and landscape setting by means of objective analysis based on a set of predefined criteria and professional judgement, supported by appropriate descriptive material. It is good practice to document each stage of decision-making process in a non-technical way, accessible to non-specialists.

The impact will vary according to the size and extent of the tower and the type of historic/archaeological landscape involved. In order to aid this assessment, when considering designated and well documented historic and archaeological landscapes, the capacity for that landscape to absorb new development should be reviewed and the sensitivity of the landscape assessed.

The proper identification of landscape character and the protection of sites of archaeological interest lie within the remit of the Planning Authority. Policies to affect such protection are included in the development plan. The land-use policies in a development plan determine the location of activities and

developments which may impact on the built or natural heritage (The Heritage Council, 1997, 5). Development plans may provide for the preservation of the character of landscapes, including views, prospects and streetscapes in urban areas (section 10 (2) (e) Planning and Development 2000). Planning authorities submit Draft Development Plans to the Department of Arts, Heritage and the Gaeltacht for comment. They are encouraged to support the protection of the amenity of monuments and sites of archaeological interest within the wider landscape.

High quality design can play a role in minimising any adverse impacts. This design quality has to be based on a considered understanding of the character and significance of the heritage asset involved whether it is an individual monument or building or a more extensive historic landscape. The topography of the landscape involved will also have a bearing on the design.

Where a cultural heritage asset, be it a recorded monument or protected structure, architectural conservation area or designed landscape, will be compromised due to the proposed development, the significant adverse effects on the qualities for which the area has been designated have to be demonstrably outweighed by the development's environmental, social and economic benefits.

6.4 RECOMMENDATIONS - POTENTIAL FURTHER WORK

6.4.1 Ensure the Input of a Project Archaeologist in Transmission Infrastructure Development

The evidence based study sets out the role of the Project Archaeologist and how his/her presence throughout the planning and development process, as part of a multi-disciplinary project team, can provide a consistent, independent approach to a portfolio of individual projects and manage a centralised framework for the development of all archaeological considerations. Above all, Project Archaeologists have demonstrated the merit of increased levels of professional consultation between consultant archaeologists and the National Monuments Service.

In addition to making consistent recommendations and approving mitigation strategies, Project Archaeologists can provide archaeological training to operators and provide an advisory role, offering practical advice on specific archaeological issues encountered in the field while promoting awareness of cultural heritage assets.

6.4.2 Transmission Projects and Cultural Heritage Guidelines - Planning & Design

This study has provided a factual basis for the development of evidence-based guidelines for power transmission projects in Ireland. The purpose of the guidelines would be to assist with the formulation of a consistent approach to heritage at all stages of transmission projects and to standardise the approach for all cultural heritage assessment during the planning process. Such a standardised

approach would assist practitioners in providing robust assessments upon which the relevant planning authority can make a decision in a clear, transparent and practical way.

Such guidelines should consider the impacts of a transmission project on the historic environment including archaeological monuments and artefacts, protected structures and designed landscapes. This consideration should extend to designated and significant undesignated sites and cultural heritage areas, including the implications of the proposed development on their setting. The guidelines should embrace both the direct, physical impacts and all indirect impacts.

6.4.3 Transmission Projects and Cultural Heritage Guidelines - On Site

The evidence-based guidelines could be developed to give practical advice to EirGrid/ESB personnel in relation to the identification and avoidance of archaeological/cultural heritage remains during on site transmission construction procedures. Guidelines are intended to ensure that every reasonable effort is made to avoid, remove or minimise adverse impacts on cultural heritage remains.

Such guidelines would be assisted by providing brief illustrated descriptions of various types of archaeological and built heritage remains, by summarising the legislation concerning archaeological and architectural heritage protection and by outlining the measures to be adopted during the construction of transmission lines, underground cabling and substations with respect to cultural heritage assets.

REFERENCES

Bennett, I. [ed.] (1987 to present) Excavations Bulletin: Summary Accounts of Excavations in Ireland. Bray. Wordwell. (www.excavations.ie)

CAAS Environmental Ltd on behalf of the Environmental Protection Agency (EPA), (2003) *Advice Notes on Current Practice (in Preparation of an Environmental Impact Statement)*, 139

Condit, T. (1993) Ritual enclosure near Boyle, Co. Roscommon. *Archaeology Ireland* **23**, 14-16

Condit, T. and Grogan, E. (1998) Prehistoric ritual enclosures in south-east Clare. *The Other Clare* **22**, 20-3

Connolly, M. and Condit, T. (1998) Ritual enclosures in the Lee Valley, Co Kerry. *Archaeology Ireland* **46**, 8-12

Cooney, G., O'Sullivan, M. & Downey, L. (2006) *Repositioning Irish Archaeology in the Knowledge Society – Archaeology 2020*. A report by University College Dublin for the Heritage Council, 50-53

Cork County Council (2006) Guidance notes for the appraisal of historic gardens, demesnes, estates and their setting, Cork, pp. 4-19

CRDS (2001) Charleville to Newmarket 110 kV EIS – Cultural Heritage Report. Unpublished

Dempsey, G. (2012) The pitfields of Rathcroghan, Co Roscommon. *Archaeology Ireland* **99** (Spring 2012; volume 26 No. 1), 26-30.

De Valera, R. and O Nuallain, S. (1961) Survey of the megalithic tombs of Ireland. Dublin. Stationery Office

Department of Environment, Heritage and Local Government (2004a) Architectural Heritage Protection, Guidelines for Planning Authorities, Guidance on Part IV of the Planning and Development Act 2000. Dublin. Stationery Office.

Department of Arts, Heritage, Gaeltacht and the Islands (DoEHLG) (1999a) Framework and Principles for the Protection of the Archaeological Heritage, Dublin, Stationery Office.

DAHGI, (1999b), *Policy & Guidelines on Archaeological Excavation*. Dublin

DoEHLG (2006) Guidelines for Authors of Reports on Archaeological Excavations, Dublin, DoEHLG.

DoEHLG (2007) Archaeology in the Planning Process, Dublin, DoEHLG.

Doody, M. (1993) The Bruff aerial photographic survey. *Tipperary Historical Journal* (1993), 173-80

EirGrid (2007) Code of Practice in Relation to access to Land and/or Premises

EirGrid (2009) Grid25 Brochure – A strategy for the development of Ireland's electricity grid for a sustainable and competitive future

EirGrid (2010) Transmission Development Plan, Draft for Public Consultation

EirGrid (2012) Ecology guidelines for Electricity Transmission Projects – a standard approach to ecological impacts assessment of high voltage transmission projects

EirGrid (2012) EirGrid Environmental Report for Grid25

EirGrid (2012) Grid25 Approach to the development of electricity transmission lines, 4

English Heritage (2005) Wind Energy and the Historic Environment, London, 1-11

English Heritage (2011) The Setting of Heritage Assets, English Heritage Guidance, 5 para. 113

Eogan, J. (2009) 'Preface', in M McQuade, B Molloy and C Moriarty, *In the Shadow of the Galtees. Archaeological Excavation along the N8 Cashel to Mitchelstown Road Scheme*, xi-xv. NRA Scheme Monographs No. 4. National Roads Authority, Dublin

Eogan, J & Shee Twohig, E. (2011) 'Introduction' *Cois tSiúire – nine thousand years of human activity in the Lower Suir Valley. Archaeological Excavations on the N25 Waterford City Bypass*. NRA Scheme Monographs No. 8. National Roads Authority, Dublin, 14

ESBI (2008) Donegal 110 kV Project Environmental Impact Statement, Chapter 14, Cultural Heritage. Unpublished report, Dublin

Eurelectric (2003) *Public Acceptance for New Transmission Overhead Lines and Substations – Networks Committee*. Union of the Electricity Industry, 10

Faber Mauncell & Metoc (2007) *Scottish Marine Renewables SEA*. Environmental Report Section C SEA Assessment: Chapter C20 Onshore Grid Connection for Scottish Executive

Fenwick, J. and Parkes, M. (1997) Oweynagat, Rathcroghan, Co. Roscommon, and associated karst features. *Irish Speleology* **16**, 11-16.

Fenwick, J., Dowling, G., Schot, R. & Rogers, J. (2012) Crewbane souterrain and nearby archaeological features, Brugh na Bóinne, Slane, Co Meath. *Ríocht na Midhe* **XXIII**, 1-25.

Forest Service (2000) Forestry and archaeology guidelines

Government Publications Office (1997) *Archaeological inventory of County Offaly*. Archaeological Survey of Ireland. Dublin

Grogan, E. (2005) The North Munster Project, Volume 1: The later prehistoric landscape of south-east Clare. The Discovery Programme, Wordwell, Bray, 21-63

Grogan, E and Kilfeather, A. (1997) *Archaeological inventory of County Wicklow*. Dublin. Office of Public Works

Grogan, E, O'Donnell, L & Johnston, P. (2007) *The Bronze Age Landscapes of the Pipeline to the West: an integrated archaeological and environmental assessment*. Wordwell, Bray

Hanley, K. (2003) *The Role of the Project Archaeologist and the Code of Practice in Archaeology and the National Roads Authority*, Monograph Series No. 1, 25-32

Heritage Council, (2002), *Archaeology & Development: Guidelines for Good Practice for Developers*

Holford, W. (1959) Power production and transmission in the countryside: preserving amenities, paper presented to Royal Society of Arts, 25 November, London

Kirwan, S. (1998) 'Legislation on the protection of the archaeological heritage of the Republic of Ireland,' *The Irish heritage and environment directory*, comp. M. Deevy, Archaeology Ireland and the Heritage Council

McCarthy J. in the case of *Attorney General (McGarry) v Sligo County Council* (1991) 1 I.R. 99. (In relation to a proposal to operate a refuse dump within Carrowmore megalithic cemetery and also on the concept of a 'fallow area')

Marshall, R & Baxter, R. (2002) Strategic Routeing and Environmental Impact assessment for Overhead Electrical Transmission Lines. *Journal of Environmental Planning and Management*, 45 (5), 747-764

Moore D. (2003) Results of Archaeological Monitoring and Testing 110kV Power line from Castlebar-Cloon (Tuam). Prepared for ESBI/Balfour Beatty by Moore archaeological and Environmental Services Ltd. Unpublished report (Licence Numbers 02E1286, 02E1287, 02E1288, 02E1289, 02E1290, 02E1105, 02E1106 and 02E0956)

Moore Group (2002) Castlebar-Cloon 110kV Electricity Powerline – Archaeological assessment. Prepared for Balfour Beatty Group Ltd/ESB. Unpublished report.

Morahan L. (2002) Ringfort (CL067-040), site survey notes for the Archaeological Survey of Ireland

Mount, C. (2011) There are a lot more archaeological sites in the Republic of Ireland than we thought. *The Charles Mount Blog*, May 18, 2011. <http://charles-mount.ie/wp/?p=18>

National Grid Company (1992) Guidelines for the Routeing of New High Voltage Overhead Transmission Lines (Coventry, National Grid Company PLC)

National Monuments Service (2005) Code of Practice between the Minister Arts, Heritage, Gaeltacht and the Islands and the NRA in relation Archaeological Heritage

National Monuments Service (2009a) Code of Practice between the Minister of the Environment, Heritage and Local Government and EirGrid in relation to Archaeological Heritage

National Monuments Service (2009b) Summary of proposals to consolidate, revise and extend the National Monuments Acts, 1930 to 2004 and related enactments. Department of the Environment, Heritage & Local Government

National Monuments Service (2012) Code of Practice between the Deptment of Arts, Heritage and the Gaeltacht and Iarnód Éireann

National Monuments Service (2012) Code of Practice between the Deptment of Arts, Heritage and the Gaeltacht, the National Museum of Ireland and Bord na Móna

National Roads Authority (NRA), (2000) and the DAHGI, *Code of Practice agreed between the National Roads Authority and the Minister for Arts, Heritage, Gaeltacht and the Islands*.

NRA, (2005a) *Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes*.

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

NRA, (2005c) *Guidelines for the Testing and Mitigation of the Wetland Archaeological Heritage for National Road Schemes*.

NRA (2010) Project Management Guidelines

Newman C. (1997) *Tara - An Archaeological Survey*. Discovery Programme Monographs 2. Royal Irish Academy, Dublin, 196 - 206

O'Rourke, D. (2006) *Archaeology and roads: an historic opportunity* in Settlement, Industry and Ritual, Monograph Series No. 3, 1-6

O'Rourke, D. (2003) Archaeology and the National Roads Authority in *Archaeology and the National Roads Authority*, Monograph Series No. 1, 19-24

Phipps, G. and McClean, R. (2007) Sustainable management of historic heritage guidelines, discussion paper No. 7, windfarms and historic heritage for the New Zealand Historic Places Trust Pouhere Taonga, 12-17

Power, D. (1997) *Archaeological inventory of County Cork, Vol. III, Mid Cork*. Dublin. Archaeological Survey of Ireland

Sharma, B., Wait, G. & Darvill, T. (2003) *A Study of Monument Grading in the Republic of Ireland*, unpublished report by Fehily Timoney Gifford for the Heritage Council

Stout, G. (1998) 'The Archaeology of Ballymount Great County Dublin', *Dublin beyond the Pale*, ed. Conleth Manning. Dublin, 145-154

Stout, G. (2002) *Newgrange and the Bend of the Boyne*. Cork University Press, 2-17

Timoney, M. (2009) Sub-rectangular pits and pitfields in central north Roscommon. *Journal of the Roscommon Historical and Archaeological Society* **11**, 139-43.

Toal, C. (1995) *North Kerry Archaeological Survey*. Dingle. Brandon, 59 no 73 and no 74

Unterman McPhail Associates Heritage Resource Management Consultants (2008) Built heritage and cultural heritage landscapes environmental assessment report. Unpublished report Canada

Waddell, J. (1998) The prehistoric archaeology of Ireland. Galway University Press, 41 No. 46, 47

World Wide Web

Information in relation to estate houses and demesnes was examined on this website:

<http://www.buildingsofireland.com/Surveys/Gardens/>

Archaeological excavations were reviewed on this website: www.excavations.ie

The location of Recorded and Registered Monuments were examined on this website:

www.archaeology.ie

Townland names and place-names were reviewed on this website: www.logainm.ie

Ordnance survey mapping and aerial photographs were browsed on this website: www.osi.ie

Information in relation to archaeological excavations on recent road schemes was accessed through this website: www.nra.ie

Information in relation to demesnes was reviewed on this web site: www.landedestates.ie

Information in relation to aerial photography, recorded monuments and NIAH structures were reviewed on www.myplan.ie

Information on the rulings of the Scottish Executive on transmission projects and windfarms were reviewed on www.scotland.gov.uk

Relevant county councils web sites were reviewed in relation to archaeology, architectural heritage and cultural heritage information

APPENDIX A

OVERVIEW OF ELECTRICITY TRANSMISSION INFRASTRUCTURE, INCLUDING TYPICAL CONSTRUCTION METHODOLOGY

A1 Description of Typical Electricity Transmission Project Designs

The transmission network in Ireland comprises structures and overhead lines, underground cables and substations. When the need for a new circuit is identified in Ireland, EirGrid will consider all available solutions for the new circuit. This will include overhead line and underground cable solutions, considering both High Voltage Alternating Current (HVAC) and High Voltage Direct Current (HVDC) technology, as appropriate.

Factors which will influence the solution decision include technical, economic and environmental considerations. It is important to note that each project is different and EirGrid will determine potential technology solutions on a project-by-project basis. EirGrid will continue to keep technology developments under review and will consider new technologies as appropriate.

A1.1 Overhead Lines (OHL)

Transmission lines are generally supported on either wooden pole sets or steel lattice towers. Towers along a straight of the alignment are known as intermediate towers. Angle towers are used where a line changes direction and conductors are held under tension.

The type and height of structures required will vary according to the voltage of the overhead line, and the location and type of environment and terrain in which they are placed.

A1.2 Structure Design

For all new electricity transmission projects, efficient, appropriately placed and optimally designed structures are carefully considered and proposed. The design employed depends on the local environment, topography and technologies involved, and will vary from 110 kV, 220 kV or 400 kV, depending on the specific transmission need identified.

The spacing between structures depends on technical limitations and on the topography, particularly to ensure that conductors maintain a specific minimum clearance above the ground at all times.

Steel Lattice Tower Structures

The weight of conductors and characteristics of 220 kV and 400 kV lines require that they be supported exclusively on lattice steel structures (this also applies to angle towers along a 110 kV line). The three phases (conductors) of a circuit are carried in a horizontal plane.

Table A1: Key Design Features: Single Circuit 220 kV and 400 kV overhead line structures

Key Design Features	220 kV Indicative Range	400 kV Indicative Range
Height range	Depends on technical details of individual projects but generally between 20-40m	Depends on technical details of individual projects but generally between 20m -52m
Maximum range of width at ground level	6m to 12m	7m to 12m
Number of foundations per structure	4	4
Average span between towers	Approx. 320m (dependent on local topography)	Approx. 350 (dependent on local topography)



Example of a 400 kV intermediate tower design along the Dunstown-Moneypoint overhead line, Co Clare



Example of a 220 kV intermediate tower design along the Cashla – Flagford overhead line, Co Roscommon

Single Circuit 110 kV Overhead Lines

A 110 kV single circuit overhead line requires that conductors (and earth wires¹) are supported on a combination of steel lattice angle towers and double wood intermediate polesets.

The average span between polesets for a 110 kV single circuit alignment is approximately 180m; however, the actual span achievable depends on local topography. Again, the three phases of the circuit are carried in a horizontal plane.

Table A2: Key Design Features of Single Circuit 110 kV overhead line support structures

Key Design Features	110 kV Indicative Range
Height range (double wood polesets)	16m to 23m (incl. buried depth normally 2.3m)
Pole centres	5m
Number of foundations	2
Height range (steel angle towers)	18m to 24m
Maximum width at ground level	4m to 9.8m
Average span	180m



Example of a typical 110kV single-circuit double wood polesets with earthwire (Co Sligo)

On an alignment there may arise a very slight change in direction, and this may necessitate, in the case of a 110 kV single-circuit line, the use of a braced wood poleset, wherein the space between the polesets is reinforced with steel members.

¹ Lines running above the conductors which protect the conductors from lightning strike.



Braced double wood poleset

Double Circuit Overhead Lines

Overhead alignments can be configured as single circuit or double circuit (two separate circuits supported on a single structure). This generally only occurs where two single circuit lines are in close proximity (for example on approach to a substation), or where space is at a premium.

Double circuit alignments, including 110 kV overhead lines, always require to be supported by lattice steel towers. The average number of structures on a line is 3-4 per km depending on topography. In addition, the structures are higher, as each circuit must be carried in a vertical plane.



Typical 110 kV double circuit structures

A1.3 Construction of Overhead Lines

Overhead line construction typically follows a standard sequence of events comprising:

- Prepare access;
- Install tower foundations/Excavation;
- Erect towers or wood poles;
- Stringing of conductors;
- Reinstate tower sites and remove temporary accesses.

Prepare Access

It is preferable to have vehicular access to every tower site for foundation excavation, concrete delivery and a crane to erect towers. With wood pole construction, (on 110 kV single circuits) a crane is not usually required, as these are normally erected with a digger using a lifting arm.

Access can take various forms and is dependent on ground conditions. In poorer conditions, more complex access works are required which can vary from the laying of bog mats, or laying temporary wooden matting, to installing crushed stone roads. Some of this work may entail removal of topsoil.

Access routes may require to be constructed for both the construction and maintenance of the transmission line, and may be temporary or permanent.

Every effort is made to cause least disturbance to landowners and local residents, and to cause the least potential environmental impact during construction. As a result, the most direct access route to a tower installation may not always be the most appropriate.



Example of a newly built access route for a transmission project, Co. Donegal

Install Tower Foundations/Excavation

Tower foundations are typically 2–4m deep with excavation carried out by mechanical excavator. Excavations are set out specifically for the type of tower and the type of foundation required for each specific site.

A larger footing may be required in the case of weak soils. Pile foundations may be required in the case of deep bog. In the case of rock being encountered at shallow depths, reduced footing size foundations may be required.

Prior to excavation, the foundations for each tower site will be securely fenced off to ensure the safety of members of the public and livestock. Tower stubs (the lower part of the tower leg) are concreted into the ground. Once the concrete has been poured and cured, the excavation is back-filled using the original material in layers. Surplus material is removed from site.

The excavation required for a wooden poleset is typically 1.5m-2m x 3m x 2.3m deep; no concrete foundations are required for polesets in normal ground conditions. Installation time is approximately two per day. The average foundation size for a braced poleset is 9.3m x 3.1m x 3.2m deep.

In addition to the excavation required for the poleset itself, where ground conditions dictate, stay lines may be required. This generally involves excavation of four trenches (approximately 2m x 2m x 1.8–2m deep) at a distance from the poleset. The installation of stay wires expands the area of disturbance associated with the erecting a poleset.



Stay lines in place, Donegal 110 kV Project

Concrete foundations are required for all steel towers. Foundation size and type is dependent on ground conditions and tower type, but is typically 4m x 4m x 3.1m for each foundation pad. The base installation time is approximately one week.



110kV angle towers at Srananagh Station with exposed substructures

For all transmission lines with earth wires, there is a requirement to install an earth ring or mat at the base of the structure to ground the structure for safety reasons. The ground around the base of structures is excavated after conductors and earthwires are in place and the earth ring is installed.



Earth ring on Donegal 110kV Project

Erect Towers or Wood Poles

Materials required for construction are transported around the site by general purpose cross country vehicles with a lifting device. Excavators are generally of the tracked type to reduce likely damage to and compaction of the ground. In addition a temporary hard standing may be required for machinery and this may require the removal of topsoil. Materials are delivered to site storage/assembly areas by conventional road transport and then transferred to sites.

Tower erection can generally commence two weeks after the foundations have been cast. Tower steelwork is usually delivered to site and assembled on site.



Installation of tower using a derrick pole at the base



Construction of wooden poleset support structure for Donegal 110 kV Project (Binbane – Letterkenny)

Stringing of conductors

Once angle towers are erected, conductor stringing can commence, installing conductors from angle tower to angle tower via the line intermediate structures. Conductor drums are set up at one end of the straight with special conductor stringing machinery, and pulled from one end to the other.



Stringing Machine



Conductor stringing equipment

Reinstate tower sites and remove temporary accesses

The disturbed ground around a tower or poleset location is made good, and all temporary access materials generally removed.

A1.4 Line Uprating and Refurbishment

In general a transmission line requires little maintenance. It is periodically inspected to identify any unacceptable deterioration of components so that they can be replaced as necessary. A more detailed condition assessment on a line is usually carried out when it is approximately 35 years old.

The majority of the existing transmission grid was constructed after 1960; the majority of those lines constructed prior to 1960 have already been refurbished. There is an on-going programme of line refurbishment concentrating on older lines.

Refurbishment projects are condition based, and once a line has been identified for refurbishment, consideration is given to the potential opportunity to upgrade its carrying capacity or thermal rating. This might involve replacing existing conductors with modern conductors which, while having effectively the same diameter, can carry significantly greater amounts of electricity.

Often the additional weight of these replacement conductors means associated replacement of support structures with stronger structures. Where structures require replacement during a line upgrade or refurbishment, additional excavation may be required particularly where angle towers or structures require replacement. In general they are replaced within the footprint of the original structure.

Insulators and conductors are normally replaced after about 40 years, and towers are painted every 15-20 years or as necessary.

A1.5 Underground Cabling (UGC)

High voltage (HV) circuits can only be laid underground using special HV cables designed specifically for underground use. The conductors in underground HV cables must be heavily insulated to avoid a short circuit between the conductor and the ground around the cable.

Table A3: Key Design Features: Underground Cabling

Key Design Features	HV Cable (typical dimensions)
Cable Trenches	c.0.6m wide-1.25m deep for a 110 kV trench, c. 1.1m wide x 1.25m deep for 220 kV and 400 kV for a single cable
Joint Bays	6m long, 2.5m wide and 1.8m deep
Excavation trench for Joint Bay	7m long, 3m wide and 2m deep
Average span between joint bays	500m-700m
Directional Drill entry and exit pits	1m x 1m x 2m

The cable is installed directly into the ground in an excavated trench. The majority of high voltage cable routes are located along public roads and open spaces. It is very unusual for a cable route to cross private open ground but this may be the case on occasion. The civil contractor will scan the ground using a cable avoidance tool (CAT), carry out a visual inspection of existing services and compare the information with the utility service records which they will have obtained from the various service providers in advance. If any previously unidentified services are discovered the site engineer will adjust the cable route accordingly.



Typical 110kV Trench Excavation (Ducts in Trefoil Formation)

The overall installation of a cable route over a large distance is broken down into sections of cable that are connected using a cable joint. Cable joints are installed in joint bays which are typically concrete structures buried underground, occurring generally every 500–700m along an alignment, and ranging in size up to 6m long, 2.5m wide and 1.8m deep.



Typical Joint Bay Construction Adjacent to Public Road

If the cable was installed directly in the ground the entire trench from joint bay to joint bay must be fully excavated. The advantage with installing cable in pre-laid ducts is that only a short section of cable trench, up to 100m is open at any time. This helps to minimise the impact on the local residents and minimise traffic impact at any given time.



Typical HV Cable Installation

Once installed, the road surface is reinstated. Where a cable route is in an open area, it is returned to agricultural/grassland use. Where a cable passes through forested land the route is not replanted with trees to prevent any damage to the cable by tree root growth.



Re-growth following underground cable construction on agricultural land

A1.6 Substations

Substations connect two or more transmission lines; they take the electricity from the transmission lines and transform high to low voltage, or vice versa. They contain various electrical equipment, including voltage switches, transformers, protection equipment, and associated lines and cabling.

The siting of a substation depends on topography; the ground must be suitable to meet technical standards. With regard to earthing requirements and soil stability, substations are usually constructed on reasonably level ground, in areas that are not liable to flooding or crossed by significant watercourses.

A substation site is normally future proofed with the capability to be extended if the need arises.

Substations can take two forms:

An Air Insulated Switchgear (AIS) substation is where the electrical equipment infrastructure is primarily installed outdoors, with the use of natural air as an insulation between circuits. This option requires a relatively large compound footprint.



Srananagh 220kV/110kV substation, Co Sligo, example of a typical outdoor AIS substation

A Gas Insulated Switchgear (GIS) substation, is where gas (Sulphur Hexafluoride – SF₆) is used as the insulation between circuits. This requires the electrical equipment to be contained internally, in buildings of some 11–13m over ground. This allows for a significantly smaller substation footprint.

Both options require the associated provision of access roads off and onto the public road network and the provision of associated electrical equipment and infrastructure (including underground cables), as well as ancillary waste water treatment facilities and other site development and landscaping works. Both are therefore significant civil engineering projects.



Example of a typical indoor GIS substation, Co Limerick

APPENDIX B

**LICENCED INVESTIGATIONS FOR
ELECTRICITY PROJECTS 1972–2010**

Licensed investigations for electricity projects 1972–2010

The following information is taken from the Excavations Bulletins (www.excavations.ie). Each entry is ordered by year (from most recent) and follows the general format of:

- **County**
- **Entry No into the excavation record**
- **Townland/location details**
- **Site type/ type of investigation**
- **NGR**
- **RMP/SMR Reference (where applicable)**
- **Licence Number**
- **Description**
- **Licence holder and address**

2010

Galway

312. Various townlands Dalton to Galway 110 kV powerline

Monitoring

143072 228689 – 138199 238038

10E0038

Monitoring was requested of two 110 kV ESB overhead power lines linking Cashla 220kV substation, which is located c. 12km east of Galway City, with the existing Dalton-Galway 110kV line at Barravilla and Baile Chlair near Claregalway. A total of 33 angle towers and 85 polesets were excavated along the route, which predominately crossed fields of lush green pasture. The footings of all the angle towers and a small sample of polesets were required to be monitored. There were four footings per angle tower with each being 3.3m² or 2.3m² in shape depending upon the type of angle tower used.

The route is approximately 22km long and can be divided into three areas:

- Barrettspark to Lisheenavalla (tower/pole numbers 1-16)
- Lisheenavalla to Barravilla (tower/pole numbers 17-81)
- Lisheenavalla to Baile Chlair (tower/pole numbers 82-118)

Barrettspark to Lisheenavalla (numbers 1-16)

This 2.9km section of the route, which crossed townlands Barrettspark, Moor, Cashla, and Lisheenavalla, was made up entirely of angle towers because two lines were being carried from the Cashla 220kV substation to Lisheenavalla. Nothing of archaeological potential was identified in the angle tower footings. The topsoil at these towers was usually a dark brown sandy silt or clayey silt up to 0.4m deep while the subsoil was a light grey sandy gravel.

A previously unrecorded ring barrow was identified in the centre of the same field as angle tower 15 in Lisheenavalla, about 40m to the south-west of the tower. The barrow is not shown on the first and second edition OS mapping but is visible on 1995 and later aerial photographs. A gas pipeline which also passes through the field can be seen to kink around the barrow on the 2005 aerial photograph. The barrow measures 14m east-west x 16m. It comprises a small low mound 9.5m x 11.5m defined by a 1.5m-wide ditch with a 3m-wide low surrounding bank. The top of the bank is 0.3m above the interior area. A possible second monument lies c. 60m south-east of the barrow in the same field. It is covered in long grass and may simply be a pond that measures 6m east-west x 7m with an interior depth of

0.6m, but its proximity to the barrow raises the possibility that it is also archaeological. The field in which the barrow is located is a low and flat and there are good views in all directions.

An unusual stone structure was identified to the west of angle tower 6 in Cashla. It measured 4m north-south x 4.5m x 2.7m high and is depicted on the second but not the first edition OS map. It was built above the intersection of four field boundaries. It resembles an elaborate crossing point with four sets of stone steps leading up to a viewing platform or watchtower.

Lisheenavalla to Barravilla (numbers 17-81)

The two lines split at Lisheenavalla and headed north-east to Barravilla and south-west to Baile Chlair. The single line heading to Barravilla ran from Lisheenavalla into Cregcarragh and Ballymoneen before turning north in Grange East. It then crossed into Coolaran where it met the River Clare. The line crossed the river into Cahernashilleeny. It ran west through Lackagh Beg and north-west into Cnoc Tua Mor and Knockdoebeg West. From there it crossed the main Galway-Gort road and continued west through An Caran Carraghy, Carheeney, Baunmore, and Barravilla, where it joined the existing Dalton-Galway 110kv line.

Nine angle towers (22, 24, 31, 42, 52, 54, 62, 75 and 81) and nine polesets located on either side of the River Clare (38-41 and 43-47) in an area described as having moderate to high archaeological potential in the EIS were monitored in these townlands. Nothing of archaeological potential was discovered. The topsoil composition varied in the areas. It was c. 0.4m deep near the river and c. 0.1-0.2m elsewhere. The subsoil was typically a sticky grey clay.

Lisheenavalla to Baile Chlair (numbers 82-118)

The single line heading from Lisheenavalla to Baile Chlair crossed into Islandmore and An Chathair Laith, where it turned north-west into Gort an tSleibe, whose northern border is adjacent to the River Clare. The line crossed the river into Na Croisíní, ran north-west through Cill Torrog, Cinn Uisce and into Baile Chlair, where it joined up with the existing Dalton-Galway 110kv line.

Monitoring of eight angle towers (82, 88, 92, 96, 98, 113, 116 and 118) and a small sample of polesets in these townlands yielded no archaeological remains. Topsoil varied in composition and was on average 0.4m deep. Subsoil was typically a pale greyish-yellow sandy gravel.

Richard Jennings, Kilkenny Archaeology, 1 The Spires, Dean Street, Kilkenny.

Mayo

478. Ballynew

Ballynew, vicinity of ecclesiastical remains

Medieval burials

10E0150

The site at Ballynew, Co. Mayo was excavated as part of an ESB Networks programme to lay cables. The route of the cables was located on a narrow winding tertiary road immediately north of the N5, in the townland of Ballynew, located c. 3km north-east of Castlebar. A section of the road where cables were to be laid was considered archaeologically sensitive due to its proximity to MA078-006001 Church and graveyard and associated MA078-006002 Ritual Site (Holy Well). Previous development work (Castlebar main drainage scheme, *Excavations 2006*, No. 1418, 05E1238) in the vicinity of this complex had unearthed human and animal remains; no excavation was carried out at the time as scheme was diverted slightly to the north and the pipe route was bored through bedrock.

During this excavation in May and June of 2010 an area measuring c. 12m in length and 1.85m in width was hand excavated below the surface of the existing road. Six skeletons in varying states of preservation were excavated to the north of the graveyard near the bend of the road. Radiocarbon dates obtained from SK4 returned a date range of Cal 1150-1270 AD, and from SK3 the date range fell between Cal 1270-1320 AD (52.6% probability) and 1350-1400AD (42.8% probability).

Angela Wallace, Connacht Archaeological Services, 19 The Meadows, Enniscrone, Co. Sligo.

Mayo

Carrownagloch

No archaeological significance

136105 319500

10E0476

The development involved the construction of a 5km overhead electricity line on a combination of wooden poles and steel towers. It was agreed in consultation with Mr. Gerry Walsh, Mayo County Council Archaeologist, that monitoring of all groundworks should be carried out in Carrownagloch townland between the northern end of a north-east/south-west oriented bog road and a north-west/south-east oriented Third Class road. This area of land take measured approximately 400m in length north-east/south-west and was considered appropriate for monitoring due to the presence of

MA031-049, the extensive remains of east-west oriented pre-bog walls, located approximately 140m west, at its nearest point, of the proposed development area.

Fieldwork took place intermittently between 9 May and 16 June 2011, and in total took 12.5 days to complete. No archaeological features or artefacts were revealed as a result of monitoring.

Dermot Nelis, Dublin 8.

Dublin & Meath

509. HIGH-VOLTAGE EAST-WEST INTERCONNECTOR PROJECT – Meath, various townlands

East-West Interconnector Project – Dublin & Meath Streams

Monitoring

10E155

The High Voltage Cable – East-West Interconnector Project (HVC EWIP) comprises the laying of a high voltage direct current East-West Interconnector between Ireland and Wales, consisting of

- (a) a sub-sea cable installed beneath the Irish seabed from the 12 nautical mile-limit to an underground transition joint to be located in the car park at North Beach Rush, Co. Dublin and
- (b) an underground high voltage direct current cable section from the underground transition joint in the said car park to an existing 400kV station in the townland of Woodland, Co. Meath (total 44.2km).
- (c) The development also comprises the construction of a new converter station located adjacent to the existing ESB 400kV substation at Woodland, Co. Meath and a 400kV cable bay to be constructed at the existing Woodland substation and all associated works.

In general, the two-power cables will be installed in ducts and laid in a trench c. 1.2m deep and c. 1m wide, with a third duct containing a fibre optic cable, primarily to control the operation of the Interconnector. Such works will be largely undertaken along roads/grass verges and occasionally within greenfield areas in the following townlands of Co. Meath: Rath, Cookstown, Hammondstown, Crickstown, Kilbrew, Loughlinstown, Bodeen, Cabinhill, Flemingstown, Twentypark, Lagore Little, Brownstown, Ballymore, Bradystown, Elgarstown, Curkeen, Commons, Wilkinstown, Powderlough, Raynestown, Rathregan, Portan, Ribstown and Woodland.

All works within greenfield areas or within 50m of Recorded Monuments require full-time monitoring, while all other works along roads are subject to occasional monitoring. Works in County Meath commenced in early October 2010. To date, a number of post-medieval pottery sherds and clay pipe stems have been recovered in trench excavations along roads.

Cable-trench excavations are scheduled to continue until early summer 2011 and topsoil stripping associated with the Converter Station at Woodlands is scheduled to commence in March 2011.

Martin E. Byrne, Byrne Mullins & Associates, 7 Cnoc Na Greine Square, Kilcullen, Co. Kildare.

2009

Mayo

595. Bunnyconnellan East

No archaeological significance

135326 317829

09E284

The development will involve the construction of a new 110kv to 38kv transformer station and associated diversion of an existing 110kv transmission line entailing the placement of four 110kv steel towers of maximum height of 18m. The excavation of six test trenches located throughout the development area failed to reveal any archaeological features or artefacts. On all occasions topsoil directly sealed geologically deposited strata. In total 373m² of test trenches were excavated within the 5,450m² site, giving an approximate 6.85% test-trenching sample of the development area.

Dermot Nelis, 36 Fingal Street, Dublin 8.

Mayo

597. Carrowbeg-Castlebar 110kV line

Monitoring

09E0309

Monitoring was carried out during the construction of a 110kV single circuit transmission line comprising c. 22km in Co. Mayo. The route of the transmission line runs from Carrowbeg 110kV station, located in the townland of Gortaroe to the north-east of Westport, to a cable interface tower in the townland of Cappagh, north of Castlebar, via fifteen intermediate angle-towers. Intermediate

poleset supports between and linking these angle-towers were also included in the groundworks for this scheme. Monitoring was carried out during excavation of the bases of each of the fifteen angle towers and also in the areas where intermediate polesets were located in close proximity to aerial photographic anomalies identified in the Cultural Heritage report. Monitoring of works was also undertaken in the vicinity of ecclesiastical remains MA077-018 in Gortnaclashagh townland. No archaeological finds or features were uncovered during the course of monitoring on this scheme.
Angela Wallace and Micheal Forde, Connacht Archaeological Services, Sligo.

Galway**403. River Corrib, Galway****No archaeological significance****529302 726344****GA 082-081****08E1002**

Testing was carried out at the site of a proposed power-cable passage adjacent to Terryland Mansion at Terryland, Co. Galway, in March 2009. The works were carried out in advance of a major regional electricity network enhancement programme involving the installation of a new underground cable system between Galway 110kv substation and Salthill 38kv substation. The proposed route for the cable involved crossing the River Corrib between the townlands of Terryland and Newcastle adjacent to Terryland Mansion. The scheme proposed to directionally-drill the cable route with a launch and recovery pit in the townlands of Terryland and Newcastle respectively.

The programme of testing excavated 120m of test-trenches along the proposed cable route and its associated launch pit. Testing noted that the area was greatly disturbed, with concrete, metal, steel and other modern materials noted in the trenches. It also recorded that, in many places, boulder clay was very close to the surface, with only a small covering of topsoil or mixed ground. The testing regime did not record the presence of any archaeological materials or features along the proposed route. Based on the results of the programme of testing, it would appear that there are no archaeological remains long the route of the cable.

Billy Quinn, Moore Archaeological & Environmental Services Ltd. Galway.**Galway****413. Oranmore Bay****Assessment****09D18; 09R66**

Moore Marine was commissioned by ESBI Networks to carry out an underwater impact assessment of a power-cable route across Oranmore Bay from the townland of Roscam to Rinville in Co Galway. The route passed directly adjacent to an intertidal boundary wall identified during the field survey, and GA094-075 (castle). The cable route then travelled across a flat barren muddy intertidal zone to Roscam Point. The field survey recorded the presence of a series of agricultural lazy-bed ridge and furrows at this point.

No archaeological material was noted during the dive survey of the cable route across the mouth of Oranmore Bay. It was recorded that there was a mixed seabed varying from bedrock and mobile shell to sand and then back to mobile sand and shell. The southern shore of the cable route was comprised of a boulder and cobble beach flanked by a clay sea cliff. There were no archaeological finds or features noted in this area.

Billy Quinn, Moore Archaeological & Environmental Services Ltd. Galway.**Cork****133. Coolmountain****No archaeological significance****117781 600590****CO093-011**

Unlicensed monitoring was carried out on 23 September 2009 during the installation of an ESB connection within the zone of archaeological potential of a disused children's burial ground (kill) at Coolmountain, Inchigeela. The excavation of two trenches, required for earth cables connected to a transformer, was monitored. Between c.01m and c.0.5m of a grey/brown sandy topsoil overlay a stony-orange/yellow boulder clay. No archaeological features or finds were noted.

Tony Miller, Co Cork.**Clare**

**84. River Shannon, Carrowdotia South, Co Clare and Kilpaddoge/Coolnanonnagh, Co Kerry
Seabed and intertidal foreshore
104278 151202 (Carrowdotia South) and 104752 148456 (Kilpaddoge/ Coolnanonnagh) 09D061;
09R155**

Underwater and intertidal assessment took place of two cable landfall locations associated with the Tarbert to Moneypoint 220kV submarine cable project. The proposed submarine cable (route option 3) will cross the River Shannon estuary between the townlands of Carrowdotia South, Co Clare and the townlands of Kilpaddoge and Coolnanonnagh, Co Kerry.

The assessment included the systematic visual inspection of both inter-tidal and sub-tidal elements at each landfall, extending across a minimum of 400m east-west by 150m area at each location. In addition, the assessment included a metal-detection survey of a sample seabed area at the Tarbert landfall site. A detailed description of foreshore/seabed topography was made, supplemented by photographic record. No archaeologically significant materials were encountered as part of the assessment at either landfall site.

Rex Bangerter, ADCO, Kilkenny.

Dublin

**Citywest Golfcourse, Saggart
09E0222**

Work was undertaken for ESB networks. There is no further information on this investigation.

Stephen Johnston, Arch-Tech Ltd Dublin 2.

Dublin

322. Phoenix Park

Post Medieval

31010 23610, 31105 23550

DU018-007 (02-04, 14)

08E739 ext

Excavation for the insertion of two sections of ESB cable within the Phoenix Park was monitored. A French drain was identified in the first section to the rear of the Ordnance Survey office buildings. The depth of topsoil along Section 2 was 0.35-0.6m. a series of late 18th/19th century features were exposed within the grounds of Ashtown Castle and a deposit of building rubble uncovered below the road surface within the castle grounds probably represents the demolished remains of Ashtown Lodge. A 19th-century stone culvert was uncovered c.5.5m to the north of Chesterfield Road and 0.4m below present ground level.

A cobbled surface c. 3m long was located 6m from the eastern wall of the southern building of the visitor centre within the grounds of Ashtown Castle. The cobbles lay c.0.065-0.85m below the existing ground surface and may have been associated with the castle or more likely with the 18th century lodge. A section of intact wall foundations of the lodge was located between 38m and 44m to the south-west of the castle. This north-south running wall foundation was constructed of randomly coursed brick and limestone bonded with mortar and was 0.4m high. Building rubble from the lodge was also uncovered in this area.

A redundant east-west orientated stone drain was uncovered 11.2m to the north of the northern gate into the grounds of Ashtown Castle. The drain was constructed of brick, stone and slate bonded with mortar. It was 0.35m wide and was uncovered 0.55m below present ground level.

Melanie McQuade, MGL, Dublin 2.

Dublin

324. Dublin Zoo, Phoenix Park

No archaeological significance

313083 235044

09E310

Monitoring was required as a condition to a grant of planning. The site is located in the townland of St James, which is located in the centre of the Phoenix Park in an area known locally as the 'Nine Acres'. The development is located in the current services yard of Dublin Zoo; the proposed ESB substation and new access point are in the southeastern corner of this yard. The ducting will run across the services area. Currently the site consists of a series of modern buildings and a large carpark, as well as a number of concrete pad/buildings foundations, temporary structures, light sheds and landscaped and flower-bed areas.

There were a total of eight slit-trenches excavated, all within the services area. No archaeological features were identified and no new areas of archaeological potential were found.

Aisling Collins, CRDS, Dublin 14.

Dublin

359. Mountain View, Stepside

No archaeological significance

09E181

Monitoring was carried out on the excavation of an area set aside as a foundation for a new electricity compound in June 2009 on behalf of ESBI. The excavation work was carried out by Bowen Ltd, building contractors. The site was situated in what was the Mountain View pitch and putt course in Stepside. A haul road and excavation trench for placing the 220kV cable underground was previously monitored by the author on behalf of Park Development Ltd, who were contracted to carry out these works. The excavated area measured 18m by 27m, largely comprising the removal of topsoil only. There were no archaeological features noted on the site.

Neil O'Flanagan, Dublin 11.

Longford

Various

Finnea to Edgeworthstown

09E0087

There is no further information on this investigation.

Ros Ó Maoldúin, ADS, Dublin 2.

2008

Cork

2008:150

Aghada Power Station, Aghada

Seabed; no archaeological significance

183469 064962 to 183241 065349

08E0047; 08D006; 08R012

Monitoring of the excavation of a marine pipeline trench and intake apron was undertaken adjacent to Aghada Power Generation Plant, Aghada, Co. Cork. These in-water constructions are part of the extension/upgrading works to the power plant facility and include the provision of an outfall pipeline to discharge cooling-water from the plant turbine and dredging an intake apron to provide coolant to the turbine. The outfall pipeline extends c. 450m from the existing shoreline (north-west/south-east orientation) and a pipe-trench was dredged to accommodate a 2m-diameter outfall pipe. The dredged footprint for the trench was 39m in width, with maximum slopes graded at a ratio of 1:6 (dependent on material encountered), dropping to a base width of 3m. The trench was backfilled with dredged material. The outfall pipe terminates at a rising diffuser head, above which a maintenance platform has been constructed to allow maintenance access to the diffuser. A 31m (east-west) by 34m area of seabed was dredged to a depth of 3m to accommodate the intake pipe. The dredging process was undertaken by backhoe dredger, using differential GPS, to allow accurate excavation of material at both locations.

A pre-construction assessment of the pipeline route and intake location was undertaken by ADCO Ltd. in June 2004 (Excavations 2004, No. 184, 04D011, 04R038). No archaeologically significant material, structures, or deposits were encountered as part of this assessment.

Monitoring of pipeline dredging was undertaken on a 14-hour basis on 1–7 February 2008, changing to a 24-hour programme on 8–14 February. The intake apron was dredged on 24 March and 2–3 April 2008. It was monitored on a 12-hour basis.

The removal of all seabed material was monitored. Seabed deposits were largely sterile and very little man-made material was observed as part of the monitoring process. The seabed was primarily composed of a grey silty clay deposit with frequent angular gravel and oyster shell inclusions. Across the south-eastern extent of the dredging works the seabed composition changed to a deposit composed of angular gravel and rock fragments, material believed to be overspill from land reclamation that has taken place at Aghada Power Plant. Only one archaeologically significant object, a large iron cannon ball, was encountered during the monitoring programme. The cannon ball is

believed to be an isolated find and, due to its size, is thought to be associated with land-based artillery rather than shipboard cannon.

Rex Bangerter, The Archaeological Diving Company Ltd, Brehon House, Castlecomer, Co. Kilkenny.

Dublin

2008:467

War Memorial Gardens, Islandbridge

Burial

312592 234167

08E0693

Excavation of a trench for an electricity cable uncovered an iron sword and spearhead at the War Memorial Gardens at Islandbridge, Dublin. The artefacts, both of Scandinavian type, were retrieved from the spoil by a construction worker and subsequently reported to the National Museum. Bone had also apparently been visible in the trench in the vicinity of the sword but was not removed. A small cutting was opened for the purposes of retrieving the disturbed human remains and any other finds which may have been associated with the burial. The burial, apparently oriented approximately north-south, had been heavily disturbed and pieces of disarticulated bone were found throughout the backfill of the trench. A small portion of an in situ inhumation burial was discovered at the base of the trench. It had also been badly damaged by a wall which was built on top of it some ten years ago. Only portions of the vertebral column, ribs and one femur were found in situ. A copper-alloy plain-ringed loop-headed ringed pin was discovered in the area of the upper ribs, and a possible scale pan and pointer were also found in this area, but not in situ.

Maeve Sikora, National Museum of Ireland, Kildare Street, Dublin 2.

Offaly

2008:1010

Cushaling

No archaeological significance

261090 226890

08E0884

Monitoring of alterations to the existing 110kv electrical transformer station at Ballykillen, Edenderry Road, Co. Offaly, was undertaken. The development area was located 600m south-east of c. 100 archaeological sites identified during the Peatland Survey of 2002. The stripping of the current hardcore surface followed by the excavation of a number of foundation pads for electrical structures within the existing substation was monitored. The area had been heavily disturbed and nothing of archaeological significance was noted.

Cóilín Ó Drisceoil, Kilkenny Archaeology, Rothe House, Kilkenny.

2007

Dublin

2007:522

St John's Road, Kilmainham

No archaeological significance

DU018-020(285, 286)

02E0067 ext.

A site immediately to the north of the walled garden of Kilmainham's Royal Hospital was to be the location for an ESB substation. Monitored ground clearance showed that there was considerable disturbance from a late building in this area. No archaeological deposits were present.

Claire Walsh, 27 Coulson Avenue, Dublin 6.

Dublin

2007:546

Scribblestown and Pelletstown

Post-medieval and industrial mill-race

31125 23780

07E0756

A programme of monitoring, excavation and survey of a mill-race on the southern side of the Tolka

River in Dublin 15 was undertaken in advance of ESBI works in the area. The ESBI groundworks were situated just west of the zone of constraint of the site of a castle at Scribblestown (DU014–074); however, no material associated with the castle was identified during the archaeological works, and no material of medieval date was encountered.

The majority of the archaeological work was focused on a mill-race on the south bank of the Tolka River, running westwards to Cardiffs Bridge. Cartographic and historical analysis of the mill-race demonstrated that it had been in use from the medieval period to the 19th century. A full field survey of the mill-race was carried out. The eastern part of the mill-race had been constructed in the medieval period and powered mills that had been located to the south of Cardiffs Bridge. This part of the mill-race was very disturbed, as it had been extensively modified in later times.

An excavation took place at the western end of part of the mill-race associated with a 19th-century ironworks, located again at Cardiffs Bridge. This later mill-race was over 1km long and had led to a mill-pool near the ironworks complex. Parts of the mill-race had been constructed from masonry and at least three phases of 18th–19th-century construction were identified. A number of sluices and gates along the course of the mill-race were mapped, and one of these was excavated. One unusual discovery was of discarded hearth cakes at each of the sluice-gate locations. These are the waste from small-scale ironworking and their presence suggests that the iron elements of the mill-race sluice gates may have been manufactured on site.

Antoine Giacometti, Arch-Tech Ltd, 32 Fitzwilliam Place, Dublin 2.

Tipperary

2007:1594

Old Church Street, Cahir

Adjacent to church

20497 12493

TS075–048

07E0148

Limited groundworks were monitored at Old Church Street, Cahir, as part of laying an ESB cable. In the course of laying the cable the building contractors encountered a small quantity of disarticulated bones. By the time of the discovery of the bones almost all of the groundworks had been completed. The site was of potential archaeological interest due to it being located immediately beside the east boundary wall of St Mary's parish medieval church and graveyard.

The area of groundworks monitored measured 1.2m by 0.35m, which was undertaken manually. No trace of human remains was uncovered. However, the semi-articulated remains of a dog were uncovered. This find was not surprising, as the area had previously been used as a dog pound.

Mary Henry, Mary Henry Archaeological Services Ltd, 17 Staunton Row, Clonmel, Co. Tipperary.

Wexford

2007:1965

Great Island

No archaeological significance

302900 122300

07E0941

Testing was carried out at this site in response to planning conditions. No features or deposits of archaeological significance were uncovered.

Emmet Stafford, Stafford McLoughlin Archaeology, Primrose Cottage, Park, Bree, Enniscorthy, Co. Wexford.

2006

Laois

2006:1176

Oldglass

Battle site

234074 179360

R0030

A metal-detection survey was carried out in the townland of Oldglass on Contract 1 of the M7 Portlaoise to Castletown/M8 Portlaoise to Cullahill motorway scheme. The site in question is known as

Ballina-ghowl ('the town at the river fork') and is the reputed location of a battle fought in the 12th century. The site is referred to on the OS maps as the location of a massive burial site, apparently covering twelve acres (LA028-108(01)). Burial evidence was found here during the erection of ESB poles in the 1970s. As test-trenching was not permitted at this site due to the presence of badger setts, a metal-detection survey was undertaken. It was carried out in two gardens, a road verge and an adjoining field to ascertain the presence or absence of metal objects that may have been deposited in the area in antiquity or in the recent past.

The survey consisted of transects, 2m in width, that extended for the length of the fields. The location of each findspot on the grid was recorded using Irish national grid coordinates to an accuracy of 0.5m or better using GPS equipment. An absence of metal objects in the surveyed area was noted, with the exception of some metal readings in the grass verge. Test-trenching will be carried out at this location at some future date when the badger setts are removed.

Deirdre Murphy, Archaeological Consultancy Services Ltd, Unit 21, Boyne Business Park, Greenhills, Drogheda, Co. Louth.

Mayo

2006:1412

Bracklagh

No archaeological significance

14879 29989

MA063-020

06E1166

Pre-development testing was carried out on the site of an existing ESB substation at Bracklagh, Co. Mayo, on 8 December 2006. The development site is located immediately north-west of an enclosure which seems likely to be a cashel. The stone revetment is evident only on the west side of the monument, where it has been maintained as part of a boundary wall. Testing comprised the excavation of four trenches on the development footprint. Results from testing showed some modern disturbance to an otherwise natural stratigraphy. The topsoil had an average thickness of 0.35m and overlay orange clay with gravel inclusions. No archaeological material was uncovered.

Dominic Delany, Dominic Delany & Associates, Unit 3, Howley Court, Oranmore, Co. Galway.

Roscommon

2006:1737

Knockadoobrusna

No archaeological significance

18053 30032

RO006-118

06E0297

Monitoring works were undertaken in Knockadoobrusna townland, c. 2km south of Boyle. Limited groundworks were undertaken to facilitate the erection of a 26m mobile phone communication tower within an existing telecommunications compound. A trench was dug to lay an ESB duct from the compound to a nearby ESB pole. The compound is within the constraint area of a large archaeological complex comprising two barrows, a possible barrow, a ring-barrow, two henges, two enclosures and a field bank.

No archaeological remains were encountered in the course of monitoring the groundworks. Much of the new compound was positioned on an existing access trackway in an area that had been previously disturbed. The only feature found in the trench for the ESB ducting was the remains of a field boundary.

Mary Henry, Mary Henry Archaeological Services Ltd, 17 Staunton Row, Clonmel, Co. Tipperary.

2005

Cork

2005:174

BALLYHOOLY

No archaeological significance

17238 09986

05E0707

This project involved the monitoring of the excavation of the foundation bases for eight ESB poles,

each measuring 1m² in plan, in a number of fields to the north of Ballyhooly village. The fields to be impacted on by the poles were relatively flat and were under tillage at the time of monitoring. There were no archaeological artefacts or features uncovered in any of the foundation pits.
Tony Cummins, for Sheila Lane & Associates, Deanrock Business Park, Togher, Cork.

Cork**2005:259****KILBROGAN****No archaeological significance****14913 05616****SMR 110:31****05E0578**

Groundworks for the construction of a new entrance to an ESB communications site at Kilbrogan, Bandon, which is near a graveyard, was monitored. No archaeological remains were found in the course of monitoring works.

Mary Henry, Mary Henry Archaeological Services Ltd, 17 Staunton Row, Clonmel, Co. Tipperary.

Dublin**2005:484****POTTERY ROAD 110KV GSI STATION, DÚN LAOGHAIRE****No archaeological significance****05E1053**

The development consisted of a 110kV transformer station, 110kV building and MV switch room. The site is located adjacent to the Pfizer Pharmaceutical Plant at Pottery Road, Dún Laoghaire, Co. Dublin. The site is very close to SMR 23:27, a holy well site and a holy bush site in Macintosh Park, which is immediately to the south of the development site. Not far from the development site is SMR 23:15, the medieval monastic site of Kill of the Grange, in which there are the remains of Kill Abbey, a holy well, crosses, an inscribed stone, grave slab and cross fragment, a font in its original position and a 'possible dwelling'. Nearer still to the site is SMR 23:16, another font in its original position. The site is on the lands of Kill Abbey, which was owned by the Augustine Canons of the Priory of the Holy Trinity. The properties of the soil close to the village have led in recent years to the establishment of brick and pottery works. They were, in medieval times, known as a major supply of pottery clay, and the sale of clay for making earthenware was a source of profit to the priory. The current name, Pottery Road, on which the site of this development is located, is named after the clay supply from the area. Monitoring carried out on 17 October and 9 November 2005 consisted of the supervision of all topsoil-stripping on the site. The mechanical removal of topsoil was carried out with a flat grading bucket. No finds or features of archaeological interest were found during monitoring.

Judith Carroll, Judith Carroll & Company Ltd, Consultant Archaeologists, 11 Anglesea Street, Temple Bar, Dublin 2.

Dublin**2005:524****CITYWEST TO SAGGART 110KV LINE DIVERSION, SAGGART****No archaeological significance****05E1244**

Monitoring was carried out on 10 and 19 October 2005 for the ESBI on the Citywest to Saggart 110kV line diversion. The line diversion was undertaken to facilitate the construction of an apartment development at the junction of Garterstown Lane and Fortunestown Lane at Saggart, Co. Dublin. The development consisted of four new lattice steel towers. It commenced on the existing line some 250m north of the centre of Saggart village, running north-east for a distance of 500m passing close to the junction of Garterstown Lane and Fortunestown Lane. The development runs within the boundary line of SMR 21:34, the medieval village of Saggart, and is also close to the western end of SMR 21:32, a buried field system of probable medieval or earlier date. No finds or features of archaeological interest were found during the construction of the towers.

Judith Carroll, Judith Carroll & Company Ltd, Consultant Archaeologists, 11 Anglesea Street, Temple Bar, Dublin 2.

Dublin**2005:386**

BALLYMAN**No archaeological significance****32360 21866****05E0057**

Monitoring was carried out at the site of erection of angle towers 40E and 40W for the Carrickmines–Fassaroe 110kV line diversion. The site was located on the south-facing slope of the River Dargle valley c. 100m from SMR 28:1, a standing stone, and 28:2, a complex of archaeological sites including a church and graveyard. The angle tower 40W required the installation of four box trenches 3.35m by 3.35m and 2.6m deep. The angle tower 40E required the installation of a linear trench 2m wide and 1.6m deep. No archaeological features or deposits were identified.

Ciara McCarthy, for Arch-Tech Ltd, 32 Fitzwilliam Place, Dublin 2.

Sligo**2005:1354****ARDNESKAN/CLOONANURE/CLOONEAGH/CLOONLURG/DOOMORE/DOONMEEGIN/KILDARG ANMORE/KINGSFORT/KINKELLEW/KNOCKANAHER/KNOCKMOYNAGH/KNOCKNAGORE/ROSCRIB EAST/TAWNAG****Monitoring****124860 295683 TO 175007 235427****05E0305**

Groundwork relating to the construction of a 220/110kV transmission line by ESB International between substations at Flagford, Co. Roscommon, and Srananagh, Co. Sligo, was monitored. The work comprised the removal of topsoil where angle towers or intermediate pylons along the designated route were to be erected. All the monitoring took place at locations in County Sligo; the sites of two intermediate pylons were to be stripped near Boyle, Co. Roscommon, on 21 June, but access was denied by the landowner. No features or finds of archaeological significance were revealed at any of the monitored locations. Work on the project is expected to continue in 2006.

Ken Wiggins, Judith Carroll & Co. Ltd, 13 Anglesea Street, Temple Bar, Dublin 2.

2004**Cork****2004:0189****BALLYDALY****No archaeological significance****12341 08862, 12315 08894****SMR 38:71(01, 02), 38:70****04E0005**

Test-trenches were excavated at two separate locations in the townland of Ballydaly, near Millstreet, in advance of construction of a new power line. No features or finds of archaeological significance were revealed.

Avril Purcell, Sheila Lane & Associates, AE House, Monahan Road, Cork.

Donegal**2004:0408****MEENALABAN/MEENTYCAT****No archaeological significance****209983 400827****04E0159**

The proposed development at Meenalaban will involve the construction of nine wind turbines/crane bases, an ESB substation and access roads on a hilltop north of Ballybofey. The site is partially forested. The terrain is very rough and consists of blanket bog with some outcrops of bedrock. No potential archaeological features were identified during the field inspection process, although the nature of the terrain meant the field inspection was hardly definitive. There are no known archaeological sites in the vicinity. All excavation works associated with road construction, turbine and crane bases were monitored. There was no evidence of archaeological activity found anywhere on the site.

Christopher Read, North West Archaeological Services, Cloonfad Cottage, Cloonfad, Carrick-on-Shannon, Co. Leitrim.

Donegal**2004:0409****MEENTYCAT****No archaeological significance****20568 40965****04E0441**

The proposed development at Meentycat will involve the construction of fifteen wind turbines, a substation and an extensive network of roads. The site is located atop a blanket-bog-covered hill north of Ballybofey. There are no known monuments within 1km of the proposed wind farm. The site was extensively tested through the excavation of sixteen 100m-long trenches. No evidence of archaeological activity was revealed in any of the trenches.

Christopher Read, North West Archaeological Services, Cloonfad Cottage, Cloonfad, Carrick-on-Shannon, Co. Leitrim.

Dublin**2004:0578****WHITE FIELDS, PHOENIX PARK, DUBLIN****No archaeological significance****31117 25373****SMR 18:7(01-19)****04E1075**

Monitoring took place of mechanical trench excavation for the insertion of ESB PVC ducts. Phoenix Park is a protected heritage site. The trench was excavated for the installation of cables and jointing between the ESB substation in St Mary's Hospital across the Fifteen Acres and connecting to the ESB substation in the US Ambassador's Residence. Nothing of archaeological significance was identified during monitoring.

Sinead Phelan, Margaret Gowen & Co. Ltd, 27 Merrion Square, Dublin 2.

Leitrim**2004:0955****CORDERRY****No archaeological significance****18789 32798****04E0676**

The proposed development at Corderry is to consist of an ESB substation and related access. There are no known monuments in the area. All excavation work, which took place in May 2004, was carried out by machine and was monitored. The topsoil consisted of a light-brown clay with small stones. It ranged between 0.15m and 0.25m deep, being deeper to the south. This layer rested on natural subsoil consisting of a light-grey/brown compact clay. There was no evidence of any archaeological activity on the site.

Christopher Read, North West Archaeological Services, Cloonfad Cottage, Cloonfad, Carrick-on-Shannon, Co. Leitrim.

Meath**2004:1203****CAUSETOWN**

Fulacht fiadh

289580 273117, 289596 273163**04E0608**

Monitoring of topsoil-stripping was undertaken in connection with the construction and development of the Gorman 220kV station at Causetown, Stackallen, on behalf of BSG/ESB.

Three features of archaeological interest were encountered. A spread of fire-shattered stones and charcoal measuring 12m by 12m were discovered outside the immediate area of development on the site. Following consultation, it was agreed that the site, a probable fulacht fiadh, should be preserved.

Topsoil-stripping of the south-eastern area of the field close to a boundary ditch and a stream indicated some slight evidence of the former existence of a probable fulacht fiadh site (Site 2). However, the disturbance of the terrain arising from earlier cultivation and installation of stone-lined drains in this area had led to the total degradation of the original site.

Further mechanical stripping of topsoil towards the north-west of the site, in Field 12, revealed evidence of burnt soil, some charcoal and small quantities of finely cremated bone. This site, Site 3, was subsequently excavated by Thaddeus Breen (No. 1204 below, 04E0862).

Brendan O'Riordain, Burgage More, Blessington, Co. Wicklow, for Valerie J. Keeley Ltd.

Meath

2004:1204

CAUSETOWN

Fulacht fiadh

289518 273222

04E0826

The site consisted of a burnt spread with cremated bone, which was discovered by Brendan O'Riordain in the course of monitoring groundworks for the construction of a 220kV transmission station (see above No. 1203). It was situated in a low valley, with land sloping gently upwards to the north and south from a small stream.

The site was initially cleaned back to reveal an irregular oval of burnt material. It was not homogenous but consisted of patches of fire-shattered sandstone alternating with areas of black, charcoal-rich silty soil with cremated bone, and patches of grey-brown soil with charcoal flecks. There was also a small darker area in the centre and three black patches along the eastern edge and some lighter-coloured linear features crossing the site. Three flints, including two definite implements, were found in these spreads.

Four circular or oval bowl-shaped pits were found, two of which were under the burnt spread. All of these contained cremated bone. One in particular had a concentration of cremated bone in a hollow cut into one side. This appears to have been the source of the cremated bone scattered across the centre of the spread, probably by later ploughing. The site was crossed by two sets of furrows, which cut the burnt spread: shallow spade cultivation furrows and narrower furrows that appeared to be for drainage.

Morphologically, the site is a standard fulacht fiadh. The presence of cremated bone is atypical. It has not yet been established whether this is human or animal bone.

Thaddeus C. Breen, 13 Wainsfort Crescent, Dublin 6W, for Valerie J. Keeley.

Roscommon

2004:1453

CORBALLY MIDDLE

No archaeological significance

188920 293165

04E0813

Testing was undertaken in advance of erecting an ESB pylon at Corbally Middle, Co. Roscommon. The pylon site lay some 75m south of an enclosure in an undulating field. The pylon forms part of the the Flagford-Srananagh 220/110kV project, which entails the erection of a total of 76 towers within County Roscommon between the Flagford substation and the townland of Drumshannagh, to the south of Boyle. Testing showed the area of the pylon to be sterile.

John Channing, Chapel Lane, Stratford-on-Slaney, Co. Wicklow, for V.J. Keeley Ltd.

Sligo

2004:1495

BALLYSUMAGHAN

Testing

1748 3257

SMR 27:163(01, 02), 27:29(02)

04E0334

Testing of the site of a proposed development was carried out on 23 February 2004. The proposed development is part of the Flagford-Srananagh 220/110kV project and involves the construction of an electrical substation in Ballysumaghan. The site of the substation is adjacent to a crannog, an unlocated crannog and an enclosure. In an assessment carried out by Ros í Maoldœin in December 2003, three areas of possible archaeological interest that would be impacted on by the development were identified: Possible Site (PS) 1, a potential enclosure; PS 2, a triangular area enclosed by a bank and ditch; and PS 3, a potential crannog. Topsoil-stripping at the construction stage is unlikely to be carried out in the vicinity of PS 3.

Five trenches were excavated by machine across the areas of PS 1 and PS 2 to natural undisturbed levels. PS 1 appears to be the natural edge of a geological feature, which has been quarried. In the area of the triangular enclosure, PS 2, testing revealed no information regarding the date of the bank or ditch. A small amount of charcoal flecking was recorded in the bank material, but no artefacts or features were recorded that could provide a date or a function for the feature.

Elizabeth Connolly, for Valerie J. Keeley and Co., Brehon House, Castlecomer, Co. Kilkenny.

Sligo

2004:1496

BALLYSUMAGHAN

No archaeological significance

175026 325406, 175012 325446

04E1254

Excavation was undertaken in Ballysumaghan townland as part of the Flagford-Srananagh 220/110kV project, which involves the construction of an electrical substation on the site. Monitoring of ground disturbance and topsoil-stripping identified three potential sites of archaeological importance. The northern half of the development encroaches on the site of a drained lake, Castle Lough. The lake contains at least one extant crannog, which lies outside the area of proposed development, and reference was found to a second crannog. The southern portion of the development is situated on the north-facing slope of a hill that affords good views of the former lake and its surrounding environs. Site 1 was the most southerly and measured c. 12.5m east-west by 15.65m. Site 2 was north-west of Site 1 and measured c. 17m east-west by 11m. Site 3 was the most northerly site and measured 9m east-west by 20m.

There was c. 0.3m of topsoil over Site 1. There was a small irregular feature of charcoal and burnt clay in the centre of the site. It measured 0.43m by 0.26m and had been truncated by a track machine. Excavation revealed it to be of no archaeological significance.

Site 2 comprised a small circular feature identified in the north-west corner of the site. It measured 0.41m by 0.45m and was very shallow, 0.06m. The base was irregular and undulating. It was filled with mid-brown silt with c. 3% sand and 10% charcoal flecks. There were also trace amounts of burnt clay. No finds were recovered from this feature nor was it in association with any other archaeological anomalies. It appeared to be a natural occurrence and was of no archaeological significance.

Traversing the site in an east-west orientation were the remnants of five plough furrows. They were 0.38-0.54m in width and 0.05-0.06m deep. They were only evident on the southern end of the site and were filled by friable mid-brown clayey silt. No finds were recorded from this fill. The furrows on the southern side of the site were cut into the natural subsoil. One piece of struck flint was recorded from the topsoil at this site.

Site 3 was the most northerly of the three sites. After cleaning, no record of a linear ditch was identified and it was probably the result of excess subsoil being left behind during the topsoil-stripping. One irregular-shaped area of burning was identified in the south-west corner of the site. It consisted of friable grey/brown silty clay with frequent patches of charcoal staining, root fragments and occasional patches of burnt clay. It measured 0.64m by 0.53m, with a depth of 0.02-0.05m. This feature is similar to that on Site 1 and is not of archaeological significance; it is probably the result of burning of natural vegetation. Situated along the eastern boundary of the site was a natural deposit of gravel, which was orientated in an east-west direction. It measured 0.65m by 1.9m and was 0.05m deep.

The anomalies identified were the result of non-archaeological activity on the site, including natural cavities, geological features and the burning of vegetation, which was possibly the result of field clearance. There was some charcoal flecking within three of the features, but this was in an otherwise sterile context.

Colum Hardy, for Valerie J. Keeley Ltd, Brehon House, Kilkenny Road, Castlecomer, Co. Kilkenny.

Tipperary

2004:1603

GARRANACANTY

No archaeological significance

19017 13669

SMR 67:89

04E0564

Monitoring of ground disturbance associated with the construction of an ESB substation was

undertaken, as the site is located close to an earthwork. No features or finds of an archaeological nature were uncovered.

Anne-Marie Lennon, AML Archaeology, 6 Hillview Crescent, Cahir, Co. Tipperary.

2003**Cork****2003:0143****Aughinida/Shanakill/Kilberrihert****No archaeological significance****1372 0765****03E0219**

Testing was undertaken in February 2002 and June 2003 on behalf of ESBI Engineering Ltd, at a number of locations for proposed intermediate polesets and angle towers associated with Clashavoon 220kV substation in Aughinida townland, near Macroom, Co. Cork. The programme of testing was undertaken in the vicinity of a number of archaeological sites along the four routes (Routes 1–4) which comprise the Clashavoon Line Loop. The routes radiate from the Clashavoon substation, in a south and south-west direction for Routes 1 and 2, each measuring approximately 1.5km in length, and in a north and north-west direction for Routes 3 and 4, which each measure 400m. During monitoring by Stephen Johnston under licence number 01E1210 at the site of the substation, a fulacht fiadh was identified, a portion of which was excavated by Ellinor Larsson in 2002 (Excavations 2002, No. 213, 02E1039).

Testing was carried out by inserting a single trench at the location of each intermediate poleset (IMP) and two trenches at the location of each angle tower, reflecting the position of the polesets or the location of the legs of the angle towers. Fifteen trenches were excavated at nine locations, situated in mainly low-lying wet fields under heavy grass, in the vicinity of known archaeological sites and areas of archaeological potential. The majority of the trenches were situated in the vicinity of the Clashavoon 220kV substation in Aughinida townland, with two trenches in the adjoining townland of Kilberrihert and three in Shanakill townland to the south. In June 2003 the two final trenches of the testing programme were mechanically excavated at the location of IMP 6, where a single field drain was identified in one of the trenches.

The testing revealed no archaeological finds, features or deposits at the proposed locations of the angle towers and polesets.

Ellinor Larsson and Stephen Johnston, c/o Arch-Tech Ltd, 32 Fitzwilliam Place, Dublin 2.

Cork**2003:0187****Carrigaline****No archaeological significance****17540 06224****03E0471**

The laying of an ESB cable across the Owenboy River, Carrigaline, Co. Cork, was monitored. Spoil from the cable trench was also metal-detected (02R196). No archaeological finds or features were uncovered.

Miriam Carroll, Archaeological Services Unit, University College Cork.

Cork**2003:0196****Castlelands****No archaeological significance****13573 05463****SMR 109:64****03E1212**

Planning permission was granted to the ESB for the construction of an overhead 38kV line at Castlelyons and Derrigra, Enniskean, Co. Cork. A condition of planning required that a buffer zone of 6m be established between a line pole pit and a nearby school and that all ground disturbance on the site be monitored. The buffer zone was established to the east of the monument. Topsoil was removed by machine to a depth of c. 0.25m in an area c. 0.5m². Rock was encountered at this depth and a rock breaker was used to achieve the required depth for the trench. No archaeological finds or features were noted on the site.

Sheila Lane, AE House, Monahan Road, Cork.**Cork****2003:0202****Charleville to Newmarket****Various****141 116****03E0250**

Monitoring of the Charleville to Newmarket 110kV line development in County Cork was carried out on behalf of ESBI Ltd. This work commenced in February and was completed in July 2003. A previous cultural heritage report by CRDS Ltd (November 2001) indicated that there were a significant number of archaeological sites in the area and in addition a number of potential archaeological sites. Following consultation with Dúchas, a programme of pre-development testing of selected locations was agreed, followed by monitoring under the same licence. Archaeological remains were found at four poleset sites during testing and monitoring of the line. In each case, it was possible to relocate the poleset position to avoid the archaeological deposits. Poleset 21 (149342 119502): Charcoal-rich material and cremated bone were found during testing and monitoring of this poleset, suggesting that a possible prehistoric feature is present. The site is located 50m east-south-east of the remains of a ringfort (SMR 7:35).

Poleset 14 (150477 119704): A linear feature associated with and physically related to the site of Milltown Castle (SMR 7:39) (in adjacent field) was uncovered during monitoring.

Poleset 84 (field adjacent to) (13876 11519): This field holds three monuments: SMR 6:77(01) (holy well), 6:77(02) (graveyard) and 6:77(03) (possible church). During monitoring of a temporary pole near the northern boundary, material typical of a fulacht fiadh was exposed.

Poleset 117 (adjacent to) (13380 11070): Whilst monitoring PS117, a previously unrecorded limekiln was discovered 80m west of the poleset.

A number of non-archaeological features were also encountered, including field drains and boundaries, and a disused quarry. These were recorded and their locations noted.

James Lyttleton, c/o CRDS Ltd, Unit 4 Dundrum Business Park, Dundrum, Dublin 14.

Cork**2003:0204****Clonfert/Lisdangan/Newmarket/Curraduff****No archaeological significance**

13001 10631; 13013 10641; 13023 10640; 13018 10651; 13064 10681; 12984 10599; 13117 10711; 13089 10695

SMR 22:44, 22:45(01, 02), 22:46, 22:51, 22:55, 22:59, 22:270

03E1597

Planning permission was granted to the ESB for the construction of an overhead 38kV line, 1.3km and 0.76km long, at Clonfert, Lisdangan, Newmarket and Curraduff, Co. Cork. A condition of planning required that all ground disturbance associated with the pole foundation pits along the proposed route of the line be monitored. It also required that a 20m buffer zone be established around any nearby archaeological monuments encountered along the proposed route. A number of the ESB poles were erected, in 1m² foundation pits, within the zones of archaeological potential for monuments, but none were located close to the visible remains of any of these sites (six fulachta fiadh, a bridge and a deserted medieval village). Generally topsoil was excavated to a depth of 0.3m and this overlay a loose, orangey-brown, stony silt clay subsoil. No finds or features of an archaeological nature were noted during monitoring.

Sheila Lane, AE House, Monahan Road, Cork.

Donegal**2003:408****Drumlonagher****No archaeological significance****201570 436520****03E0282**

Monitoring was carried out at Drumlonagher townland, Co. Donegal, between 11 and 12 March 2003. The proposed development involves the excavation of a 260m-long trench to facilitate the installation of an underground electricity line between Pole 1 and the existing 38kV ESB substation at Drumlonagher, Donegal town.

The site consists of a poorly drained low-lying field sloping naturally from the south to the north bounded on all sides by a bank and hedgerow. The field fronts onto the N15. Monitoring produced nothing of archaeological significance. Eight modern pottery sherds were retrieved from directly beneath the topsoil. The finds included fragments of a stoneware jar, a number of willow pattern and white ware sherds and glass fragments.

Billy Quinn, Moore Archaeological & Environmental Services Ltd, Corporate House, Ballybrit Business Park, Ballybrit, Galway.

Tipperary

2003:1726

Lower Gate and Main Street, Cashel

Urban

20758 14070

SMR 61:25

03E01447

Monitoring of electricity-duct laying was undertaken in the centre of the town of Cashel. Works were concentrated on Main Street and Lower Gate, within the zone of archaeological potential for the town and in the heart of the medieval town. Trenching was 0.45m wide; depths were between 0.5 and 0.7m. No medieval archaeology was encountered. The remains of a wall foundation with a bonding which suggested a post-medieval/modern date of construction was found in two separate locations. Also a black silty sand deposit was uncovered with some charcoal flecking. No datable evidence was found from this deposit.

Road construction (national primary route N8) would have destroyed any archaeological deposits. In some locations, the road build-up extended far below the formation level for the ducting. At other locations along the route, natural depositions were exposed beneath the road build-up material. It is likely that previous roadworks would have destroyed earlier street surfaces associated with medieval and post-medieval Cashel.

Mary Henry, Mary Henry Archaeological Services Ltd, 17 Staunton Row, Clonmel, Co. Tipperary.

2002

Cavan

2002:0058

Gartnaneane

Fulacht fiadh

26963 30146

02E0406

Extensive pre-development testing was carried out before the construction of a proposed wind farm at Gartnaneane, Bailieborough, Co. Cavan. The development consisted of ten wind turbines, an ESB substation and a number of new access roads. A total of 31 trenches were excavated by machine to the level of undisturbed natural subsoil. Potential archaeological material was uncovered in one trench, excavated to a depth of 0.2–0.6m. The remains of a possible ploughed-out fulacht fiadh were revealed at this level. The proposed access road, which impinged on the possible fulacht fiadh, was moved to an adjacent field.

Christopher Read, North West Archaeological Services Ltd, Cloonfad Cottage, Cloonfad, Carrick-on-Shannon, Co. Leitrim.

Cork

2002:0213

Aughinida

Fulacht fiadh

13725 07653

02E1039

A fulacht fiadh was identified and partially disturbed during monitored topsoil-stripping by Stephen Johnston (01E1210, no summary provided) at Aughinida, Clashavoon, and excavation ensued in July 2002 before the construction of an ESB substation. The monument covered an area measuring c. 40m south-east/north-west by 10.4m. An area of the site measuring c. 15m north–south by 10m was exposed during monitoring, just 0.5m east of a field boundary, and was subsequently excavated to form part of a buffer zone to protect the remainder of the monument from further disturbance.

Before excavation, the oval mound appeared as a slightly raised, grass-covered area with gorse bushes growing on the surface. The mound consisted of two main deposits and was 0.5m in maximum height. The upper deposit consisted of fragments of burnt and fire-cracked sandstone mixed with loose, dark brown, sandy clay with occasional inclusions of charcoal flecks and was heavily disturbed by tree roots. The stones were angular, measuring 0.05–0.11m in diameter. The primary, undisturbed deposit of the mound was black and consisted of burnt and fire-cracked sandstone mixed with charcoal-stained, silty clay. These stones were much smaller, averaging 0.01–0.04m in diameter. The subsoil was a firm, white, fine, silty clay with a light pink hue and appeared to have been affected by heat in the area close to the mound material.

A trough was revealed in the western extent of the site, measuring 1.8m north–south by 1.6m by 0.4m deep. The cut was irregular in plan, with vertical sides and a flat base, and was lined on the western side by slabs averaging 0.4m high and 0.16m wide. These were set vertically, resting directly on the bottom of the trough. The cut was partially capped by a large, subrectangular, granite boulder to the south, 0.8m wide and 1.1m long. The fill of the trough was similar to the two separate fills of the mound.

A concentration of stake-holes was situated directly to the east of the trough, in the shape of an arc/semicircle with the open end facing north. The size and shape of the stake-holes were uniform, and the fills were also identical to the primary, undisturbed deposit of the burnt mound. A circular pit was situated to the north of the spread. The cut, with sharp sides and a flat base, measured 1.6m east–west by 1.2m and was 0.45m deep. The fill was a loose, brown, silty clay with frequent inclusions of fire-cracked stones.

No finds were discovered. Samples were extracted from the features for environmental, dendrochronological and charcoal analysis. No definite date has yet been obtained for the use of the site.

Ellinor Larsson, Arch-Tech Ltd, 32 Fitzwilliam Place, Dublin 2.

Cork

2002:0368

Youghal

Urban

X105780

SMR 67:29(01, 02)

01E1149 ext.

Monitoring of ESB cable laying in the core of the medieval town had been continuing since December 2001 under the direction of Stuart Elder (Excavations 2001, No. 239). In May 2002 that licence was transferred to the writer for the monitoring of Phases 4, 5 and 6.

The earliest archaeological evidence of settlement in Youghal is the impressive remains of the town wall, which date from the late 12th century. Historically, the impetus for urban development at Youghal possibly came about because of the establishment of a Viking/Hiberno-Norse longphort in the mid-9th century; later the site offered good defensive, commercial and logistical characteristics to the Anglo-Normans, and it developed accordingly under the patronage and lordship of the earls of Desmond. As part of this development, the town acquired the many vestiges of a medieval town, both secular and ecclesiastical.

Phase 4 was concerned with cable laying on Catherine's Street, Grattan Street, O'Neill Crowley Street, Lower Brown Street, Dolphin's Square and part of North Main Street. The sediments unearthed were mostly disturbed ground that had been previously excavated on numerous occasions for different services. No in situ remains were encountered; any remains that were found were quite modern in date. The artefacts found in the trenches were post-medieval and modern in date.

Phase 5 was at Pearse Square/Strand Street, within the zone of potential of the Franciscan priory (SMR 67:28 (01)) known as South Abbey. A narrow trench was excavated across Pearse Square, running east from the foot of Hayman's Hill diagonally to the east side of the Square. The trench continued tight to the line of the eastern footpath, turning the corner into Strand Street to meet up with a new pillar box in front of the Old Monastery apartments on the eastern side of the street. The sediments encountered were all make-up for the road and consisted of various layers of hardcore and gravels. Occasionally, natural sand was uncovered, at a depth of 0.7m on Pearse Square and 0.6m on Strand Street. No finds or features of archaeological significance were uncovered.

Phase 6 was at the bottom of Windmill Lane and its junction with South Main Street and Friar Street. This phase was revealed by a chance opportunity to carry out emergency repairs. A pole on this junction carrying a major supply to the town was in danger of collapse and was taken down, with the cable being placed underground. The trench started on Windmill Lane, ran to the junction with South

Main Street for 40m, turned south down Friar Street for 20m, crossed the road and returned for 30m on the eastern side of South Main Street. The trench was excavated to a depth of 0.65m. Much of the run of the trench had been heavily disturbed by previous service trenches. Toward the meeting of South Main Street and Windmill Lane, the remains of the flooring of the 18th-/19th-century house that had occupied the bottom corner of the lane were uncovered. This surface consisted of plain, 19th-century, red earthenware tiles. Natural beach sand was uncovered at the maximum depth of this trench, at 0.8m at the bottom of Windmill Lane and at 0.7–0.5m on the eastern side of South Main Street.

A short offshoot trench of 8m was run into the yard of Derry's Tyre Centre on the eastern side of South Main Street. The sediments removed consisted of the rubble remains of demolished 18th- and 19th-century buildings.

No finds or features of archaeological significance were uncovered during the monitoring of this trench excavation.

Daniel Noonan, 47 North Main Street, Youghal, Co. Cork, for Eachtra Archaeological Projects.

Dublin

2002:0460

Ballyman

No archaeological significance

32356 21879

02E1864

Testing was undertaken in the townland of Ballyman, Co. Dublin, on 18 December 2002 before a proposed diversion of 110kv ESB overhead lines required to facilitate the proposed construction of a new golf-course for Dún Laoghaire Golf Club.

The area of testing was confined to the south of the Ballyman Road, in the vicinity of a possible castle (SMR 26:63), a pit burial (SMR 26:113), possible standing stones (SMR 28:1) and ecclesiastical remains (SMR 28:2). The proposed locations of two pairs of poles and a pylon were subjected to the programme of testing. No features or finds of archaeological interest were uncovered.

Martin E. Byrne, 31 Millford, Athgarvan, Co. Kildare.

Galway

2002:0702

Counties Galway and Mayo

Monitoring

02E0956

The proposed development comprises the construction of 57.3km of overhead lines from Castlebar, Co. Mayo, to Cloon, south-west of Tuam, Co. Galway. All wires will be supported on double woodpole structures, with poles 5m apart. These structures will be erected approximately every 200m. Where the line changes direction, an angle structure is required, consisting of lattice steel towers. The design for the 110kv line incorporates 253 poleset structures and 38 angle-tower structures. The power-line route passes primarily through green fields. It starts at Castlebar substation and continues in a roughly southward direction past Breaghwy townland, through various townlands and finally into County Galway at Carrowmurlaur townland. The line then continues roughly south-eastward before terminating at Cloon substation near Tuam, Co. Galway. An assessment recommended that monitoring be carried out and that testing be undertaken at pole-structure and lattice-tower locations near known archaeological sites (see Nos 1371, 02E1287; 1378, 02E1286; 1379, 02E1105; 1380, 02E1106; 1392, 02E1290; 1403, 02E1289; and 1408, 02E1288, below; all in County Mayo). Monitoring is continuing at the time of writing.

Declan Moore, Moore Ltd, Unit 6, Riveroaks, Claregalway, Co. Galway.

Galway

2002:0710

Ballybaun

Monitoring

16050 22111

02E1443

Monitoring was carried out of trenches excavated before the construction of an ESB tower in the townland of Ballybaun, c. 6.5km from Loughrea, Co. Galway, as the proposed tower was near two ringforts, SMR 97:1 and 97:7. Four trenches, measuring c. 2m by 2m by c. 1m deep, were excavated

by mechanical digger. In no trench were finds or features of archaeological significance uncovered.
Georgina Scally, 81 Upper Leeson Street, Dublin 4.

Galway**2002:0718****Carrowkeel****No archaeological significance****15910 22409****SMR 97:68****02E0855**

Monitoring of excavations associated with the insertion of three ESB poles was carried out on 5 June 2002. Nothing of archaeological significance was discovered.

Anne Carey, Archaeological Services Unit Ltd, Purcell House, Oranmore, Co. Galway.

Kerry**2002:0806****Great Southern Hotel, Killarney**

Urban

V970907**02E0189**

Monitoring was undertaken on the site during groundworks for an extension to the hotel. The planning schedule requested monitoring of all groundworks. Owing to an oversight by the agents of the owners, work was allowed to proceed before the appointment of an archaeologist. Ground reduction had been undertaken on a significant part of the site before archaeological involvement. After the appointment of an archaeologist, the remaining groundworks, comprising the excavation of a number of service trenches, were undertaken under supervision.

One possible pit was revealed in the section of a trench dug to receive ESB ducting. It was 1.26m wide and 0.6m deep and was revealed 0.63m below the ground surface on which a path ran. There were no finds in the pit. The remainder of the pit was preserved in situ as no further development was to be undertaken in this area of the garden. No additional archaeological features or finds were revealed.

Avril Purcell, Sheila Lane & Associates, AE House, Monahan Road, Cork.

Limerick**2002:1132****Bohergar/Dromeliagh/Cunnagvane/Brackyle/Ballyvalode/Moanroe/Moanahila****No archaeological significance****169843 152780, 184144 143061****02E0403**

An environmental impact statement was drawn up on behalf of the ESB on the route of the proposed Killonan–Tipperary 110kv line in spring 2001. The proposed line covers 42km between the townlands of Ballyglasheen, Co. Tipperary, and Killonan, Co. Limerick. The environmental impact statement identified a number of points on the route where associated groundworks could impinge on either listed sites or sites of potential archaeological significance. Based on the results of the environmental impact statement, the sites of sixteen separate polesets or angle towers were determined to require mitigation. Eleven were situated in the listed townlands in County Limerick.

Mitigation consisted of the manual excavation of a test-trench adjacent to the proposed location of the poleset. Each trench measured 1m square. Trial-pits were excavated over a number of days between 13 April and 15 August 2002. Nothing of archaeological significance was exposed in any of the trenches, and all finds recovered were of modern date. The sites tested in County Tipperary are listed in a separate report (No. 1742 below).

Donal Fallon, Cultural Resource Development Services Ltd, Unit 4, Dundrum Business Park, Dundrum, Dublin 14.

Longford**2002:1279****Lanesborough****No archaeological significance****N01006950****02E0452**

Monitoring of groundworks associated with the construction of an ESB power station took place from 2

to 14 July, after which Caroline Powell monitored the remainder of the development. Nothing of archaeological significance was encountered during the monitoring.

Niall Gregory, ADS Ltd, Windsor House, 11 Fairview Strand, Fairview, Dublin 3.

Mayo

2002:1378

Brownhall Demesne

No archaeological significance

12360 28310

SMR 90:48

02E1286

The proposed development comprises the construction of 57.3km of overhead lines from Castlebar, Co. Mayo, to Cloon, south-west of Tuam, Co. Galway (No. 702 above, 02E0956). At Brownhall Demesne, Co. Mayo, it was proposed to erect a set of double poles near an enclosure. Testing was carried out on 23 August 2002. A single trench was excavated at the proposed location of the poleset. Topsoil and sod directly overlay a mottled grey/orange boulder clay. Nothing of archaeological significance was noted.

Declan Moore, Moore Ltd, Unit 6, Riveroaks, Claregalway, Co. Galway.

Mayo

2002:1379

Caltragh

No archaeological significance

13206 27375

SMR 111:60

02E1105

The proposed development comprises the construction of 57.3km of overhead lines from Castlebar, Co. Mayo, to Cloon, south-west of Tuam, Co. Galway (No. 702 above, 02E0956). A set of poles was to be erected in the townland of Caltragh, west of Claremorris, in Knocknacaltragh burial-ground. Access to the site is gained at the north-east from the road leading north from the main Claremorris to Ballinrobe road. Testing was carried out on 27 July 2002. A single trench was excavated. Topsoil and sod directly overlay bedrock. Nothing of archaeological significance was noted.

Declan Moore, Moore Ltd, Unit 6, Riveroaks, Claregalway, Co. Galway.

Mayo

2002:1380

Caltragh

No archaeological significance

13238 27318

SMR 111:63

02E1106

The proposed development comprises the construction of 57.3km of overhead lines from Castlebar, Co. Mayo, to Cloon, south-west of Tuam, Co. Galway (No. 702 above, 02E0956). A set of poles was to be erected in the townland of Caltragh, west of Claremorris, near an enclosure. Testing was carried out on 27 July 2002. A single trench was excavated. Topsoil and sod directly overlay bedrock. Nothing of archaeological significance was noted.

Declan Moore, Moore Ltd, Unit 6, Riveroaks, Claregalway, Co. Galway.

Mayo

2002:1390

Elmhall

No archaeological significance

12000 28536

SMR 90:146

02E1290

The proposed development comprises the construction of 57.3km of overhead lines from Castlebar, Co. Mayo, to Cloon, south-west of Tuam, Co. Galway (No. 702 above, 02E0956). A set of double poles was to be erected near the walled garden of Elmhall House, Elmhall, Co. Mayo. The wall is substantial and in places stands up to 3.5m high. Testing was carried out on 24 August 2002. A single

trench was excavated. Topsoil and sod directly overlay bedrock. Nothing of archaeological significance was noted.

Declan Moore, Moore Ltd, Unit 6, Riveroaks, Claregalway, Co. Galway.

Mayo

2002:1401

Lisgowel

No archaeological significance

11909 28847

SMR 79:54

02E1289

The proposed development comprises the construction of 57.3km of overhead lines from Castlebar, Co. Mayo, to Cloon, south-west of Tuam, Co. Galway (No. 702 above, 02E0956). It was proposed to erect a set of double poles at Lisgowel, Co. Mayo, near an enclosure that sits at the highest point of a prominent drumlin ridge to the east. The site, divided in two by a modern laneway, has been partially levelled. Testing was carried out on 24 August 2002. A single trench was excavated, which revealed topsoil and sod directly overlying a mixed, orange/grey, stony clay. Nothing of archaeological significance was noted.

Declan Moore, Moore Ltd, Unit 6, Riveroaks, Claregalway, Co. Galway.

Mayo

2002:1406

Roslahan

No archaeological significance

12040 28518

SMR 90:8

02E1288

The proposed development comprises the construction of 57.3km of overhead lines from Castlebar, Co. Mayo, to Cloon, south-west of Tuam, Co. Galway (No. 702 above, 02E0956). At Roslahan, Co. Mayo, it was proposed to erect a set of double poles c. 25m to the south-east of an enclosure and a steel tower c. 30m north of it. Testing was carried out on 23 August 2002. A single trench was excavated at the location of the proposed poleset. Topsoil and sod directly overlay boulder clay, and nothing of archaeological significance was noted.

Declan Moore, Moore Ltd, Unit 6, Riveroaks, Claregalway, Co. Galway.

Meath

2002:1411

Archdeaconry Glebe/Townparks (Kells)/Commons of Lloyd

No archaeological significance

02E0110

An assessment was undertaken before the construction of the ESB 38kv line. The line will traverse undulating terrain divided into five ploughed fields. No features of archaeological significance were encountered. Ceramics in the topsoil consisted of 18th- and 19th-century types, including blackware, brownware, creamware and pearlware.

Brian Shanahan, for Cultural Resource Development Services Ltd, Unit 4, Dundrum Business Park, Dundrum, Dublin 14.

Offaly

2002:1575

Shannonbridge

No archaeological significance

22525 19720

02E0451

Two phases of monitoring were carried out in the environs of Shannonbridge power station to facilitate the construction of an access road and a new power station. Surrounding the existing power station are several ash-deposit pits, as well as many power lines both above and below ground. The development area was considered to be of potential archaeological sensitivity because of its location near to the River Shannon and industrial raised bogs.

The first phase of work was carried out in May 2002, when ground reduction before the construction of

a new access road was monitored. This road was being constructed across old ash-disposal ponds. Because it was to have ducting laid along the length of its sub-base, there was thought to be a probability of disturbing the original ground surface. However, there was a far greater depth of ash than previously thought, and the original ground surface was not encountered. The second phase was carried out in September and October 2002. Monitoring of the first stages of the preparatory groundworks required to facilitate the construction of the power station was carried out. It appeared that in the environs of the existing power station the ground level had built up considerably in places with ash waste deposits, brick and disturbed subsoil. The site of the new power station had been badly disturbed over the years.

Jane Whitaker, ADS Ltd, Windsor House, 11 Fairview Strand, Fairview, Dublin 3.

Roscommon

2002:1607

Flagford–Tonroe 110kv Line

Monitoring

02E0944

Monitoring of the construction of the Flagford–Tonroe 110kv ESB line was required as a condition of a grant of planning permission. It ran through the following townlands: Ballyoughter, Magheraboy, Toobracken, Tullaghanrock (all in County Mayo), Banada, Keelbanad, Ballinaphuill, Ratra, Clashcarragh, Turlagharee, Glebe East, Slieveroe, Sheepwalk, Barnaboy, Dower, Carrownurlar, Ballinvoher (Frenchpark), Runnabehy, Kilnamanagh, Finisclin, Cornaveagh, Ballinvoher (Boyle), Carrownagappul, Camlin, Carrowkeel, Treanamarly, Knocknafushoga, Cloonshaghan, Farranagalliagh, Ardmore (ED Croghan), Faus, Ardglass, Macnadille, Derrylow, Knocknacorha, Ardlavagh, Drumerr, Drumlion, Lodge, Drummercool, Ballyculleen, Ballindrehid and Culleenatreen (or Flagford) (all in County Roscommon).

The line was constructed of timber polesets and steel angle towers. A pointed stake (0.33m long and 30mm in diameter) was recovered from the peaty topsoil in Drummercool townland. The point had two facets cut with a metal blade, probably iron. It was not associated with any features or occupation material. Modern field-boundary ditches, furrows and bog oak were also encountered at points along the line.

Brian Shanahan, for Cultural Resource Development Services Ltd, Unit 4, Dundrum Business Park, Dundrum, Dublin 14.

Sligo

2002:1639

Carrowmurragh

Burnt spread

15495 32103

02E1740

A spread of charcoal-enriched clay, burnt stone and charcoal was revealed in the ESB cable trench monitored under licence 02E1431 (No. 1645 below). It was uncovered at 0.5–0.6m below current ground level. The ESB trench in this location was oriented east–west, and the burnt deposit extended 4m along the trench, continuing both north and south beyond the limit of the 1m-wide trench. The deposit was found to fill a shallow cut with sloping sides and a flat base, 0.2–0.4m deep. It contained no finds or animal bones. No other features were revealed. The burnt deposit did not appear to be fulacht material. No datable evidence was retrieved during the excavation.

Christopher Read, North West Archaeological Services Ltd, Cloonfad Cottage, Cloonfad, Carrick-on-Shannon, Co. Leitrim.

Tipperary

2002:1712

Gashouse Lane, Boherclogh and Lower Gate Street, Cashel

No archaeological significance

20731 14039 to 20733 14063

02E1530

Monitoring of an ESB pipe-laying scheme was carried out in Cashel from October to December 2002. The mechanically excavated trench was never more than 1m wide and 1.1m deep. In Gashouse Lane the trench followed the course of an existing ESB underground cable. In Boherclogh and Lower Gate Street the pipeline was excavated through entirely modern ‘made’ ground associated with the Cashel Sewerage Scheme. No features or artefacts of archaeological significance were uncovered during this

work.

Joanne Hughes, Boscabell, Cashel, Co. Tipperary.

Sligo

2002:1645

Cunghill–Kingsmountain

No archaeological significance

15619 32027

02E1431

The proposed development involves the laying of a 16km-long underground ESB cable between two wind farms, covering several townlands between Cunghill and Kingsmountain. Four ringforts, a barrow and a souterrain are situated within 100m of the cable route, none closer than 40m. In addition, much of the cable route was along existing public and forestry roads, where the potential for archaeological remains surviving is low. Only one potential archaeological feature was revealed along the entire route, a burnt deposit excavated under licence 02E1740 (No. 1639 above).

Christopher Read, North West Archaeological Services Ltd, Cloonfad Cottage, Cloonfad, Carrick-on-Shannon, Co. Leitrim.

Tipperary

2002:1742

Moanmore/Shanballymore/Ranacrohy/Knockballynoe East

No archaeological significance

185944 142769, 19535 13674

02E0403

An environmental impact statement was prepared on behalf of the ESB on the route of the proposed Killonan–Tipperary 110kv line in spring 2001. The proposed line covers 42km between the townlands of Ballyglasheen, Co. Tipperary, and Killonan, Co. Limerick. The environmental impact statement identified a number of points on the route where associated groundworks could impinge on listed sites or sites of potential archaeological significance. Based on the results of the environmental impact statement, the sites of sixteen separate polesets or angle towers were determined to require investigation. Five were in the listed townlands in County Tipperary.

Investigation comprised the manual excavation of a test-trench or trial-pit adjacent to the proposed location of the poleset. Each trench measured 1m square. Trial-pits were excavated over a number of days between 13 April and 15 August 2002. Nothing of archaeological significance was exposed in any of the trenches, and all of the finds recovered were of modern date. The sites tested in County Limerick are listed in a separate report (No. 1132 above).

Donal Fallon, Cultural Resource Development Services Ltd, Unit 4, Dundrum Business Park, Dundrum, Dublin 14.

Waterford

2002:1796

Knockaderry Lower/Johnstown

Fulacht fiadh

SMR 16:106, 16:31

02E1445

Planning permission was granted by Waterford County Council to erect a 100kv loop line in association with a substation constructed at Cullenagh in 2001. The development required the erection of double wooden poles at intervals along the line. It was a condition of planning that all ground disturbance associated with the development be monitored. Work was to be carried out in areas within the zones of archaeological potential of a fulacht fiadh in the townland of Johnstown and a delisted group of fulachta fiadh in Knockaderry Lower.

Six trenches, each c. 3m long and 1.2m wide, were excavated. Two trenches were dug within the zone of archaeological potential of the delisted group of fulachta fiadh in Knockaderry. Fulacht fiadh material was present in these trenches at c. 0.15m below present ground level. The full extent of the fulacht fiadh was not determined owing to the limited nature of the work. No finds or features of archaeological interest were noted in the other four trenches.

Sheila Lane, AE House, Monahan Road, Cork.

2001

Clare**2001:060****Drumdoolachty****No archaeological significance****7850 3770****RMP 34:55****01E0166**

The site of IMP 87 (intermediary poleset) on the Drumline–Ennis 110kV Line Realignment consisted of two parallel trenches 50m south of an enclosure. The trenches measured 2m in length and 0.7m in width, and topsoil had a maximum thickness of 0.4m. No artefacts or deposits of archaeological significance were uncovered.

Christine Baker, Arch-Tech Ltd, 32 Fitzwilliam Place, Dublin 2.

Clare**2001:089****Quin Friary, Quin****Human remains****14192 17457****SMR 42:02702, 42:02703****01E0573**

Twenty-one trial-trenches were excavated by mechanical digger in the vicinity of Quin Friary and St Fineen's Church, over a two-phase programme of testing in advance of the provision of visitor centre facilities for the friary. These facilities will include the construction of a visitor centre, the making of a path and the construction of a bridge over the river Rine.

In the area of the visitor centre, two trenches were excavated to natural undisturbed levels. Nothing of archaeological significance was recovered.

In the area of the proposed bridge, west of the River Rine, five trenches were excavated to natural, and nothing of archaeological significance was discovered. A further trench was located just west of Quin Friary, and east of the River Rine. Beneath the sod of this trench a layer of hard core was revealed at the western end of the trench, slightly overlying the topsoil. This was associated with recent ESB activity. Excavation was cut short at the eastern end of the trench when it appeared that a fill consisting of rough, uncut stones was being revealed beneath the topsoil. Although these stones were not faced and had no retaining feature, it may be that they were associated with a building adjacent to the friary. The only extant remains of this building consist of an eastern gable, immediately adjacent to the trench.

Excavations in the area of the proposed path revealed a number of skeletal remains. Two metres north of St Fineen's Church, in a layer of grey-brown clay, a large quantity of disarticulated human and animal bone was found. The bone was often fractured and broken. At a depth of 0.46m below ground level a skull and an articulated portion of a human skeleton, comprising a femur and a lower bone, were uncovered. Fragments of other possibly articulated remains (a pelvis and one long bone) were also revealed. East of this, in similar grey-brown clay, another articulated skeleton was revealed. The skeleton was of a small child, and was orientated east–west, with the head facing east. Occasional animal bone finds came from trenches 10m north of St Fineen's Church. Approximately 10m east of St Fineen's Church the remains of at least three human skeletons, lying in situ in an east–west orientation, were discovered. Two were represented only by the lower sections, while the upper part of another skeleton lay directly over one of the lower remains. This discovery of three skeletons confirmed the high archaeological potential of the area. As a consequence an alternative area to the north-west was chosen for the proposed path.

In the area of the second proposed path, seven trenches were excavated to natural and nothing of archaeological significance was discovered. In an eighth trench some animal bones were discovered in the topsoil, mixed with a very small amount of human bone. The bones extended across the trench in a narrow band in an approximately north-east by south-west direction. A cut was made across the trench to catch the extent of the deposition of the bones and to determine whether or not they were articulated. It was determined that the bones consisted of a possible animal burial with a very small amount of disarticulated human bone.

Monitoring of all ground disturbance related to the development was recommended.
Anne Carey, Archaeological Services Unit Ltd, Purcell House, Oranmore, Co. Galway.

Cork**2001:239****ESB Upgrading programme, Youghal Urban****X10507795****01E1149**

Contractors working on behalf of the Electricity Supply Board laid cable ducting along several streets in Youghal as part of an upgrading programme. On O'Rahilly Street ducting was laid from the substation eastwards, continuing southwards along Market Place. Approximately 20m from the eastern end of O'Rahilly Street is the suspected north-south line of the town wall and the site of a tower, possibly associated with the original Watergate. Nothing of archaeological significance was noted, however, as the trench was excavated through previously disturbed layers and imported sediments used in land reclamation.

Further work was conducted along South Cross Lane and Ashe Street outside Basetown. A mill building is shown on 18th-century maps at the southern end of South Cross Lane, but no physical evidence of this was encountered during trenching.

Work along South Main Street from O'Rahilly Street to Taylor's Lane revealed the presence of three stone-built culverts crossing South Main Street diagonally and running beneath Mall Lane towards the Quay. They were covered in steel plates and preserved in situ.

At either end of O'Neill-Crowley Street a wall was observed aligned north-north-east/south-south-west along the centre of the road. At the Main Street end it was a mere 0.2m below the road surface, whereas at the Catherine Street end it was only evident at a depth of 0.75m below the tarmac.

Constructed of large tabular blocks of local stone, it measured approximately 1.5m (5ft) in thickness and had a depth in excess of 1m. A pottery strap handle and decorated body sherd were recovered from the fabric of the wall, which will help to date it accurately.

Work is ongoing within and without the town walls, and is due for completion in June 2002.

Stuart Elder, Eachtra Archaeological Projects, Unit 2F, Dungarvan Business Park, Dungarvan, Co. Waterford.

Donegal**2001:279****Killult****No archaeological significance****B19192 43172****SMR 24:5****01E0754**

Monitoring was carried out in the townland of Killult, Falcarragh, Co. Donegal, on 14 August 2001. The development entailed the erection of an ESB electricity pole. The site is on high ground to the west of Falcarragh village, overlooking Ballyness Strand, and near a burial-ground.

Excavations were carried out at the location of the pole. Topsoil and sod overlay a light brown, loose silty sand and schist bedrock. Nothing of archaeological significance was noted during the course of monitoring.

Declan Moore, Moore Archaeological and Environmental Services Ltd, 200 Dún na Coiribe, Galway.

Dublin**2001:470****Sandymount Strand and Merrion Strand****No archaeological significance****233303 319939 to 231132 319652****01E0426, 01R0039**

ESB Engineering Ltd undertook the installation of 220Kv underground cables on Merrion and Sandymount strands as part of the Carrickmines to Shellybanks and Irishtown scheme. Groundwork excavation in advance of cable-laying within the intertidal zones of Sandymount and Merrion strands was monitored between 9 May and 12 July 2001. Cable trench excavation measured 1260m in overall length.

The groundworks involved the machine excavation (with a 15-ton track excavator) of a 2.4-4m-wide trench that tapered vertically to a basal width of c. 2m. The trench measured 1.8-2.2m in depth. Tidal

considerations necessitated that the trench excavation, concrete-pouring and pipe-laying were conducted within approximately five-hour periods during low tide. Trench-digging generally took place within the first two hours and installation of the cables and backfilling composed the remainder. The length of trench excavation varied between 24m and 48m each day, depending on tidal conditions and the solidity of the ground into which the machine was excavating. Resumption of the work from the previous occasion's pipe-laying consisted of digging a 10–14m² area to relocate the sealed pipe ends before the trench excavation could continue.

The Sandymount section of the works extended north-eastwards from 10m south of the northern end of Strand Road carpark, across the intertidal zone on the western side of Irishtown Nature Reserve. The monitoring requirement for this section of the works was conducted between 9 May and 21 June 2001. The Merrion Strand section of the works extended southwards from the southern end of Strand Road carpark, across the intertidal zone, and circumnavigated a row of residential buildings to the west, from which it terminated 55m to the south of Merrion Gates. The monitoring requirement for this section of the works was conducted between 2 and 11 July 2001.

No structures, shipwrecks or artefacts of an archaeological or historical nature were encountered.
Niall Gregory, 7 Roselawn Close, Cashel, Co. Tipperary, for Babbie Group.

Louth

2001:865

Jeninstown–Grange Irish

No archaeological significance

31400 30600

01E1218

Pre-development testing was undertaken prior to the development of a low-voltage ESB power line from Jeninstown townland to Grange Irish townland, Cooley Peninsula, Co. Louth. The work was undertaken on foot of an archaeological assessment of the area by CRDS Ltd, which highlighted a number of areas of archaeological potential along the route. It was recommended that a number of pole positions be tested owing to their close proximity to known or suspected sites, or as they were in areas where there was a greater potential for archaeological remains to be encountered. It was also recommended that additional testing of a sample of the remaining pole positions be undertaken, and that a previously unrecorded midden identified during field survey be recorded in full. Sixteen pole positions were tested by the hand excavation of 1m by 1m test-pits. The soil profiles were recorded for each test-pit and varied considerably from peat to marl to boulder clay. Nothing of archaeological interest was recorded in any of the test-pits.

The midden was recorded fully in section. It contained post-medieval pottery.

Finola O'Carroll, Cultural Resource Development Services Ltd, Campus Innovation Centre, Roebuck, University College, Belfield, Dublin 4.

Tipperary

2001:1217

Derrycloney

No archaeological significance

20242 13113

RMP 68:99

01E1043

Monitoring was undertaken at the site of a single poleset on the route of the Cahir–Garrancanty 110kV line, in compliance with a condition of the planning permission for the project. The site is in the north-east corner of a field, c. 30m south-west of a possible enclosure. The pastureland in which the site is located slopes gently downwards to the River Suir, c. 250m south of the site. The erection of the poleset required the excavation of two foundation trenches. These trenches were c. 3.1m long (east–west) by 1.2m wide and had a maximum depth of 2.8m. The integrity and stability of the edges of the trenches was such that some collapsing/subsidence occurred. This led to the final width of the trenches extending unevenly beyond the 1.2m excavated. No material of archaeological significance was uncovered.

Goorik Dehaene, 2 St Vincent's Street West, Inchicore, Dublin 8, for Arch-Tech Ltd.

Waterford

2001:1237

Cullenagh
Corn-drying kiln/charcoal spread
24942 11097
01E0799

An archaeological impact assessment was carried out on behalf of ESBI in July 2000 for a proposed ESB substation. Monitoring of the topsoil removal was recommended. During monitoring of topsoil-stripping five potential archaeological sites were noted. Further investigation of these sites was recommended and this was carried out by Joanna Wren (see No. 1238 below, 01E0859 and 01E0860).

Sheila Lane, Sheila Lane and Associates, AE House, Monahan Road, Cork.

Waterford
2001:1238
Cullenagh
Kiln
01E0859 and 01E0860

Both excavation licences refer to parts of the same site, an area being developed by the ESB at Cullenagh towland, Kilmeaden, Co. Waterford.

Site 1 (01E0859) refers to a trench opened in the south-east corner of the site. The main feature within the trench was a corn-drying kiln. This consisted of a stone-lined semicircular chamber with a partly lined flue to the south-west which terminated in a bowl-shaped area with evidence for intensive burning. The chamber measured 1.6m north-south by 1.7m, while the flue was 0.97m wide and 2.9m long. It was orientated with the flat side of the semicircle to the south-east. Just outside this was a slot for a timber measuring 2.2m in length and 0.2m in width. This presumably formed a movable door for the drying chamber. The stone linings were constructed of a mix of shale and red sandstone conglomerate. On excavation one of the conglomerate boulders was revealed to be the upper half of a rotary quern.

The kiln was surrounded by several spreads of post-holes which formed no definite pattern or structure. No datable finds were recovered associated with the post-holes. There were also two pits set c. 10m apart, both in association with oxidised clay and charcoal. The fill of each pit was fairly sterile and no real function could be assigned to them. Samples of charcoal from each were kept for dating.

Site 2 (01E0860) refers to a group of features found in the eastern part of the site, concentrated in the area of three small trenches (A-C). The most complex feature was located in Trench A. This was an area of charcoal, ash and burnt stone set on an oval spread of shale boulders. The entire context had a maximum north-south extent of 2m and measured 1m east-west. On removal of the charcoal the stones were seen to be lining a kidney-shaped pit with its long axis north-east/south-west. This was 1.84m long, 0.7m wide and 0.3m deep.

South of this pit was a group of three circular pits filled with oxidised clay and charcoal. These were spread between Trenches B and C and set 2-9m apart. Each pit measured 0.5m in diameter and 0.19-0.31m in depth.

No datable finds were recovered from any of these features and their isolated nature made their function difficult to establish. The fill of the larger pit resembled rake-out from some type of hearth or industrial feature, but no such feature survived in the vicinity.

The similarity in the dimensions of the smaller pits and the fact that they were all roughly circular suggests a similar purpose for all of them. No industrial or organic debris which might give a clue as to their use survived within the fills. It is possible that they were robbed-out post-pits backfilled at a later stage with waste burnt material. If so, they represent far too incomplete a survival to attempt an interpretation of the original structure. Charcoal samples from these features were retained for dating.

Joanna Wren, The Mile Post, Waterford, for Sheila Lane and Associates.

Westmeath
2001:1261
Preaching Lane, Athlone
Urban
20390 24150
RMP 29:42
01E0926

Pre-development testing on the site of a proposed ESB substation at Preaching Lane, off Church Street, Athlone, Co. Westmeath, was carried out between 27 September and 2 October 2001 owing to

the location of the proposed development within the zone of archaeological potential for Athlone town. Prior to the demolition of the old ESB substation the site, enclosed by block walls, contained a switchroom to the south, opening onto a yard area with a shed, a utility room and a toilet outhouse to the north.

Two trial-trenches, 10m long by 1.1m deep, were excavated through the yard area of the site, exposing a stratigraphy of modern backfill under a thick concrete layer. All the finds recovered were modern in date, including pottery and glass sherds and red brick fragments.

Billy Quinn, ASU Ltd, Purcell House, Oranmore, Co. Galway.

2000

Kildare

2000:0483

DUNFIERTH

No archaeological significance

2779 2382

00E0662

In compliance with the planning permission conditions, monitoring of groundworks associated with the ESB 110kV Substation commenced on 20 September 2000 and was carried out on an intermittent basis until 9 February 2001.

The stratigraphy was consistent across the site: 0.25m of topsoil overlay 0.75m of dark brown, compact clay subsoil, which in turn overlay at least 2m of firm, mid-brown, gravelly clay. The shallowness of topsoil suggests that this site was never ploughed. Stripping of the site and groundworks trenching revealed no features, structures or deposits of archaeological significance. The bowl of a 'Parnell Pipe' was the only artefact recovered.

D.L. Swan and Catriona Devane, Arch-Tech Ltd, 32 Fitzwilliam Place, Dublin 2.

Kilkenny

2000:0530

ABBEY STREET/ABBEY SQUARE, KILKENNY

Urban medieval

SMR 19:26

00E0335

Prior to the rerouting of gas, ESB, phone and Cablelink services to below ground level, and the resurfacing of the footpaths and roads at Abbey Square/Abbey Street, carried out on behalf of Kilkenny Corporation, the routes had to be archaeologically resolved. The services were, as much as possible, installed along routes that had been previously excavated, thus minimising the disturbance to in situ archaeological layers.

Previous excavations in this area, including pipework trench construction for the Breagh River drainage scheme and other building projects, revealed the existence of a medieval graveyard south of the Black Abbey.

Twelve test-trenches were dug, nine of which yielded evidence of archaeological material. Structures were recorded in seven of these trenches. These included two walls in Trench 1, one of which was the west precinct wall of the medieval graveyard attached to the Black Abbey. This extended into Trench 5. A culvert was located in Trench 2 and again in Trench 7. The corner of a building was exposed in Trench 10, along with a cobbled surface. The east chancel wall of the Black Abbey and a tiled floor were recorded in Trench 11. Trench 12 yielded a network of culverts and a cobbled surface.

The complete or partial skeletons of three individuals were removed for further examination, as well as pottery, tiles and animal bones.

As a result of the close cooperation of the Borough Engineer and his team of workers, the service pipework was rerouted to avoid causing damage to archaeological structures.

The programme of works has been temporarily suspended owing to lack of funds. However, most of the service routes have now been archaeologically resolved.

Frank Ryan, 28 Cabinteely Way, Dublin 18, for Mary Henry Archaeological Services.

1999

Dublin**1999:247****37 PARK WEST INDUSTRIAL PARK, GALLANSTOWN****Close to cemetery****309640 233060**

Monitoring of the excavation of the foundations of an ESB transformer room and site security office was carried out at Site 37, Park West Retail and Industrial Park, Gallanstown, Dublin. Construction work has been ongoing at this site since October 1997, and therefore the site has been very much disturbed. Early in 1999 skeletal remains were excavated by Margaret Gowen & Co. Ltd from the same townland (No. 246 above).

Monitoring revealed that the topsoil in this area had already been stripped down to the natural boulder clay as part of the previous development and a layer of hardcore had been laid over most of the site. The foundation trenches, which were excavated to a depth of c. 6m, revealed no archaeological deposits or stratigraphy.

Donald Murphy, Archaeological Consultancy Services Ltd, 15 Trinity Street, Drogheda, Co. Louth.

Dublin**1999:268****THE OLD BURIAL GROUND, SAGGART****Possible Early Christian****30038 22067****SMR 21:34****99E0229**

Test-trenching was undertaken in July on behalf of South Dublin County Council, which intends to extend the existing graveyard to the field to the north-east. The graveyard would appear to incorporate an Early Christian ecclesiastical enclosure within its southern extent.

Two trenches were mechanically opened across the proposed extension. The first was 105m long and extended from the south-eastern corner of the field (adjacent to the early enclosure) to the north-eastern corner. The second trench ran at a right angle to the first and extended for 50m into the north-western corner of the field. They were both opened to double the width of the bucket (i.e. 1.2m).

An examination of the sections did not reveal any evidence for the existence of an outer enclosure associated with the existing site. No bones were recovered from either of the trenches. The evidence from the trenching would therefore indicate that the extent of the Early Christian site is probably within the confines of the enclosure as it exists today and that associated occupation to the north-east of the site (if any such settlement existed) has been obliterated by land improvement.

Franc Myles for Margaret Gowen & Co. Ltd, 2 Killiney View, Albert Road Lower, Glenageary, Co. Dublin.

Galway**1999:284****COURT LANE, ATHENRY****Anglo-Norman town****15022 22771****99E0655**

Monitoring of groundworks associated with the installation of new ESB cables along Court Lane, Athenry, Co. Galway, was recommended as this development lay in the zone of archaeological potential and was close to Athenry Castle. Funding for this project was provided by Galway County Council.

A trench was excavated (120m long, 0.5m wide and 0.25-0.45m deep) along an existing stone wall of the park. The stratigraphy revealed little of archaeological significance. The only material of interest was loose stones found in the vicinity of the original town wall. Their presence may indicate disturbance of this feature, but, as the trench excavated was shallow (0.25m), it was not possible to determine whether the original foundations of the wall still exist. Elsewhere the stratigraphy consisted of mixed foundations of the road and park wall with occasional modern finds.

Fiona Rooney, Arch. Consultancy Ltd, Ballydavid South, Athenry, Co. Galway.

Kerry**1999:344****DROMTHACKER, TRALEE**

Adjacent to ringfort**Q154837****97E0022 ext.**

Excavations at Dromthacker were undertaken on behalf of the Institute of Technology, Tralee, before the development of a new campus (Excavations 1997, 85-6, Excavations 1998, 97-8). Part of the planning conditions requires that all ground disturbance be monitored, and as a consequence of this the excavation of ESB trench cables was monitored in August and December 1999. No archaeological feature or find was uncovered during monitoring.

Rose M. Cleary, Department of Archaeology, University College, Cork.

Laois**1999:464****AGHABOE ABBEY, AGHABOE****Archaeological complex****23314 18574****SMR 22:19****99E0592**

Monitoring of excavations was undertaken before a proposed development at Aghaboe Abbey, from 13 to 15 October 1999. The development comprised the provision of toilet facilities in the existing carpark and the installation of a floodlighting system in the grounds of the Dominican friary. The carpark site was tested by the writer in 1994 (Excavations 1994, 141), and part of the Dominican friary was excavated by Anthony Candon before a conservation project in 1986 (Excavations 1986, 22). Excavations in the carpark related to the site of the proposed toilets, septic tank, percolation area and part of the ESB cable trench, which will extend from the toilet building to the church grounds. This area was stripped of topsoil and gravelled when the carpark was developed in 1994. The gravel generally overlay a yellowish-brown, clayey sand subsoil, 0.1m thick, and this overlay a natural, light brown, clayey sand. Some fragments of human bone were found in the disturbed subsoil close to the carpark entrance. The cable trench, 0.2m wide and 0.2m deep, inside the church grounds, was manually excavated. The first section extended along the base of the enclosing boundary wall, and the topsoil consisted of a dark greyish-brown, sandy clay with moderate inclusions of stone, mortar, modern pottery sherds and glass fragments. Occasional fragments of animal and human bone were also found. The most notable find from the topsoil was a late medieval chamfered limestone jamb (0.4m x 0.17m x 0.14m). A disturbed, yellowish-brown, clayey sand subsoil was occasionally encountered at a depth of 0.25m.

The trench at the base of the boundary wall terminated at a point directly opposite the south-west corner of the church. From here the trench was taken across the gravelled area outside the west gable of the church, through the west doorway and, finally, across the gravelled interior of the church. All of this area had been archaeologically excavated and backfilled during the 1984-6 conservation project. A fragment of a rebated limestone jamb (0.23m x 0.21m x 0.1m) represented the only find of archaeological interest from the rubble fill.

Dominic Delany, 31 Ashbrook, Oranmore, Co. Galway.

Louth**1999:549****CARLINGFORD TOWN AND ENVIRONS**

Urban

98E0161

Rescue excavation and archaeological monitoring continued in Carlingford, Co. Louth. This involved the completion of the excavation at Castle Hill adjacent to King John's Castle (see Excavations 1998, 139-40) and the monitoring of sewer, water main, Telecom and ESB services at Newry Street, Castle Hill, Market Street, Shore Road and Old Quay Lane.

Dermot G. Moore, ADS Ltd, Windsor House, 11 Fairview Strand, Fairview, Dublin 3.

Louth**1999:609****XEROX/ESB ELECTRICITY SUBSTATION, MULLAGHARLIN, DUNDALK****No archaeological significance**

Owing to the construction of an Electricity Substation for Xerox Limited by Uniform Construction Limited, a large area, comprising c. 32,000m², was to be topsoil-stripped before any building work began on the site. As the site is within an area of high archaeological potential-a number of souterrains

have been noted in the surrounding area-it was suggested that monitoring of the topsoil-stripping be undertaken to find and define archaeological activity, if any, on the site.

The topsoil was stripped by a large-tracked machine (Hymac) and by bulldozer. It was then banked up in large spoilheaps that would eventually be used to create large, landscaped berms around the proposed building. Investigation of the topsoil, which had a variable depth of 0.2-0.3m, and the exposed orange, slaty, gravelly subsoil, yielded no subsoil-cut archaeological features.

Nothing of archaeological significance was uncovered during the topsoil-stripping, and development was able to proceed.

Dermot G. Moore, ADS Ltd, Windsor House,

Meath

1999:718

LACKANASH, TRIM

Post-medieval

N829572

99E0246

An assessment was requested by Meath County Council as a requirement for further information following the lodging of a planning application for 199 houses. In addition the ESB intends to run underground cables across part of the site, coming in from the Lackanash road, where a pylon is to be constructed, and then running eastwards into the adjoining housing estate.

There are no recorded monuments in the SMR for the townland. The site is between Trim and Newtown Trim, and it is likely that medieval remains survive at some point here, along with the possible survival of earlier monuments. Both fields retain evidence for ridge-and-furrow cultivation, possibly dating to the 18th century.

There is a tradition of an old road running along the southern boundary of the site, surviving in the portion of the field that runs parallel to the Lackanash road. The feature is represented by a flat area defined on the north side by a shallow ditch that slopes up to the area of the field to the north, which retains its evidence for ridge-and-furrow cultivation. The course of the ditch meanders slightly; it is c. 4m wide at the top. A small channel was cut through the north side of the ditch, which may represent a drainage feature.

The surface of the 'road' is level. If it was an old road it is not marked as such on the first edition of the OS 6-inch map and may therefore have been out of use by the 1830s. It has been built over by the houses that now front the Lackanash road to the west of the development.

The ridge and furrow respected the line of the feature, suggesting that it was in existence when the furrows were dug. Two of the fifteen trenches tested the area of the possible road, one of them in the location of the proposed pylon.

Cutting 1, a 19m-long trench, tested the possible old road, across its surface, through the ditch and through the higher ground on its north side. Ploughsoil 0.4m deep overlay yellow, sandier material 0.3m deep, overlying grey, very sandy gravel. The latter two layers were natural, and the interface between them was marked by an amount of decayed stone.

There was no evidence for a road surface underneath the sod. Both the ploughsoil and the underlying natural layers were featureless apart from the disturbance caused by the ditch along the south side of the 'road'. A stone shore was inserted at the bottom of the ditch, the top level of which was no more than 0.5m below the sod level. The shore comprised a layer of rough stones 0.5m wide. The maximum width of the ditch at the top was 2.2m. The fill of the cut of the ditch was the same material as the ploughsoil.

Cutting 7 tested the location of the proposed electricity pylon. It was within the area of the old roadway, but there appeared to have been some disturbance here caused by the piping of the ditch immediately to the west, which emerges into the ditch along the boundary of this site. Material may also have been dumped from the property immediately to the west.

The stratigraphy comprised grey ploughsoil 0.3m deep, overlying a layer of yellow clay 0.6m deep. These layers overlay a dark grey, natural, sandy gravel. The maximum depth of the trench was 1.5m.

At the south end of the trench a layer of stone immediately under the sod was exposed. These were small stones and did not have a consistent pattern, suggesting that the layer had been laid down during dumping of material in recent times. Archaeological material was not exposed in this trench.

The other trenches revealed ploughsoil overlying mixed glacial layer deposits.

Some months later a trench for an ESB cable was excavated across the site. This was monitored. The same sequence of deposits was exposed here as in the test-trenches.

Rosanne Meenan, Roestown, Drumree, Co. Meath.

Meath**1999:722****TOWNSPARK SOUTH, TRIM****Urban medieval****28018 25693 (centred on)****SMR 36:48****99E0041**

Test-trenching was carried along the route of two ESB duct-trenches between 20 and 23 January 1999. The proposed routes were within the zone of archaeological potential for Trim as identified in the Urban Survey of County Meath. Archaeological deposits discovered during the test-trenching led to further hand-excavation in selected areas and to intensive monitoring along the remainder of the duct trenches.

Duct-trench 1 ran for c. 90m in a south-east direction from Bridge Street, along the bank of the River Boyne, to the location of a proposed substation. Duct-trench 2 was in the north-west of the town. Its point of origin lay 35m from the north-west corner of the town wall. The trench then skirted the outside of the old town wall for a distance of c. 128m, to a point where it met Watergate Street.

Test-trenching

Five trial-trenches were opened along the route of the proposed development. Trenches 1-3 were along Duct-trench 1, and Trenches 4-5 were along Duct-trench 2.

Trench 1 was adjacent to the possible site of the Water Gate, which had been demolished at the turn of the century. It contained a number of archaeological features that could be divided into two phases. The first was the remains of three limestone-built walls. These were sealed by 1.1-1.2m of 19th-20th-century dumped deposits. These walls, while close to the approximate site of the Water Gate, are likely to have been later, perhaps dating to the 19th century. Local sources refer to a number of cattle pens in the area before the construction of the present carpark and swimming pool. It is therefore possible that the walls represent the remains of such a structure.

Trench 2 was roughly 35m west of Trench 1 and ran parallel to the projected line of the town wall. It revealed evidence of in situ archaeological deposits along this part of the proposed development. The first 0.5m of stratigraphy within Trench 2 consisted of episodes of relatively modern dumped material. This material sealed C14 and C17, which contained several sherds of 13th-century pottery, including part of a base of a cooking vessel.

Trenches 3-5 contained nothing of archaeological significance.

Archaeological excavation

The deposits exposed in Trench 2 were excavated between 1 and 5 February. A spread of over 16m of archaeological deposits was exposed extending eastward from the western end of Trench 2. The medieval stratigraphy was 0.5m deep at the base of the duct trench and was sealed by, on average, 0.5m of modern and 18th-19th-century dumped layers. The archaeology, as it survived, appeared to represent a series of medieval dumped deposits. The section face exposed during the excavation of Duct-trench 2 would suggest that these were dumped from west to east.

A shallow gully, C22, which was orientated north-south and was 1.6m wide and 0.61m deep, was recorded. It was filled by the medieval clays C24, C31 and C23 respectively. It is interesting to note that all the medieval deposits were confined to the east of C22, which suggested that it may have acted as some form of boundary defining a property/plot.

To the west of C22, stratigraphy consisted of 0.7m of modern and 18th-19th-century dumped layers overlying the natural clay.

Sixteen metres west of C22 lay another north-south-orientated gully, C27, which was 1.3m wide and 0.49m deep. It cut the natural gravel C28 and was filled by several episodes of silting. C25 was the only deposit that had any associated dating evidence, in the form of one sherd of modern china.

Interpretation of the excavation area toward the centre of Duct-trench 2 was made difficult by the narrowness of the area opened (0.5m) and the fact that, in places, the deposits were not bottomed out, leaving a number of stratigraphic relationships unresolved. Their proximity to the projected line of the old town wall to the south raises the possibility that they were dumped from there or perhaps from the Water Gate to the east.

Monitoring

The monitoring programme was carried out between 27 January and 5 February 1999. No features or deposits of archaeological significance were exposed along the length of Duct-trench 1. Natural geology was not reached within the trench, and the stratigraphy consisted of modern dumped deposits and rubble. No further features or deposits of archaeological significance were exposed along the length of Duct-trench 2 outside the area described above.

Rob Lynch, IAC Ltd, 8 Dungar Terrace, Dun Laoghaire.

1998**Cavan****1998:021****CATHLEEN'SFALL-ENNISKILLEN-GORTAWEE 110KM V-LINE****Burnt area****98E0592**

Testing was undertaken at different locations along the proposed Gortawee 110km V-Line.

An archaeological assessment detailed the remains in the vicinity of the proposed 110km V-Line, and as a consequence it was recommended that angle-towers (AM) or intermediate polesets (IMP) close to archaeological sites be repositioned where possible so that the necessary groundworks would not pose a threat to the monuments. Three areas were identified as requiring archaeological testing. In addition, all groundworks associated with the line were monitored. GORTOORLANAdjacent to linear feature and possible ringfort2224 3187SMR 10:16AM4 stands within 10m of a large linear feature. A single trench was cut between the proposed angle-tower location and the feature. There was no indication of any archaeological layers or deposits within the exposed section, and it appears that this feature is the result of the diversion of a nearby stream.

AM391 stands within 30m of the linear feature. A single trench 6m long, 1.4m wide and 0.8m deep was cut to the west of AM391. There were no indications of any archaeological layers or deposits, nor was any archaeological material recovered from this trench.KILSALLAGHCharcoal spread2242 3710AM360 stands on an upland slope overlooking an area of low-lying, marshy ground. This area was identified as being suitable terrain for fulachta fiadh and/or toghers.

A single trench to the south of the AM360 was positioned in an east-west direction. There was no indication of archaeological deposits within this trench.

IMP361 is to be positioned adjacent to a field boundary. The stratigraphy revealed topsoil, overlying a natural deposit of grey marl. No artefacts or archaeological deposits were identified within this cutting.

IMP362 stands within and towards the northern end of the zone of archaeological potential. Removal of the topsoil revealed a deposit of charcoal that was up to 0.1m thick, overlying a lens of natural clay mixed with charcoal. The full extent of this burnt area was revealed and measured 2.5m north-south x 2m, with an ovoid shape. No artefactual material was recovered from these deposits. Environmental analysis of these two layers was unable to determine whether this charcoal spread was a 'consequence of anthropogenic activity or the result of natural fires'. Immediately after this trench was opened the area was inundated with water, and further investigation at this site would not be possible.SNUGBOROUGHAdjacent to ringfort22634 31940SMR 10:21IMP9 and IMP386 stand within 30m of a ringfort, perched at the edge of a cliff overlooking a gully with steeply sloping sides. The power-line will span this gully, so it was not practical to reposition these polesets, which stand on a steep slope to the south-east of the ringfort.

IMP9 stood 28m from the ringfort. A trench was cut adjacent to the location of this poleset. There was no indication of artefactual material or archaeological deposits within this cutting.

IMP386 stands 20m from the ringfort. A trench was cut 3m to the west of this poleset. No archaeological deposits or artefacts were identified.

Rónán Swan, Arch-Tech Ltd, 32 Fitzwilliam Place, Dublin 2.**Clare****1998:037****DRUMCLIFF****Fulachta fiadh****R331790****SMR 33:146****98E0455**

Monitoring of the digging for an ESB pole was carried out in order to comply with a planning condition. The pole stood within an area where a number of fulachta fiadh had been noted. It was close to the western bank of the River Fergus and liable to flooding. The ground was densely covered with scrub, with a high incident of rock outcrop.

The approach was made from the northern side. Some removal of the growth and outcrop was necessary to allow access. A cutting measuring c. 1m² was made. Nothing of archaeological interest was noted.

Celie O Rahilly, Limerick Corporation, City Hall, Limerick.**Donegal****1998:103****CHURCHLAND QUARTERS, CARNDONAGH****Early ecclesiastical****2464 4448****SMR 11:61****98E0511**

Test-trenching was undertaken at the site of the proposed shelter for the Carndonagh Cross to comply with a condition of planning permission. The work was undertaken initially by H.A. King, and R. Crumlisk carried out subsequent testing and monitoring.

This is one of the most important Early Christian sites in Donegal; it was founded by St Patrick and gives the nearby town its name. It had erenaghs associated with it until the 16th century. The cross associated with the site is of national importance and, only for the strong will of a number of local people, might have never returned from a proposed journey to Dublin for a Rosc exhibition over twenty years ago. The cross is usually dated to the 7th or 8th century and originally stood in the field on the other side of the road, from where it was moved during road-widening works a number of years ago. Two small, decorated pillars (steles) flank the cross. The site of the early ecclesiastical foundation is currently occupied by a modern graveyard in which stands a Church of Ireland parish church built in the 18th century. Beside the entrance to the church, which consists of a reused 15th-century door, is a carved lintel, possibly from an earlier church. Also within the graveyard is an upright decorated pillar known as the Marigold Stone.

The site of the cross shelter consists of a small field 22m east-west by 10m, on the roadside immediately west of Donagh church. Five slit-trenches were opened, one long trench across the length of the field and four small trenches along the roadside on the line of new underground ESB cabling. The small trenches were c. 0.6m deep, and no archaeological stratigraphy was encountered. The long trench in the middle of the field consisted of brown ploughsoil to a depth of c. 0.5-0.6m, overlying yellow boulder clay. At the eastern side of the trench was evidence of a shallow ditch running north-south. Although there was no evidence of occupation in the field and the ditch had all the appearance of a recent field ditch, it was decided to undertake further testing when the site was being reduced before building works. It was also recommended that a watching brief be maintained on the demolition of the perimeter wall in case there were any worked stones incorporated in it.

Two further test-trenches were excavated by mechanical digger between 16 and 18 November. Test-trench 1 was dug 1.3m south of the long slit-trench excavated by Heather King during initial testing of the site and 0.5m west of the east site boundary. Test-trench 2 was dug 2.4m north of Ms King's trench and 1m west of the east site boundary. Both were orientated roughly east-west. Test-trench 1 was 6m long, 0.8-0.9m wide and 0.5-0.6m deep at its west end (2m max. depth at east end). Test-trench 2 was 5.8m long, 0.6-0.8m wide and 0.6m deep its west end (1.8m max. depth at east end). The monitoring involved the reduction in the level of the site by up to 1m.

The site measured 16m east-west by 10m. The excavation also involved the removal of a drystone wall along the north and east boundaries of the site.

The stratigraphy encountered in Test-trench 1 consisted of topsoil below which was yellow boulder clay over a 2m section at the west end of the trench. The final 4m of the trench at its east end revealed a different stratigraphy. Here, below the topsoil, was a light brown subsoil, 0.2m thick. Below the subsoil was a dark grey/black, stony deposit, 0.1-0.3m thick. Below the deposit was a soft and sterile, mottled yellow/grey deposit, which was 0.1-0.7m thick and was not fully excavated. Below the mottled deposit at either end were revealed the upper sections of two sides of a ditch feature that was not fully exposed. The ditch was 3.2m wide within the trench (its east side was not fully uncovered within the trench) and at least 1.4m (west side) deep and was cut into the boulder clay. The trench was not excavated below 2m (in total depth) owing to reasons of safety.

The stratigraphy encountered in Test-trench 2 was the same as in Test-trench 1. The stratigraphy over the remainder of the site to the west of the ditch feature consisted of topsoil above yellow boulder clay. The topsoil contained a small number of modern artefacts.

The three test-trenches produced evidence of a ditch feature in the general area where one would expect to find evidence of an enclosure associated with an ecclesiastical site. There is also a slight curve in evidence from north-south to north-north-east/south-south-west; however, nothing was recovered from the fills of the ditch that could date the feature. The stone facing around the perimeter was found to comprise rubble.

Heather A. King and Richard Crumlish, c/o National Monuments, Dúchas, 51 St Stephen's Green, Dublin 2.

Kerry

1998:271

GARVEY'S SUPERMARKET, HOLYGROUND, DINGLE

Monitoring

SMR 43:224

Unlicensed monitoring of ground disturbance works during the construction of an ESB substation at the back of Garvey's Supervalu Supermarket, Holyground, Dingle, Co. Kerry, took place on 8 June. Nothing of archaeological significance was noted, with only recently disturbed ground being dug into. **Isabel Bennett, Glen Fahan, Ventry, Tralee, Co. Kerry.**

Limerick

1998:408

WIDOWS' ALMS HOUSES, NICHOLAS STREET, LIMERICK

Urban

R577578

98E0047

This site lies along the southern side of the Castle Lane development next to King John's Castle. The alms houses were built in the 19th century in the former grounds of St Nicholas's parish church, which was demolished in the second half of the 17th century. The Castle Lane architectural consultants, Murray Ó Laoire Associates, suggested that a combined gas/ESB service trench be dug on the site as part of the groundwork in connection with the construction of Castle Lane. Approval to dig the trench was granted by Limerick Corporation, owners of the alms-house terrace. Work began without archaeological consultation in the garden nearest Nicholas Street on 9 January 1998 but was quickly suspended when some human bone remains were uncovered, denoting the presence of burials relating to the graveyard of the church. Following this discovery arrangements were made to have the digging of the trench archaeologically monitored. However, owing to objections from the residents and other problems, the contractor opted to lay the services along the southern side of the Castle Lane site itself. Therefore the limited area already disturbed at the eastern end of the garden was backfilled and no further work on the site took place.

Kenneth Wiggins, 17 Vartry Close, Raheen, Co. Limerick.

Offaly

1998:550

DERRYVILLA

Medieval

254758 214334

98E0315

An archaeological evaluation was undertaken during 20-31 July 1998 at the site of a burial-ground in Derryvilla townland, Co. Offaly. The area in question is the site of a sand quarry, and as a result of the quarrying activities human remains were exposed. There had been no previous indication of a burial-ground on the site. The area is a plateau forming the top of a hill. The land slopes steeply to the north and east, while the south side of the plateau corresponds with the edge of the quarry bowl. It can be presumed that this plateau originally extended southwards into the area now occupied by the quarry. Most of the exposed bones were found in the vicinity of an ESB pylon that stands on the north side of the quarry, and human remains could be seen protruding from the section face of the quarry in this area.

The purpose of the test excavation was to determine the lateral extent of the burial-ground and to give some indication of the concentration of burials within. A series of twenty hand-dug box trenches was inserted at intervals over the natural plateau that existed above and to the west of the ESB pylon. Three machine-cut trenches were also inserted outside the burials as defined by hand-testing. A fourth machine-cut trench was inserted on the south-west side of the quarry, where some fragments of human bone had been observed lying on the ground surface during the initial site visit. The stratigraphy across the site consisted of topsoil to a depth of c. 0.3m, overlying a brown, humic sand that occurred to a depth of up to almost 1m in places. Within this brown sand lay the skeletons. Beneath the brown sand lay the white, sterile sand of which the hill is composed. Burials, either disturbed or in situ, were found in eleven of the test-trenches. Most of the trenches contained occasional fragments of human bone, often within the topsoil, which had been transported

from elsewhere. All undisturbed burials, with the exception of that found in Trench 10, were orientated precisely or closely east to west, indicating that the cemetery belongs to the Christian era. The burial found in Trench 10 was orientated more closely north to south. The uncovering of parts of a skeleton where the bones were clearly arranged in the correct anatomical position was taken as adequate evidence of the existence of a burial in that location, and there was no deliberate policy of removing the human remains.

A ditch feature was discovered that appears to run north to south across the centre of the plateau. The occurrence of undisturbed burials close to the eastern side of this feature and the absence of any evidence of burial on its western side strongly suggest that this feature delineates the western boundary of the cemetery. The apparent discontinuation of bone in the section of the quarry face beyond a point 20m west of the ESB pylon corresponds with this evidence. Burials were also found right up to the edge of the plateau on all sides to the east of this ditch, and the section of the quarry face suggests that burial continued for some metres down the slope of the hill beyond the eastern edge of the plateau.

No specific attempt was made to determine the extent of stratified burial as to do so would have involved the opening of a larger area and the removal of some burials. The varying depths at which burials were found suggests that there had been occasional superimposition of interments, while the section face also gave some indication of stratified burial. However, the manner in which many of the exposed skeletons appeared to lie upon the sterile, white sand indicates that stratified burial was not the norm.

It is probable that the natural plateau on the summit of the hill acted as the focus of this burial-ground. While it is clear that an unknown portion of this burial-ground has been destroyed by quarrying on the south of the area tested, it appears that some of the western boundary of the cemetery, as defined by the ditch, is intact. It also appears likely that the topography to the north and east of the plateau has not been greatly altered, and thus the original boundary, as indicated approximately by the edge of the plateau, may be preserved on these sides.

Clare Mullins, 39 Kerdiff Park, Monread, Naas, Co. Kildare.

Wicklow

1998:691

REDFORD PARK, RATHDOWN, GREYSTONES

Medieval

97E0075 ext.

Archaeological monitoring of the placement of two ESB poles and associated stay-wires was carried out in October 1998, adjacent to St Crispen's Cell (SMR 8:12). Nothing of archaeological significance was identified during the monitoring.

Una Cosgrave, Archaeological Development Services Ltd, Windsor House, 11 Fairview Strand, Fairview, Dublin 3.

1997

Cavan

1997:014

NOLAGH, SHERCOCK

No archaeological significance

H 26963 30146

Archaeological monitoring of a foundation trench excavated for an ESB pole at Nolagh, Shercock, Co. Cavan, on 25 April 1997 close to the location of a ringfort did not reveal any features of archaeological significance.

Deirdre Murphy, Archaeological Consultancy Services Ltd, 5 Trinity Street, Drogheda, Co. Louth.

Galway

1997:207

BLAKE'S TOWER, 22-24 QUAY STREET, GALWAY

Urban medieval

12986 22525

96E0364

Archaeological monitoring of refurbishment work at Blake's Tower took place from December 1996 to March 1997. In the course of the monitoring, two medieval windows were unblocked, medieval walls

were cleaned and limewashed in an approved manner, and a trench was excavated on Kirwin's Lane to facilitate the installation of ESB cables. No archaeological material was recovered from this trench.
Anne Connolly, Archaeological Services Unit Ltd, Purcell House, Oranmore, Co. Galway.

Kildare

1997:281

MOORE ABBEY, MONASTEREVIN

Environs of Cistercian abbey

N627099

SMR 26:1-3

96E0024ext.

Excavations at Moore Abbey in 1996 revealed a timber-lined pit, probably of medieval date, located on the original bank of the River Barrow, and an area of ironworking debris upslope from this. Monitoring of the foundation trenches and ground clearance associated with development at the site was also carried out in 1996 (Excavations 1996, 53).

Monitoring of all service trench excavations associated with the development was carried out in February and March of 1997. All archaeological works at the site were in compliance with a condition of planning.

During the excavation of a trench for an ESB cable which was to carry power from a small substation located north of, but close to, the old medieval abbey, several human burials were identified at a depth of approximately 0.5m beneath the surface. What may have been partly disturbed burials were also identified at a higher level within the trench, as well as possible grave-cuts directly beneath the sod. It was possible to reroute most of the line of the proposed cable in order to avoid further disturbance to the burials, while the level of the proposed ESB cable was raised over the remainder of the route to a level which did not encroach upon the burials.

People recall burials being disturbed during earlier building works at the abbey and it would appear that the burial-ground may have extended up to 50m north of the old medieval buildings.

What appeared to be a collapsed stone wall was also met during the excavation of the ESB cable trench. This feature consisted of large angular stones, up to 0.3m in length, which were encountered at a depth of 0.5m below ground level, continuing to a depth of at least 0.3m. It measured 2.1m north-south but its east-west extent could not be determined. Mortar was attached to some of the stones and there were fragments of mortar in the fill between the stones. Fragments of human bone were also found amidst the rubble associated with the stone, suggesting that this feature post-dated, at least, the earliest use of the ground as a burial area. The presence of burials south of this feature and their absence in a substantial area to the north of it may indicate that it delineated the burial area in some way.

No further features or deposits of archaeological interest were uncovered during the course of the watching brief.

Clare Mullins, 39 Kerdiff Park, Monread, Naas, Co. Kildare.

Westmeath

1997:590

HARBOUR STREET/FRIARS MILL ROAD/ BARRACK STREET, MULLINGAR

No archaeological significance

N441533

97E084

Archaeological monitoring of two trenches for ESB cables was carried out between 22 April and 24 May 1997. The pipeline in Barrack Street was located outside the defined area of archaeological potential but monitoring was recommended owing to the excavation of a medieval cemetery behind St Andrews Terrace by Michael Gibbons in October 1996 (95E273). No archaeological finds were observed during the course of the monitoring.

Colin D. Gracie, 8 Abbeydale Close, Lucan, Co. Dublin, for Valerie J. Keeley Ltd.

1996

Cork

1996:044

Liberty Street to Marina, Cork

Urban**W67 1718****SMR 74:03401****96E163**

During the laying of cables by the ESB from the Marina to Liberty Street, Cork, all trenches were monitored. No archaeological remains were disturbed.

Sheila Lane, 1 Charlemont Heights, Coach Hill, Rochestown, Cork.

Westmeath**1996:394****Austin Friar Street and Barrack Street, Mullingar****Urban medieval****N440530****96E069**

In the course of archaeological monitoring of the laying of Telecom Eireann telephone cables in trenches in the footpaths along the southern side of Pearse Street and Austin Friar Street in the period mid-April to early July, a quantity of previously disturbed human skeletal remains came to light close to the western end of Austin Friar Street. The trench in the footpath had been used in earlier years to accommodate an electricity cable at a depth of some 0.7m below the surface. Following the laying down of the ESB cable, the skeletal remains had been returned to the trench and were found overlying the cable.

The location of the remains on the southern side of Austin Friar Street was immediately opposite the site of the human bones investigated on the northern side of the street by C. Duffy and V.J. Keeley in 1994 (Excavations 1994, 83) and in the general vicinity of the discovery of nine human burials from Site A, Austin Friar Street, reported on by Rosanne Meenan also in 1994 (Excavations 1994, 83).

A short length of trench was also mechanically excavated by Telecom Eireann to accommodate telephone cables in the footpath at the western end of Barrack Street and along its northern side. A number of dwelling-houses had originally fronted onto the footpath and had been serviced by water-pipes and town gaspipes running under the footpath. A number of previously disturbed skeletal remains were recovered from the trench. In one instance, part of one skeleton was articulated; it was orientated east-west and lay at a depth of 0.5m below the present surface.

The location of these human remains was in close proximity to the presumed site of St Mary's Priory, which was founded in Mullingar for the Canons Regular of St Augustine by Ralph Petit, bishop of Meath, c. 1227. The priory was dissolved in 1540 and was taken over by Augustinian friars before 1643. Archaeological excavation at this presumed priory site by Michael Gibbons in October 1996 revealed numerous burials and some artefacts.

Brendan O Riordain, Burgage More, Blessington, Co. Wicklow, for Project Director V.J. Keeley, Duke St., Athy, Co. Kildare.

1995-1994**No relevant excavations recorded.**

1993**Donegal****1993:038****Shannagh Lismontigley, Figart, Tullyvinny, Cooladerry, Tops Demesne, Magherahaan.****No archaeological significance****C250100 (centred on)****93E0095**

This work was carried out during the construction of a new 110kv line between Letterkenny, Co. Donegal, and Strabane, Co. Derry, by the ESB in the summer months of 1993. Three sections along the route were deemed to be close enough to archaeological sites to merit monitoring. These sections comprised 26 construction sites in all, 22 at which double wood polesets were erected and four where angle towers (small pylons) were erected. Monitoring was involved at the 22 pole sites and trial trenching at the four tower sites. The 22 double wood pole sites were dug to a maximum depth of 2.5m and a width of 0.77m. They sloped up to the surface from their maximum depth, gradually, over a distance of 4m. Each leg of the four, at the base of each angle tower was, also dug to 2.5m deep. Each of these holes were 2.3m sq.

The four angle tower sites produced a modern salt-glazed stoneware jar and three pottery sherds of modern and post-medieval date. The double wood pole sites produced seven pottery sherds of modern and post-medieval date, a clay pipe and a chunk of translucent honey-coloured flint.

No archaeological structures or stratigraphy were encountered during the work. Considering no known archaeological site was being excavated, it is not surprising that the finds were limited and of little importance. However, it is disappointing that more flint was not encountered in this flint-rich area of the north-west.

Richard Crumlish, Churchtown, Carndonagh, Co. Donegal.

1992

No relevant excavations recorded

1991

Offaly

1991:109

Bridge St./Mill Lane, Birr

Urban post-medieval

N 057045

This survey and archaeological report were compiled at the request of the ESB in advance of obtaining planning permission to build new offices at Bridge St., Birr. The site was located within the urban zone of archaeological potential and in accordance with recommendations set down in the Urban Archaeological Report for Co. Offaly funding was made available to carry out trial trenching on the site and to do a survey of the buildings on Bridge St and Mill Lane prior to demolition.

The earliest recorded settlement at Birr is of a monastery founded by St Brendan although the exact location of this site is unknown. In 1177 the territory of Eile Uí Cearbaill, in which the town of Birr is situated, was granted by Henry II to Philip de Braose and by 1207 an Anglo-Norman settlement had been established at 'Byrre' when Murchad Ua Briain 'burnt the whole town' (A. Clon.). This settlement had probably collapsed by the middle of the 14th century and the town reverted to the control of the Uí Cearbaill until 1621 when Laurence Parsons was granted the castle and lands around Birr. It was during the 17th century that the borough of Birr was established largely under the influence of Laurence Parsons and by the late 17th century the town had assumed much of the plan and characteristics which it exhibits today. This is illustrated on a map of the town which was prepared by the engineer Michael Richards in 1691.

The site on which the ESB propose to build is shown on this map as having buildings on the Bridge St facade and some possible buildings on the north side of the site. There was an open area from Bridge St to a corn mill, approximately where the Mill Lane and the Manor Saw Mill are today. On the south side of the site the town defences are indicated running west from the rear of Bridge St towards the mill. It is uncertain if these town defences consisted of a wall or a bank and ditch (Bradley et al 1986, 24) although a reference in the Life of William III by Harris (Cooke 1875, 85) suggests that the town prior to 1690 had been open and defenceless and the Narrative of Sir Laurence Parsons records the fortification of the town in September 1690 by twelve hundred men who were employed making trenches and fortifications with sodworks and wood (Cooke 1875, 85). These references would appear to indicate that the town was undefended until 1690 and that it was during the Jacobite wars that the town first acquired defences in the form of a ditch and bank. The oldest reference to the site itself is from one year earlier when it was recorded that at least six houses in Mill Lane were burned (Cooke 1875, 394). This reference indicates that Mill Lane was in existence by that date although not indicated on the Richards map.

The site

The site consists of a block of land between Bridge St on the west, the Manor Saw Mill on the east, the mill tailrace and the Camcor River on the south and the rear of the buildings which face onto Brendan St on the north. The main feature on the site was Mill Lane which ran from Bridge St on the west to the Manor Saw Mill on the east.

The survey

A photographic record and survey, consisting of ground plans, was made of the buildings which fronted onto Bridge St and to the north and south of Mill Lane. Mill Lane extended from Bridge St towards the Manor Saw Mill for a distance of c. 66m. It was open at the Bridge St end but had an arched gateway with traces of an iron gate at the east end. On either side of the lane there were large open areas enclosed by randomly coursed rubble limestone walls of c. 0.55m thickness. These spaces or yards, in which there is evidence for at least two periods of use, were bounded on the south by the

still water of the obsolete tailrace and on the north by slightly higher ground. These areas have no evidence for roofing and may have been yards associated with the corn mill. Secondary use of these areas involved the insertion of small single and two storied houses into them. The walls of these secondary buildings were generally thinner and contained quantities of brick. Many of the doors, windows and fireplaces were also constructed of brick. These houses were also mainly unroofed. A date for the complex is not known but the yards may be 18th century in date with secondary use in the 19th century. An oak lintel removed from one of the houses may be a reused 17th-century lintel as it is similar to one which still survives in a house on Brendan St. This latter lintel is also of oak, has similar dowels and has a carved date of 1679. Analysis of the undated lintel by the Palaeoecology Laboratory in Belfast was unable to provide a definite date for the timber as there were insufficient growth rings present.

The excavation

Nine cuttings were opened to ascertain if there were any pre-1700 features or deposits on the site and to locate if possible the town defences. The underlying natural deposits were located at a maximum depth of 1.6m and finds included bones, glass bottles, stone wares, blue wares, fragment of a bone disc, nails, cut lead, white, brown and cream wares (glazed and unglazed), clay pipes and iron objects. No trace of Early Christian or Anglo-Norman settlement was uncovered, nor was any trace of 17th-century material found although the area was obviously extensively used during the 18th and 19th centuries. Mill Lane may have had its origins in the late 17th century but no trace of the burning of houses in the lane (Cooke 1875, 394) was uncovered.

There does not appear to be any evidence in the form of a wall or a large ditch and bank which could have functioned as the town defences although to rule out this possibility completely more excavation would be required. However, as the ESB plans for the site do not include digging foundations no further work is envisaged. References Bradley, J. et al., 1986, Co. Offaly Urban Archaeology report (unpublished) Cooke, T. Lalor, 1875, The Early History of the town of Birr or Parsonstown. Dublin

Heather A. King, Skidoo, Ballyboughal, Co. Dublin.

1990-1975

No relevant investigations recorded.

Wexford

1975:37

CARNSORE

Church; Enclosure; Well

T 120 040

Excavations here were necessitated by development plans of the Electricity Supply Board, who financed the work.

St. Vogue's Church and Enclosure (Site I)

St. Vogue's Church is a small building (9.48m. x 4.7m) rectangular in plan and set within a large D-shaped enclosure, the limits of which are defined by an earthen bank. The original shape of this enclosure was possibly circular or oval, but a modern track way cuts through its E. edge giving the enclosure its present shape.

The area within the enclosure and the church was fully excavated, and four main phases of activity were recognised.

Phase 1. — Evidence of an early wooden building, in the form of post-holes, was found, partly underlying the stone church. A total of 29 post-holes and seven stake-holes were found inside the stone church and seven post-holes were uncovered immediately to the N. and S. of the stone church. Both the post-holes and stake-holes were cut into the undisturbed subsoil and were overlain by a thick layer of carbonised wood and charcoal. The bright red oxidised soil suggested a period of intense burning, possibly the burning down of the wooden building. Unfortunately, because of the overlying stone church, the complete plan of any one wooden structure could not be determined. However the outline of a small rectangular building (2.25m. x 1.5m) may be tentatively suggested. The complete absence of domestic refuse in this immediate area suggests that it was not a domestic structure and on analogy with other such sites the likelihood is that it was a small oratory.

Further evidence of activity was uncovered in the SE. quadrant of the enclosure, in the form of shallow trenches, post-holes and burnt areas. The structural relationship between the enclosing bank and the internal features was difficult to determine but the weight of the evidence suggests that it belongs to this phase. Three samples of charcoal from this phase have been submitted to the Harwell Laboratories for C14 dating and are listed below.

Phase 2. — The basal courses of the original stone church were uncovered directly overlying the features of Phase 1. The narrow window opening in the E. gable appears to belong to the original stone church and the base of the original stone altar was also uncovered.

Excavation of the SE. and SW. quadrants revealed traces of domestic habitation. Approximately 4m. SE. of the church, the stone foundations of a rectangular house were uncovered. Immediately outside the E. wall of the house, a large spread of limpet and periwinkle shells were revealed. Also, the great bulk of pottery recovered from the site as a whole was concentrated in the areas immediately outside the house walls and in the interior of the house itself. The most common type of pot represented is a shallow dish made from a very coarse gritty clay mix — many of the sherds being coated with carbonised soot. Literary evidence and the evidence supplied by various pottery types suggest a date of not earlier than the 15th century for this phase.

Phase 3. — Over the past 200 — 300 years, the enclosure and the interior of the church have been used as the burial places for bodies washed up in the nearby shore. Seventeen burials were found in the enclosure and a further ten were recovered from the interior of the church. Fragments of military uniforms, buttons and leather boots and shoes were recovered from some of the burials.

Phase 4. — In the 1940s, the walls of the church were rebuilt and the outer edges of the E. gable were repaired. A flat-headed window in the S. wall was repaired and the N. doorway was rebuilt over the site of the original one. The upper part of the altar was also rebuilt. In the NE. part of the enclosure, a small area has been fenced off recently for use as a garden and the E. and SE. areas were also damaged in the construction of a garden area.

St. Vogue's Well (Site 2)

The site of St. Vogue's Well, 140m. E. of the church was also investigated. The area has been greatly disturbed over the years — even to a depth of 2m. below the bottom of the well. Very little of the original well survives and no finds were recovered.

Site of Dolmen (Site 3)

At the time of the Ordnance Survey (1840s) fragments of a very ruined stone structure existed almost on the cliff edge at Carnsore Point. The area indicated on the map was excavated but no trace of the structure was found. It is quite likely that over the past 150 years sea erosion may have removed whatever remained on it.

Appendix: Radio Carbon dates from Phase 1 — St. Vogue's Church

(a) Har-1380 Age bp 1290 ±80

(b) Har-1382 Age bp 1390 ±80

(No corrections have been applied).

Sample (a) consisted of charcoal from three adjacent postholes belonging to the postulated oratory.

Sample (b) consisted of charcoal from a Phase 1 trench, part of a complex of features associated with the oratory. The dates confirm the suggested Early Christian date for the oratory. They also suggest that there was a considerable lapse of time between the destruction of Phase 1 and the building of the stone church.

A. Lynch and M. Cahill, University College, Cork

1974-1973

No relevant investigations recorded.

1972

Wicklow

1972:0033

St Kevin's Road (Brockagh td.)

Pilgrims' Road

0 075205

At the invitation of the Electricity Supply Board the National Museum of Ireland carried out a brief examination of St. Kevin's Road in Brockagh td. Adjacent to the Turlough Hill Pumped Storage Scheme on Camaderry Mountain. The investigation was part of the Board's programme of developing the amenities of the area. A previous excavation had been carried out by Mr. A.B. O Riordain of the National Museum in 1968 and a complete survey of the road was made by Mr. Patrick Healy of Sandymount, Dublin, on behalf of the Board.

St. Kevin's Road is traditionally regarded as having run from Glendalough to Hollywood over the Wicklow gap. It was used as a pilgrims' road until the 19th century. Excavation has revealed that the road was built of roughly rectangular granite slabs, some resting directly on the surface of the bog and others resting on smaller stones. At no point could a man-made substratum be identified. The

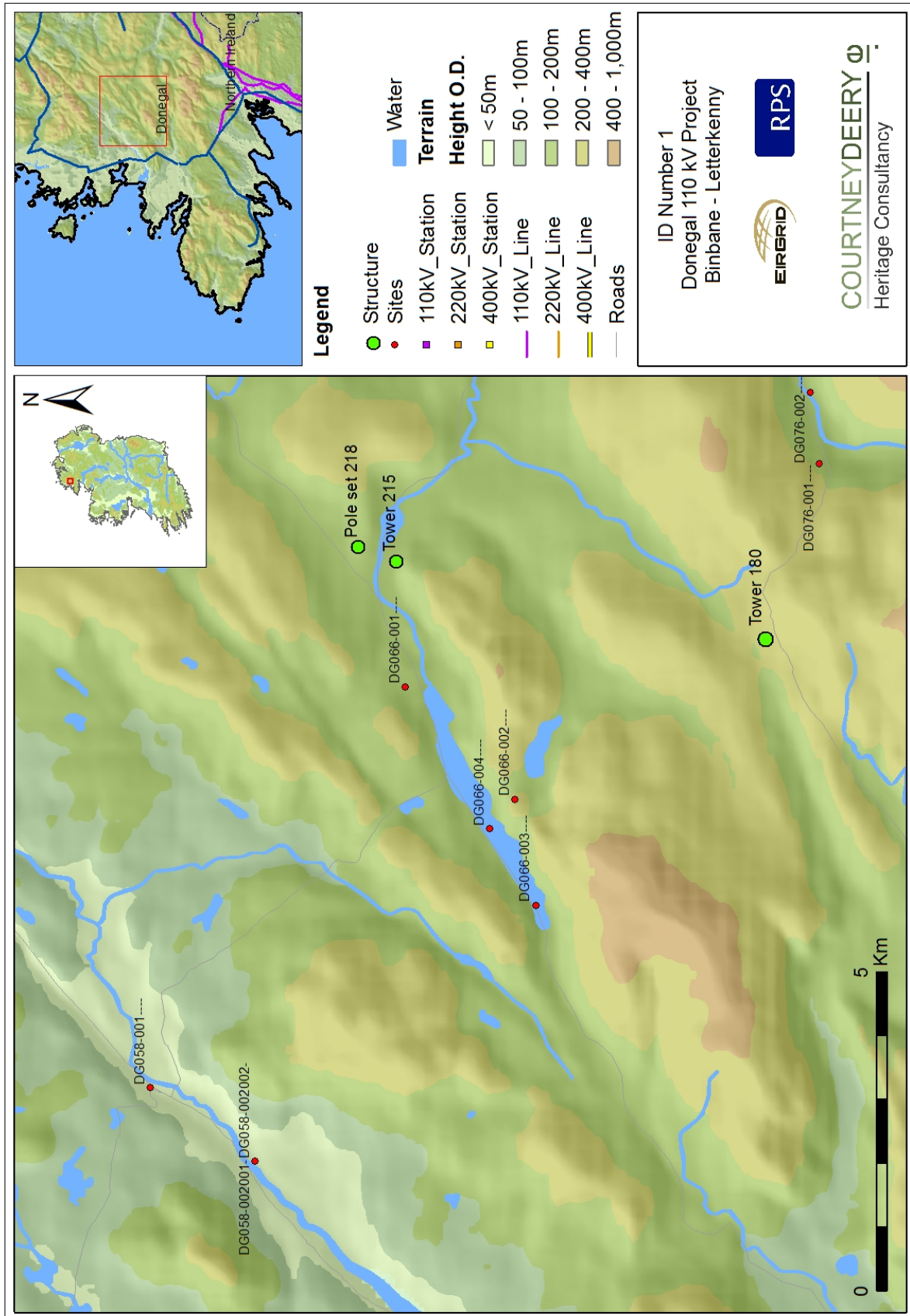
surface of the road was covered by an average depth of 15cms of peat. A bronze token, possibly 17th century in date, was found lying on the paving.

The surface of the road was so irregular that it could hardly have been used for vehicles or people on horseback. The excavated sections would seem to support the tradition that the road had been built so that pilgrims could pass fairly conveniently between the shrines of St. Kevin at Glendalough and Hollywood. The date of its building is unknown.

Messrs. M. Ryan & P. Wallace, Irish Antiquities Division, National Museum of Ireland

APPENDIX C

SITE INVENTORY



ID No	1	
County	Donegal	
Townlands	Meenasrone North, Bellanamore, Clogher East	
Transmission line/substation/ UGC (Underground Cable)		
Donegal 110 kV Project, Binebane –Letterkenny		
Transmission Infrastructure		
Double wooden polesets (218) and angle towers (215 and 180).		
This project is presently under construction and as a condition of planning it is being monitored by a licensed archaeologist.		
Protected Status/Unique ID	Site Type	NGR
DG074-006, Clonconwal	Ringfort	17708/39232
DG074-014, Gortnacart Glebe,	Cashel	17716/39068
These archaeological monuments are c. 250m from the line.		
There are no protected structures within 500m of this transmission project.		
Impact		
No impact to date		
Condition		
Typical		

Site Description

For the purpose of the evidence based study areas identified as being of cultural heritage significance were visited, namely the railway embankment at Meenasrone North (Tower 215) and an area of cultural heritage note highlighted by the monitoring archaeologist in Clogher East townland (Tower 180).

The cultural heritage impact statement associated with this project identified five areas of archaeological and cultural heritage potential (Donegal 110 kV Project EIS, November 2008, Chapter 14) (see extract from the EIS, table 14.2 below).

Table 14.2: Cultural Heritage Impacts of Binbane - Letterkenny 110kV Line

Feature/Area	Section	Townland	Impact	Distance to line
Meenacahan School	ST1-ST2	Meenacahan	Indirect (visual)	30m
Area of archaeological potential: southern portion	ST69 – ST78	Kilrean Lower & Tullyard	Potential Direct	0m
Railway embankment	ST118	Straboy	Direct	0m
Railway embankment	ST212- ST215	Meenascrone North	Direct	0m
Ruined cottage	ST312 – ST313	Ballystrang	Indirect	35m

#

Donegal 110 kV Project EIS, November 2008, Chapter 14, extract from the EIS, Table 14.2

In Bellanamore townland the construction techniques to erect a double wooden poleset (No 218) in bogland were observed and also examined to ascertain the archaeological potential of the area.

The EIS references the study areas as follows:

ST180-ST199: There are several houses located along the adjacent minor roadway and many of these are also indicated on the 1906 edition OS map. None of these will be directly impacted upon.

ST212-ST215: The line extends parallel to a disused railway (Stranorlar & Glenties Branch) and crosses the disused railway embankment on the southern banks of the River Finn. This embankment may potentially be directly impacted by the line. There is a level crossing and associated building located c. 400m west of ST197 but this will not be impacted upon.

ST215-ST220: Scallan Bridge and Bellanamore School House are located c. 400m to the west and both are indicated on the 1906 edition OS map and are still extant. None of these structures will be impacted upon.

The EIS also recognises that due to extensive areas of bogland unidentified archaeological features may be revealed buried beneath the bog. The majority of recorded artefacts for the area have been retrieved from bog contexts.

The EIS recommends that the excavation for foundations be archaeologically monitored given the potential of finding archaeological remains or stray finds in bog contexts (section 14.3 Mitigation).

Planning history

An Bord Pleanála (05.VA0003) recommended (Condition 3) that in order to facilitate the planning authority in the archaeological appraisal of the site and in preserving and recording or otherwise protecting archaeological materials or features which may exist within the site. In this regard, the undertaker shall:-

- (a) *Notify the planning authority in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development and*
- (b) *Employ a suitably qualified archaeologist prior to the commencement of development. The archaeologist shall assess the site and monitor all site development works.*

The assessment shall address the following issues:-

- (i) *The nature and location of archaeological material on the site, and*
- (ii) *The impact of the proposed development on such archaeological material.*

Prior to commencement of development, a report containing the results of the assessment shall be submitted to the planning authority. Arising from this assessment, the undertaker shall agree with the planning authority details regarding any further archaeological requirements (including, if necessary, archaeological excavation) prior to commencement of construction works. In default of agreement, the details shall be referred to An Bord Pleanála for determination.

The reason for these conditions was given were:-

'in order to conserve the archaeological heritage of the site and to secure the preservation of any remains which may exist within the site'.

Historic mapping

Bellanamore townland and Clogher East townlands are shown as bogland on the first edition OS 6-inch mapping (1837-43). The structure noted in Clogher East townland is not shown on the first or 25-inch edition of the OS mapping. The railway in Meenasrone North townland is shown on the 25-inch edition.

Observations from site visit (level of impact, significance of impact)

Double wooden poleset (No. 218) – Bellanamore townland

Construction techniques were observed at the poleset. In this area there is the potential to reveal buried archaeological features given the presence of cutaway bog. No features were noted during the excavation required for this poleset.

A description of the work undertaken is as follows:-

A single trench approximately 2.3m deep was required for each of the poles (Illus. C 2).



Illus. C 1 Trench required for the upright pole

Sleepers are then placed at right angles to the poles and existing trench is extended creating a T-shaped trench (Illus. B 2).



Illus. C 2 Trench required for sleepers used to stabilise the pole

Four trenches (c. 2m x 2m x 1.8-2m deep) were required for the stay lines (Illus. C 3), stays are required to stabilise 110 kV lines only and are used on all of the polesets for the Donegal project.



Illus. C 3 Trench required for stay lines, with stay rod in place

The ground is then prepared for an earth mat/ring; in this case a single trench measuring approximately 12m x 10m was excavated around the base of the polesets (Illus. C 4). Earth rings depend on the topography and can be circular or square in extent depending on the terrain.



Illus. C 4 Excavation trench required for the earth ring



Illus. C 5 Finished poleset (No 219) with stay lines in place

Tower (No. 215) - Meenasrone North

A steel lattice tower has been placed adjacent to the railway embankment. The embankment has been covered with a geo-textile terram layer, raised with introduced hardcore and used as an access road (Illus. C 6 and C 7). The process was designed to be reversible.



Illus. C 6 New surface of the dismantled railway embankment which acts as an access route

An area was cleared of vegetation adjacent to the railway and a 3m x 3m area was excavated for each of four pads for the tower. This work was archaeologically monitored, nothing of archaeological significance was revealed.



Illus. C 7 Tower (No 215) adjacent to dismantled railway embankment

Tower (No. 180) – Clogher East

Tower No. 180 was visited. An old track providing access to a ruined farmstead/ cottage was upgraded to a stone road. Consultation with the monitoring archaeologist took place to ensure that the ruined structure was avoided by the construction traffic and temporary access way required to build this tower (Illus. C 8).



Illus. C 8 Farmstead in ruin avoided by stone access road to tower (No 180)

Where the old track terminated, bog mats were used to provide access to the tower (Illus. C 9), the construction and excavation of the four footings required to stabilise the tower was archaeologically monitored and no finds were revealed.

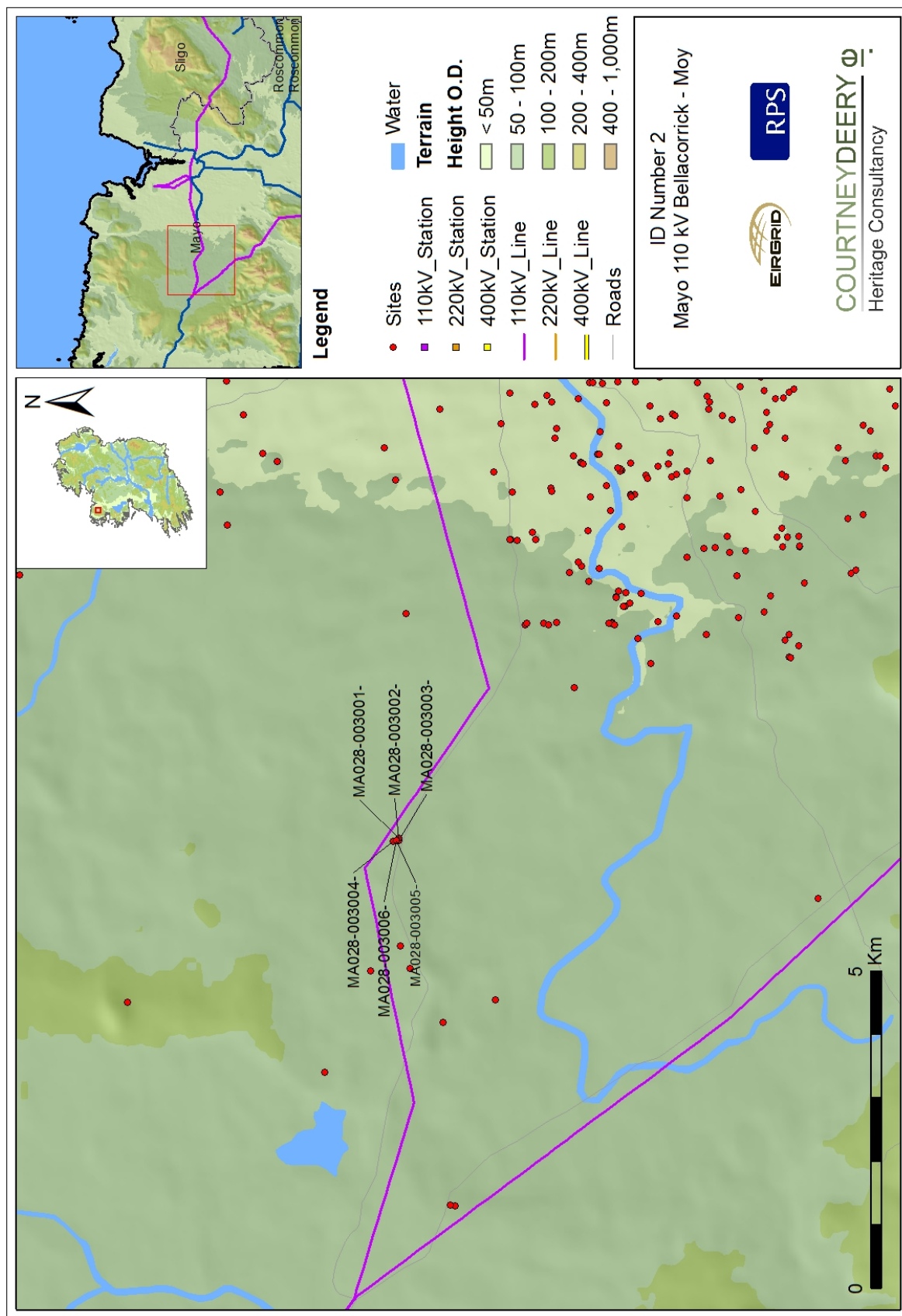


Illus. C 9 Temporary bog mat access route to tower (No 180)

To date no archaeological finds or features have been revealed by the monitoring archaeologist on this scheme apart from nineteenth century pottery sherds and clay pipes which may assist a commentary on the relatively recent social history of the area. The consultant archaeologist is required on site for all excavation activity and for consultation in relation to the routing of access ways required for conservation and ecological purposes (Illus. C 10).



Illus. C 10 The excavation required for each poleset is monitored by the consultant archaeologist (Poleset 177 looking west)



ID No	2	
County	Mayo	
Townlands	Eskeragh	
Transmission line/substation/ UGC		
110 kV Bellacorrick - Moy		
Transmission Infrastructure		
Double wooden poleset		
Protected Status/Unique ID	Site Type	NGR
MA028-003004	Stone row	104901, 318914
MA028-003006	Fulacht fia	104920, 318864
MA028-003003	Court tomb	104911, 318823
MA028-003001	Field boundary	104960, 318822
MA028-003002	Standing Stone	104960, 318822
MA028-003005	Enclosure	104960, 318822
Other Site Types		
Bogland archaeological potential		
Impact		
Slight		
Condition		
Typical		

Site Description

This pre-bog archaeological complex of prehistoric monuments is located in rough pasture and bogland on a ridge. The townland name Eskeragh is derived from the Irish *Esker* meaning a place of high ground, settlement in the area is placed along this ridge as it rises out of the bogland. The possible court tomb is described in the Survey of Megalithic Tombs of Ireland (deValera & Ó Nualláin 1964) and archaeologist, Margaret Keane identified additional monuments in her MA thesis in the 1980s.

Planning history (if applicable)

Originally part of Bellacorrick–Sligo line which was constructed in 1969, refurbishment of this line took place in 2002. The Mayo-Galway Gas Pipeline development crossed to the south of Eskeragh and this archaeological complex. Eskeragh was identified in the EIS (Arup, 2000) as an area of archaeological potential. At the oral hearing no issues were raised in relation to cultural heritage and the gas pipeline route. A monitoring condition was attached to the project by An Bord Pleanála and this work was carried out by ACS Ltd (2002–2003). No archaeological material was revealed from the Eskeragh area and the surrounding bogland.

Historic mapping

The historic map shows an undeveloped bog landscape. There are no features of archaeological/architectural heritage interest noted in the field where the double wooden polesets are now located (Illus. C 11). There is a cluster of structures to the northwest.



Illus. C 11: First edition Ordnance Survey 6-inch map showing marginal bogland nature of the area

Observations from site visit (level of impact, significance of impact)

This pre-bog complex of archaeological pre-historic monuments and features is located on a ridge 130m to the south (closest monument, stone row MA028-003004) of the nearest double poleset (Illus. C 12). The transmission project does not impact on the known recorded remains.

The standing stone row is located c. 130m south of the double wooden poleset. The enclosure, standing stone and field boundary are located c. 201m to the south while the court tomb is located c. 219m south of the double wooden poleset.

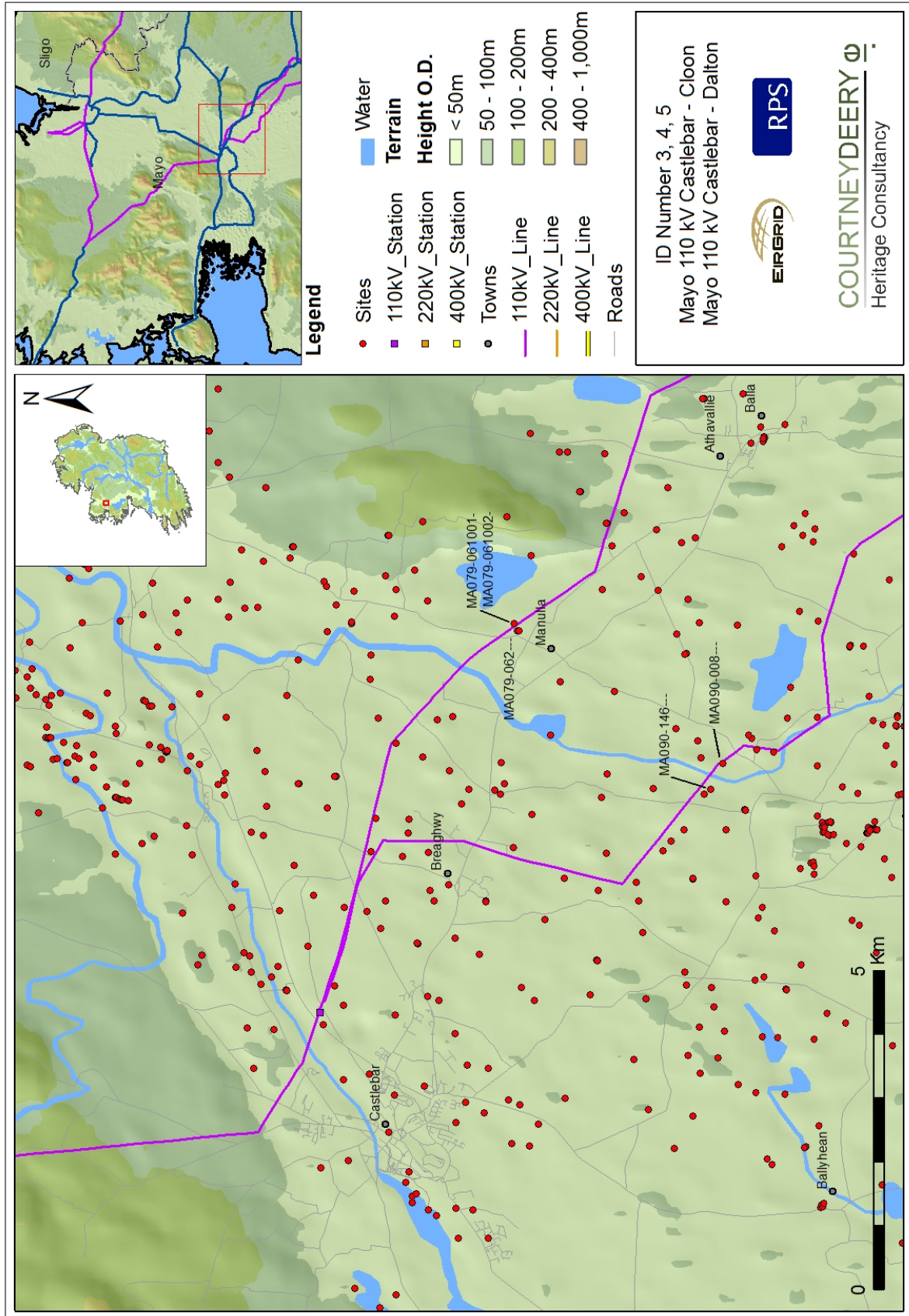


Illus. C 12 View north-easterly towards transmission line and general area of the recorded monuments



Illus. C 13 General view east towards the transmission line showing the bogland

The OHL traverses the bogland from the north to northeast of the archaeological complex (Illus. C 13). However in landscapes such as this there is the potential to reveal extensive sub surface remains such as field systems, careful planning and if necessary field/invasive work at the routing stage of a project is required to identify low visibility sites such as standing stones and subsurface remains.



ID No	3	
County	Mayo	
Townlands	Elmhall	
Transmission line/substation/ UGC		
110 kV Castlebar - Cloon		
Transmission Infrastructure		
Wooden poleset		
Protected Status/Unique ID	Site Type	NGR
MA090-146	House 18 th -19 th century	12000, 28536
Other Site Types		
Walled garden associated with Elmhall House which is of architectural and cultural heritage interest.		
Impact		
There is a significant impact on the walled garden feature		
Condition		
Non-standard		

Site Description

This house was built by the Cuffe family (Belcarra Survey 1988-89). There is no further information in relation to the 18th -19th century house at Elmhall in the RMP files.

Planning history (if applicable)

Archaeological testing took place at a set of double poles erected near the walled garden of Elmhall House, Elmhall, Co. Mayo. The enclosing wall is substantial and in places stands up to 3.5m high. Testing at the poles site was carried out on 24 August 2002. A single trench was excavated. Topsoil and sod directly overlay bedrock. Nothing of archaeological significance was noted (Moore Ltd, 02E1290).

Historic mapping

The extensive walled garden is not specifically recorded in the RMP but is associated with the recorded monument Elmhall House. The feature is difficult to discern on aerial photographs and historic mapping and demonstrates the necessity of field inspection in order that features of a cultural heritage interest and be identified and avoided.

Observations from site visit (level of impact, significance of impact)

No features were noted as a result of test excavation. However, the walled garden is now traversed in an east–west direction by overhead transmission lines and there is a double poleset located immediately adjacent to the eastern wall which is approximately 3–3.5m in height. There is a significant impact on the setting of the walled garden as the overhead line spans directly over it (Illus. C 14 & C 15). The visual impact is best observed from an elevated position from the east.



Illus. C 14 View west along the transmission line from an elevated position of the Elmhall walled garden (the wall shown in the foreground is the eastern wall of the garden)



Illus. C 15 Distant view from the east showing Elm Hall and the walled garden and the transmission line

The walled garden is part of the curtilage of the property, it would have been more appropriate to place the transmission line on the outer perimeter of the walls. Spanning the feature is considered to be inappropriate.

ID No	4	
County	Mayo	
Townlands	Rinnahulty	
Transmission line/substation/ UGC		
110 kV Castlebar- Dalton		
Transmission Infrastructure		
Wooden poleset		
Protected Status/Unique ID	Site Type	NGR
MA079-062	Ritual Site, holy well	122485, 288381
MA079-061001	Children's burial ground (CBG) & Church site	122594, 288453
MA079-061002	Castle	122485, 288406
Other Site Types		
Vernacular architectural structures; a barrel vaulted corrugated iron shed, a dwelling and stone bridge.		
Impact		
Slight Impact to the recorded monument complex. There is no impact on the roadside architectural heritage features.		
Condition		
Typical		

Site Description

The holy well known as Adam's Well was situated on a gentle north northwest facing slope in marginal pasture. The well has been filled in and there are no surface remains. In the 'History of the county of Mayo to the Close of the Sixteenth Century' by Hubert Thomas Knox, 1908, the site of the well is described as follows:

'He uncovered a dolmen built over the holy well at Manualla in the presence of a crowd of the Druids and heathen of the country who had worshipped the well. It was called *Slan*, and from it the church and parish were called Slanpatrick down to the sixteenth century. The uncovering seems to have been a formal, prearranged act, that it might be seen whether the god of the well would punish the

Christian who interfered with his alter, or a formal abolition of the worship. It seems clear that the *Corcu Temne* as a tribe, and their subjects, now generally adopted Christianity’.

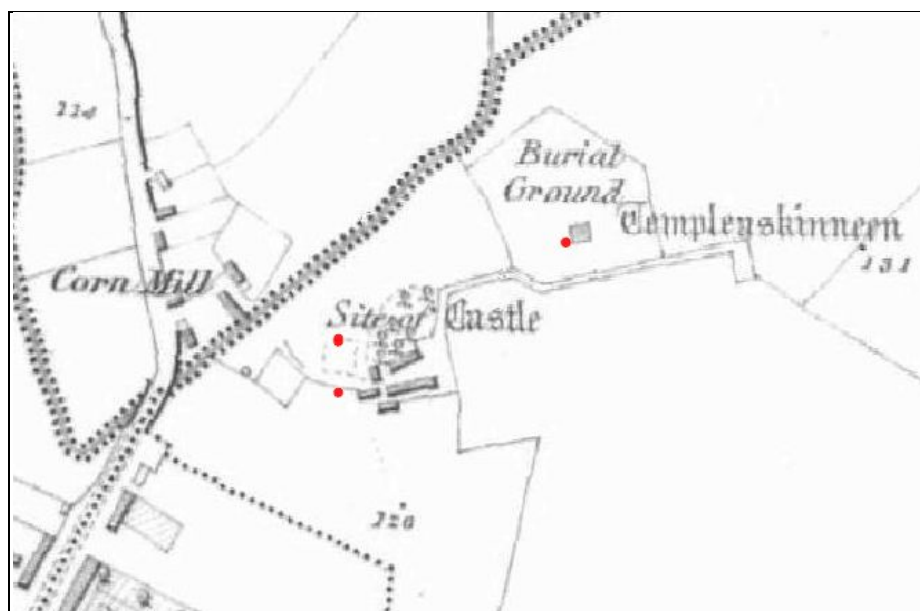
The children’s burial ground and church site was last visited by the Archaeological Survey in 1996. It was then described as a rectangular church; 11.5m west northwest- east south east and 6.2m north northeast- south southwest. It is defined by the basal portions of walls of drystone masonry (0.87m wide). Some large stones are incorporated into the walls. No features are now identifiable. The site has been reused as a children’s burial ground. The interior of the church has been filled with small and medium sized stones forming a platform. Protruding from this are a small number of low uninscribed upright stones – presumably marking the graves of the unfortunate dead children.

Planning history (if applicable)

Original line constructed in 1961/62. No further details are available.

Historic mapping

The sites are indicated on the first edition 6- inch Ordnance Survey mapping (Illus. C 16). The archaeological features are shown as ‘castle (site of)’ ‘Templeashinneen (site of) (Children’s Burial Gd.)’ and ‘Adam’s Well (site of)’ on the revised edition Ordnance Survey 6- inch mapping. There are no features of archaeological/architectural heritage interest noted in the field where the double wooden polesets are now located.



Illus. C 16 First edition Ordnance Survey 6-inch map

Observations from site visit (land use, level of impact, significance of impact)

The site of the holy well was not located as part of the site survey. The castle site is located on a steep sided ridge overlooking Carrowmore Lough to the east and has collapsed in places, some parts of it has fallen in large intact sections. The church site and CBG are located further north east on

lowlying, level grass land and present as a mounded area with masonry inclusions, the remnants of a possible outer enclosing bank and ditch feature occurs to the north-east of the site (Illus. C 17). Pools of water may indicate that this area is subject to flooding and there are single stones and slabs located in this area which may indicate further burials. There appears to be stone walling (remnants of a possible route way oriented east-west linking the castle site to the church site), this feature is heavily overgrown and as such it is difficult to establish its extent and nature.



Illus. C 17 View towards the southwest showing the church site (MA079-061001) and the transmission line. The castle site (MA079-061-001) is located in the background obscured from view by the trees.

The overhead lines cross the lowlying area in a northeast–southwest direction between the Castle site and the Church/CBG (Illus. C 18). As the double wooden polesets are located in fields to the north and south of the archaeological complex on higher ground there is little interference or impact on the setting of the archaeological features and no direct impact to the features.



Illus. C 18 View southwest along the transmission line, between the Castle site and church site, spanning a stone boundary and possible laneway between the two monuments

A local 38 kV wooden poleset transmission line is located nearer the road side and in close proximity to features of a vernacular heritage interest such as a stone bridge, a corrugated barrel vaulted iron barn and a two storey, three bay rendered roadside dwelling (Illus. C 19). While none of these features are directly impacted given the smaller scale of this infrastructure it has more of an immediate impact to surrounding features than the high voltage OHL as it cuts across and frames an individual's visual field.



Illus. C 19 Roadside vernacular structures located to the west of OHL

ID No	5	
County	Mayo	
Townlands	Roslahan Upper	
Transmission line/substation/ UGC		
110 kV Castlebar - Cloon		
Transmission Infrastructure		
Wooden poleset (no 51) and a steel angle tower (no 50)		
Protected Status/Unique ID	Site Type	NGR
MA090-008	Ringfort	120398, 285186
Other Site Types		
N/a		
Impact		
Significant impact on the setting of the monument		
Condition		
Non-standard		

Site Description

This is a large broadly oval earthwork outlined by a scarp with a bank of earth and stones at its upper edge and the remains of a fosse. The entire site is densely overgrown with trees, bushes and briars and is difficult to examine properly. A modern, dry-stone field wall running north-west-southeast cuts off a small portion of the site, mainly the perimeter at the north northwest- north-northeast. North of this wall the fosse is best preserved being relatively wide, but shallow. Traces of the fosse can still be seen at the southwest-west-northwest but it appears to have been largely filled in in the past south of the field wall.

The scarp and bank are quite high being c. 3-4m over the bottom of the fosse. Internally the bank appears to be c. 1.0m high. The fosse is approx. 3-4m wide on the north with an external depth of c. 1.0-1.5m. There is a good deal of stone visible in the bank with some evidence for stone facing on the northeast and south. There is a stone-lined entrance gap through the bank on the east about 2m wide. This is probably the original entrance.

The site is located on the southern end of a large prominent north-south ridge in pasture land. There are other similar ridges in the area. There are extensive views from the site.

Planning history (if applicable)

Test excavation was carried out in 2002 in areas identified as being archaeologically sensitive along this 57.3km overhead 100 kV line from Castlebar Co Mayo, to Cloon, southwest of Tuam, Co Galway. All wires are supported on double wood pole structures, with poles 5m apart. These structures have been erected approximately every 200m. The design for the 110 kV line incorporates 253 poleset structures and 38 angle-tower structures. The power-line route passes primarily through green fields. It starts at Castlebar substation and continues in a roughly southward direction past Breaghwy townland, through various townlands and finally into County Galway at Carrowmurlaur townland. The line then continues roughly south-eastward before terminating at Cloon substation near Tuam, Co. Galway. An assessment recommended that monitoring (Licence No 02E0956) be carried out along the line and that testing be undertaken at pole-structure and lattice-tower locations near known archaeological sites (seven sites in total, no archaeological material was revealed as a result of these investigations, 02E1287; 02E1286; 02E1105; 02E1106; 02E1290; 02E1289; and 02E1288, all in County Mayo) (Moore 2003).

A double wood poleset is located c. 25m to the south-east of the ringfort (MA090-008) and a steel angle tower is located c. 30m north of it. Test excavation in the form of a single trench was excavated at the location of the poleset. Nothing of archaeological significance was noted (Moore Ltd, 02E1288).

Historic mapping

A number of ringforts are located on a north-south trending ridge occupying dominant positions in the landscape overlooking the river valley and the river that acts as the townland boundary between Roslahan Upper and Elmhall to the west.



Illus. C 20 First edition Ordnance Survey 6-inch map showing the ringfort sites and Elmhall House.

Observations from site visit (level of impact, significance of impact)

A large ringfort is located on the crest of a hill in rural pasture with extensive views to the west, northwest, southwest and limited to the east (Illus. C 21).



Illus. C 21 View upslope towards the northeast showing the ringfort and a double poleset (no 51) located c. 25m to the southeast from the exterior of the monument

While there is no direct, physical impact to the monument and no other associated features were revealed as a result of testing, there is a significant impact to the setting of the monument when viewed from the southeast and the immediate setting of the ringfort with a double poleset located c. 25m to the southeast from the exterior of the monument (Illus. C 22 and C 23).



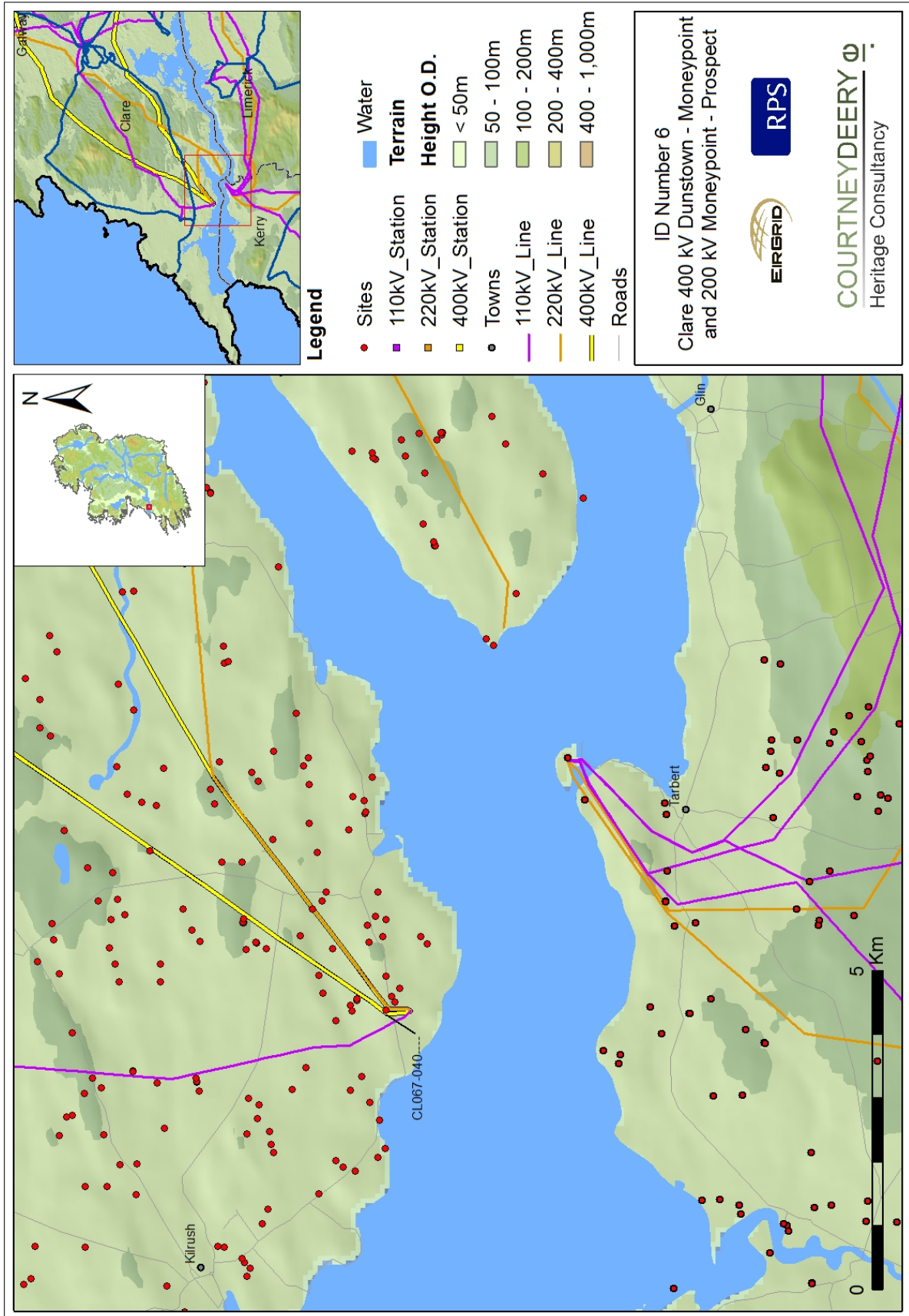
Illus. C 22 View in an easterly direction towards the ringfort site and along the transmission line, illustrating how the setting of the site has been diminished.

A steel angle tower is located 30m from the northern side of the ringfort (Illus. C 23). At this location, the banks of the monument form part of a field boundary.



Illus. C 23 OHL structure (no 50) 30m north of the ringfort site

Other activities such as land improvements and farm access tracks are located immediately to the west of the monument and also detract from the natural setting of the monument.



ID No	6	
County	Clare	
Townlands	Carrowdotia North	
Transmission line/substation/ UGC		
400 kV Dunstown – Moneypoint and 220 kV Moneypoint - Prospect		
Transmission Infrastructure		
Two steel lattice towers (220 kV and 400 kV)		
Protected Status/Unique ID	Site Type	NGR
CL067-040	Ringfort-rath	103694, 152330
Other Site Types		
Former demesne lands associated with Carrowdotia House (now demolished). This is not recorded in the NIAH garden Survey.		
Impact		
Significant impact on the setting of the monument and on relict features associated with te former demesne.		
Condition		
Worse case		

Description

The ringfort is situated on the west slope of a steeper east-west aligned ridge in fertile surroundings. The higher ground to the east restricts views but they are fair to good elsewhere. The RMP notes that 'there are two large ESB pylons close to the edge of this fort'.

The survey describes the monument as 'a nearly circular univallate rath, which however has large amounts of stone in the bank in places. Some original outer stone facing 1.1m high is evident along the northeast while a collapsed wall spread is more evident externally from the northeast to the northwest. Overall the bank varies from 4.3 to 5.4m wide and it averages 0.6m high externally. Numerous ash trees grow on or near the bank internally – the tree roots are thickly veined across the bank in most sectors.

One 2.4m wide breach, through the bank near the southwest, appears modern. There is no trace of an outer fosse or original entrance. The interior appears generally level though it is much over grown with briars – also some ask, holly, woodbine and one oak tree' (Leo Morahan 2002 The Archaeological Survey of Ireland).

This is a large oval shaped ringfort measuring approximately 35m east-west and 27.50m north-south. It is planted with mature trees and may have been used as an ornamental folly as part of Carrowdotia House. Direct access to the monument was not permitted due to the presence of animals.

Planning history (if applicable)

400 kV Dunstown-Moneypoint was constructed in 1986. 220 kV Moneypoint-Prospect was constructed in 1965/66. An uprate of the line is currently being planned. Former estate lands are now zoned for industrial use and have been forested

Historic mapping

The landscape in the immediate area has changed significantly since the first edition Ordnance Survey 6-inch mapping (Illus. C 24). The ringfort is shown with further planted ringforts located to the south of the road forming part of the lands associated with Carrowdotia House. This area is now zoned for industrial use and forms part of the lands for Moneypoint power station.



Illus. C 24 First edition Ordnance Survey 6-inch map showing Carrowdotia House, Demesne and the ringfort sites within the lands.

Observations from site visit (level of impact, significance of impact)

The ringfort is located in rolling pasture land. It survives well intact even though the surroundings have been significantly altered. The 220 kV tower is located 32m to the south west of the ringfort and the 400 kV tower is located approximately 12m from the monument (Illus. C 25). There is a significant

impact on the immediate setting and potential subsurface features associated with the monument; however the entire area has been subject to substantial change with the development of the power station.

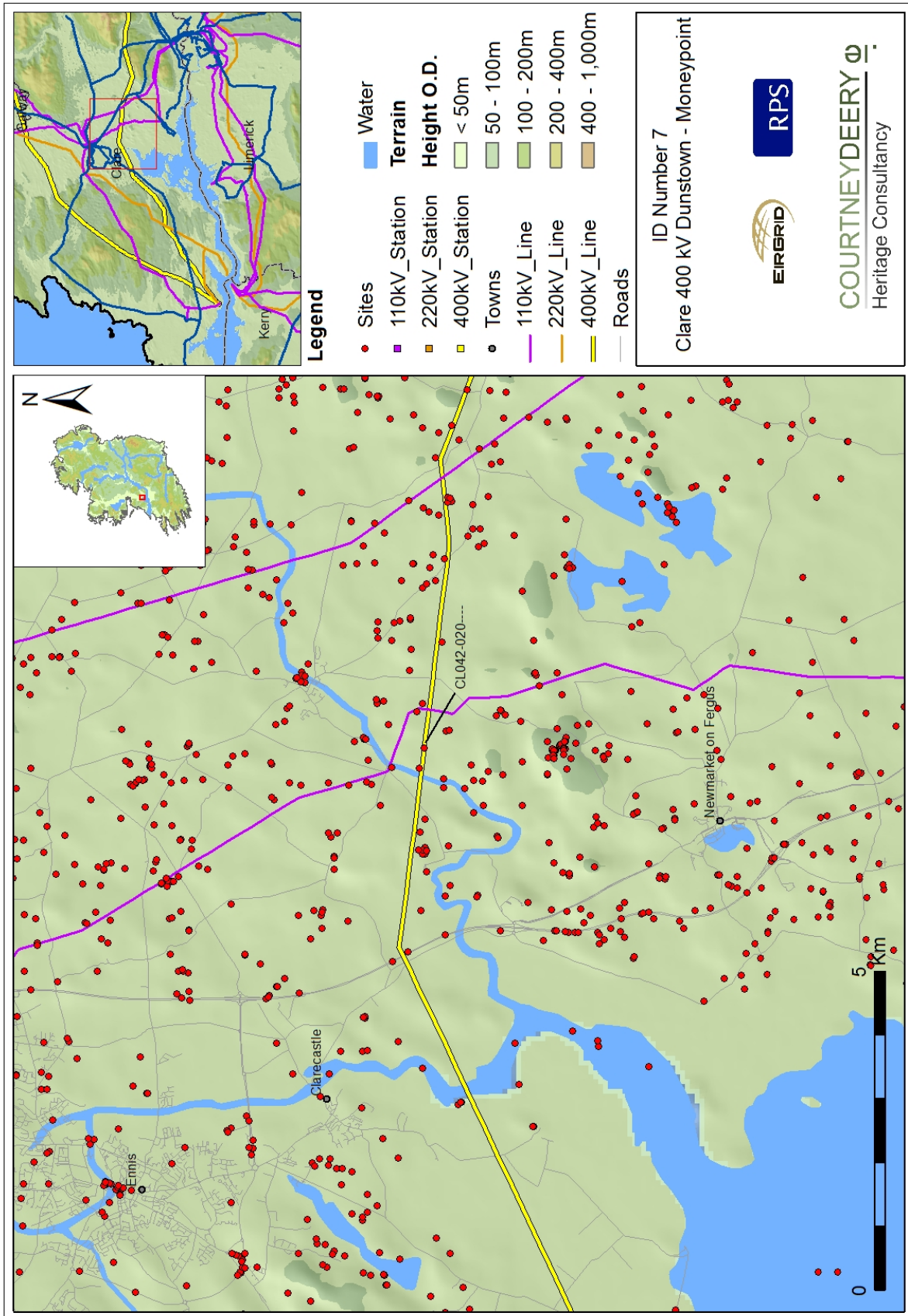


Illus. C 25 View of ringfort from the southwest, illustrating the significant impact of the OHL structures on its setting



Illus. C 26 Aerial view (Google earth) showing the ringfort, the two transmission lines and how the lands of Carrowdotia House Demesne appear today

The demesne lands associated with Carrowdotia House are no longer recognisable and are now used for industry or forestry (Illus. C 26).



ID No	7	
County	Clare	
Townlands	Ballykilty	
Transmission line/substation/ UGC		
400 kV Dunstown - Moneypoint		
Transmission Infrastructure		
400 kV steel lattice tower		
Protected Status/Unique ID	Site type	NGR
CL042-020	Ceremonial Enclosure	140734, 172655
Other Site Types		
N/a		
Impact		
No impact		
Condition		
Typical		

Site Description

Recorded as having a domed interior (raised centre) with a slight bank, the site may have originally been approximately 55m x 75m. Before the commencement of the North Munster Project (Mooghaun landblock) (Grogan 2005) no ceremonial enclosures had been identified in this area. This has now increased to ten, while over fifty sites of various types are known in the region. This increase is the result of several field projects (Toal 1995, Doody 1993, Connolly & Condit 1998; Condit & Grogan 1998 and Grogan). With these site types there is a marked avoidance of prominent locations and views from this site are restricted. The site itself is now substantially levelled and located in farmed pasture land that rises to the east.

Planning history (if applicable)

The line was constructed in 1966, no further records available.

Historic mapping

The monument is shown as a large, double embanked, circular enclosure roughly 70m in diameter. It is located in an area identified as 'Race Park' and the outline of a race course is shown to the northeast and east of the monument (this is now where the railway runs).



Illus. C 27 First edition Ordnance Survey 6-inch map showing the embanked enclosure within the 'Race Park'

Observations from site visit (level of impact, significance of impact)

The monument which is now levelled is set in gentle undulating farmed pastureland is located immediately west of the railway line, the site is more readily identifiable on aerial imagery than on the ground.

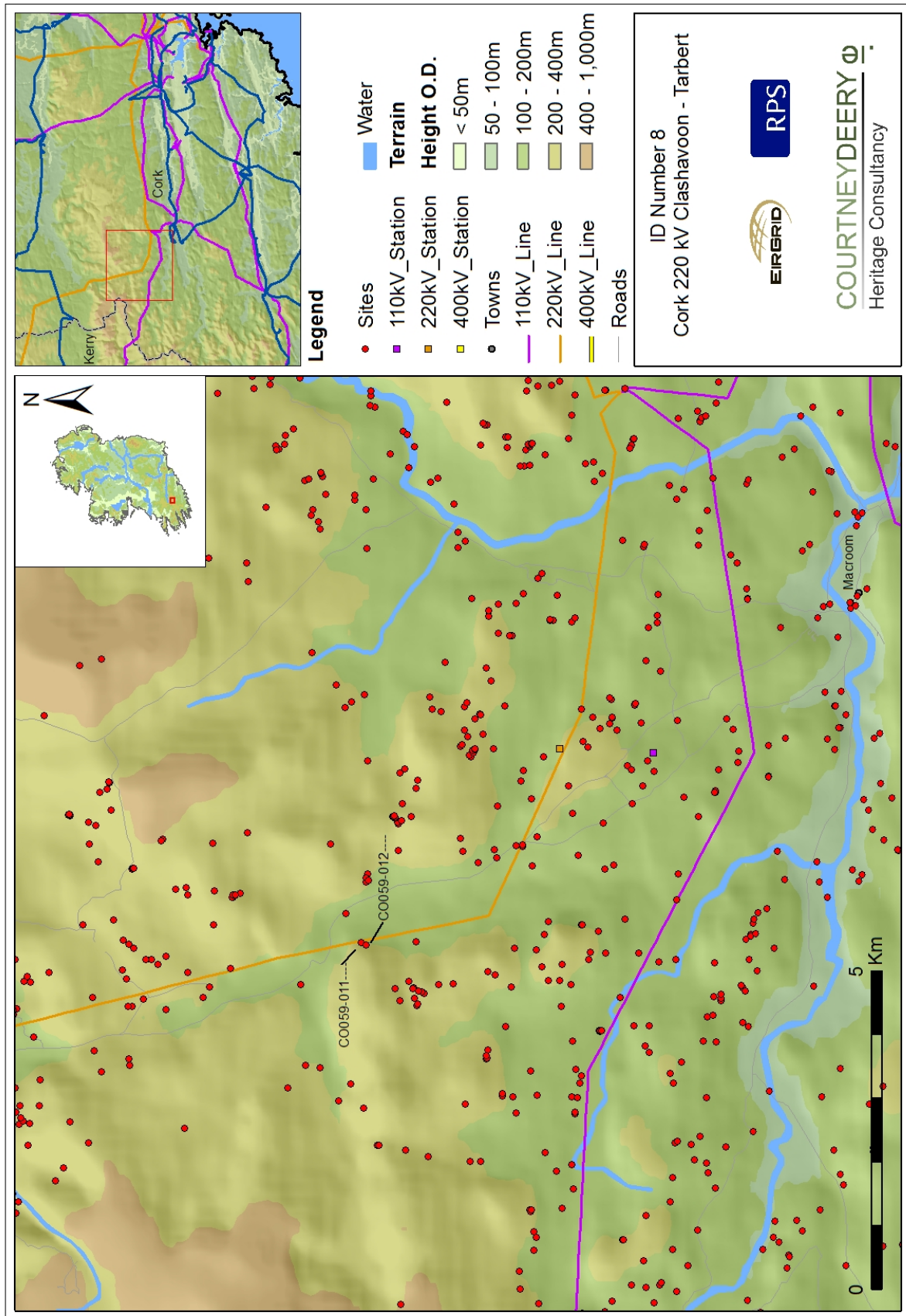


Illus. C 28 Aerial view (Google earth) showing the site of the enclosure (CL042-020) and the OHL structures and line

There are steel lattice towers located c. 216m west of the perceived line of the outer bank of the site and c. 162m east (on the opposite side of a railway line). The steel lattice towers do not have an impact the site and even though overhead lines cross above the levelled monument they do not detract from the setting.



Illus. C 29 View north towards the site of the enclosure (CL042-020) and the OHL tower and line crossing over it.



ID No	8	
County	Cork	
Townlands	Carrigonirtane	
Transmission line/substation/ UGC		
220 kV Clashavoon - Tarbert		
Transmission Infrastructure		
220 kV steel lattice tower (tower no 253)		
Protected Status/Unique ID	Site Type	NGR
CO059-011	Stone circle	128563, 80681
CO059-012	Standing Stone	128517, 80607
Other Site Types		
N/a		
Impact		
The steel lattice tower, at 7m is considered to be too close to the monument. The tower has a significant impact on the amenity and setting of the stone circle. While the standing stone is at a greater distance from the tower there is a moderate impact on the setting of this site. The group value of these stone monuments has been diminished.		
Condition		
Worst case, in terms of the stone circle and and non-standard with regards to the standing stone.		

Site Description

The stone circle is located on a terrace of an east facing slope of the Foherish River valley. The ground is uneven and soft underfoot having been heavily eroded from cattle. The field containing the monuments is overgrown with scrub, gorse bushes and bull rushes. There are views to the east over the valley but these are somewhat limited in all other directions with the land rising to the west. An axial stone and radially-set entrance stones survive, the western entrance stone is broken and a stump is in situ. The internal measurement along the main axis is approximately 2.3m. A prostrate slab (2.7m x 0.9m x 0.6m) 4.5m to the west northwest may be a fallen standing stone.

The standing stone is located approximately 100m to the southwest of the stone circle, the stone is sub rectangular in plan and is approx. 0.75m high, 1.2m wide at the base and 0.4m thick, it is oriented west northwest-east southeast (Power 1997). The stones are known locally as *gallan stones* (pers comm. local landowner).

Planning history (if applicable)

Clashavoon Station and loop were constructed in 2003; it was originally part of Knockraha-Tarbert (1978). There is no record that archaeological investigation or test excavation took place in advance of the construction of this tower.

Historic mapping

No archaeological features are shown on the first edition Ordnance Survey mapping (Illus. C 30).



Illus. C 30 First edition Ordnance Survey 6-inch map showing the marginal nature of the land and the location of the monuments

Observations from site visit (level of impact, significance of impact)

The base of the tower is located just 7m north of the stone circle (Illus. C 31 and C 32). While there is no physical impact on this monument, its setting and amenity have been severely diminished.



Illus. C 31 View towards the north of the stone circle (CO059-011) from beneath the steel lattice tower

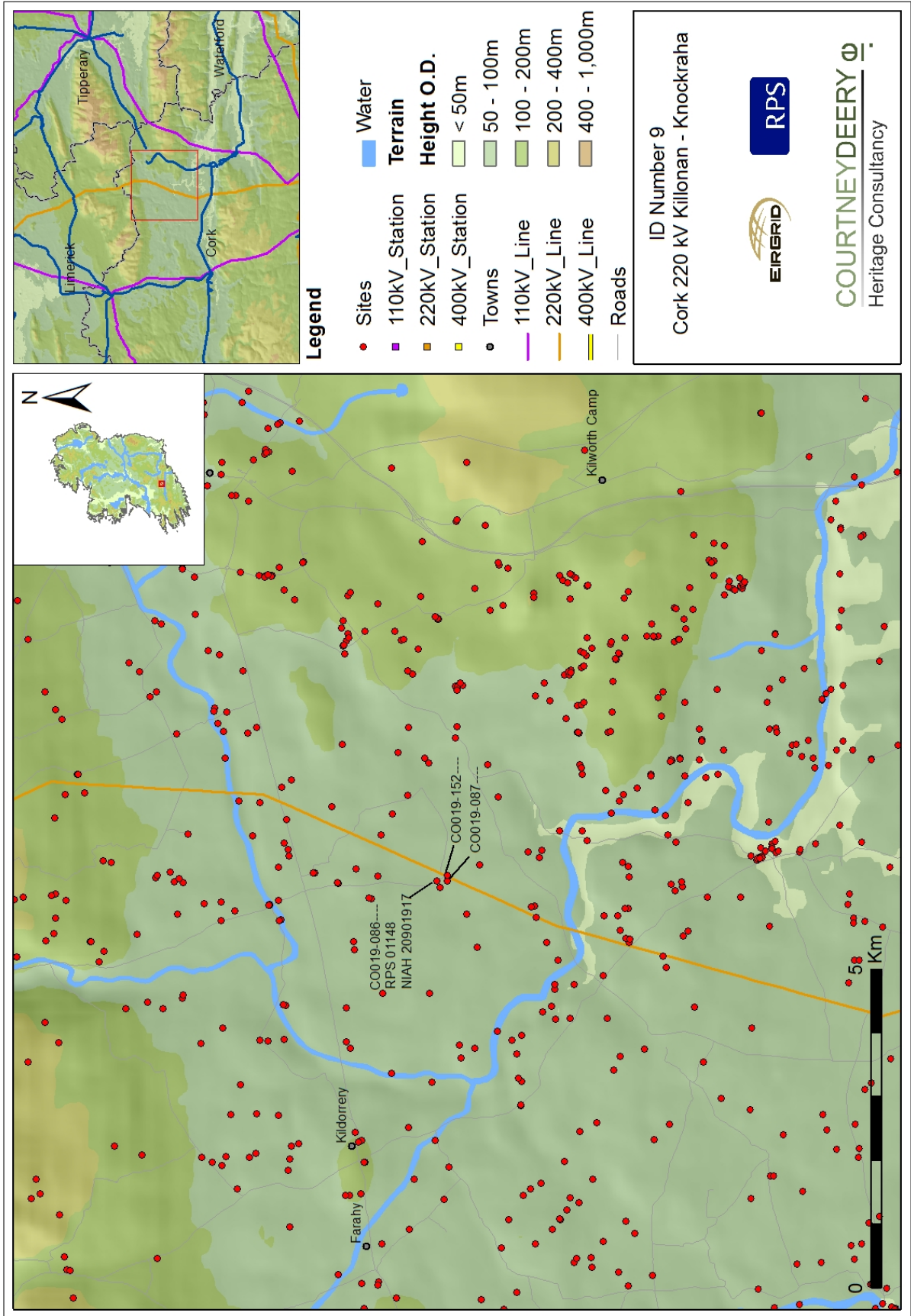


Illus. C 32 View southeast towards the stone circle and the steel lattice tower

The recorded standing stone is located approximate 90m southwest from the transmission structure. The setting of this monument has also been diminished.



Illus. C 33 *View towards the north from the standing stone CO059-012*



ID No	9	
County	Cork	
Townlands	Ballydeloughy	
Transmission line/substation/ UGC		
220 kV Killonan - Knockraha		
Transmission Infrastructure		
220 kV steel lattice tower and overhead lines		
Protected Status/Unique ID	Site Type	NGR
CO019-152	Ritual site, holy well	175359, 109140
CO019-087	Castle, unclassified	175269, 109142
CO019-086 (NIAH 20901917) (RPS 01148)	House, vernacular house	175270, 109299
CO019-152	Church & graveyard	175169, 109257
Other Site Types		
A decommissioned steel windmill, part of a water pump system, which is considered to be a cultural and industrial archaeological interest.		
Impact		
The tower has a moderate impact on the castle site and holy well. It has no impact on the vernacular structures.		
Condition		
Non-standard condition with regard to the castle and holy well and a typical condition for the vernacular structure.		

Site Description

The holy well is located in a hollow in the base of a sycamore tree which holds water that does not dry up. The tree forms part of the roadside boundary and is known as St Catherine's well. According to local tradition it was originally located in Ballydeloughy graveyard but moved when someone washed clothes in it.

The castle site is located on a low-lying plain with a low hill rising to the southwest. All that remains is a stretch of wall, oriented north-south and measures 4.85m in length, 4m in height and approximately 1.5m thick. There is a slight base batter on the western side at the southern end and no other features are evidence. It is known as the Castle of the Roche's.

The church and graveyard is located approximately 60m from the road to the east. The graveyard is trapezoidal in shape and enclosed by an earthen bank, stone-faced externally and planted with mature trees. The ground rises gently to the ruins of the parish church of Ballydeloughy at the centre. Most burials are located to the southeast or east of the church and the headstones date from the 1767.

The vernacular house is located on the eastern side of the road and presents as a four bay single storey structure oriented south southeast. The front door is off centre to the left, it has a thatched hipped roof with an off centre chimney. Associated farm buildings are located around the front yard.

Planning history (if applicable)

This line was constructed in 1965/66; upgrades are in planning at present. No further planning information was available.

Historic mapping

The church and castle site are shown in ruins on the first edition Ordnance Survey 6- inch mapping (Illus. C 34). The castle ruins are shown as rectangular in shape with the gable walls at the east and west. A number of structures are shown along the roadside in the locality.



Illus. C 34 First edition Ordnance Survey 6-inch map showing the site of the castle (CO019-087), church and graveyard (CO019-152) and the roadside structures.

Observations from site visit (landuse, level of impact, significance of impact)

The upright castle wall is located approximately 50m to the northwest and in the same field as the steel lattice tower (Illus. C 35). The holy well is located approximately 9m to the southeast of the tower which is located near the field boundary (Illus. C 36).



Illus. C 35 View east towards the surviving castle wall and the steel lattice tower to the southeast



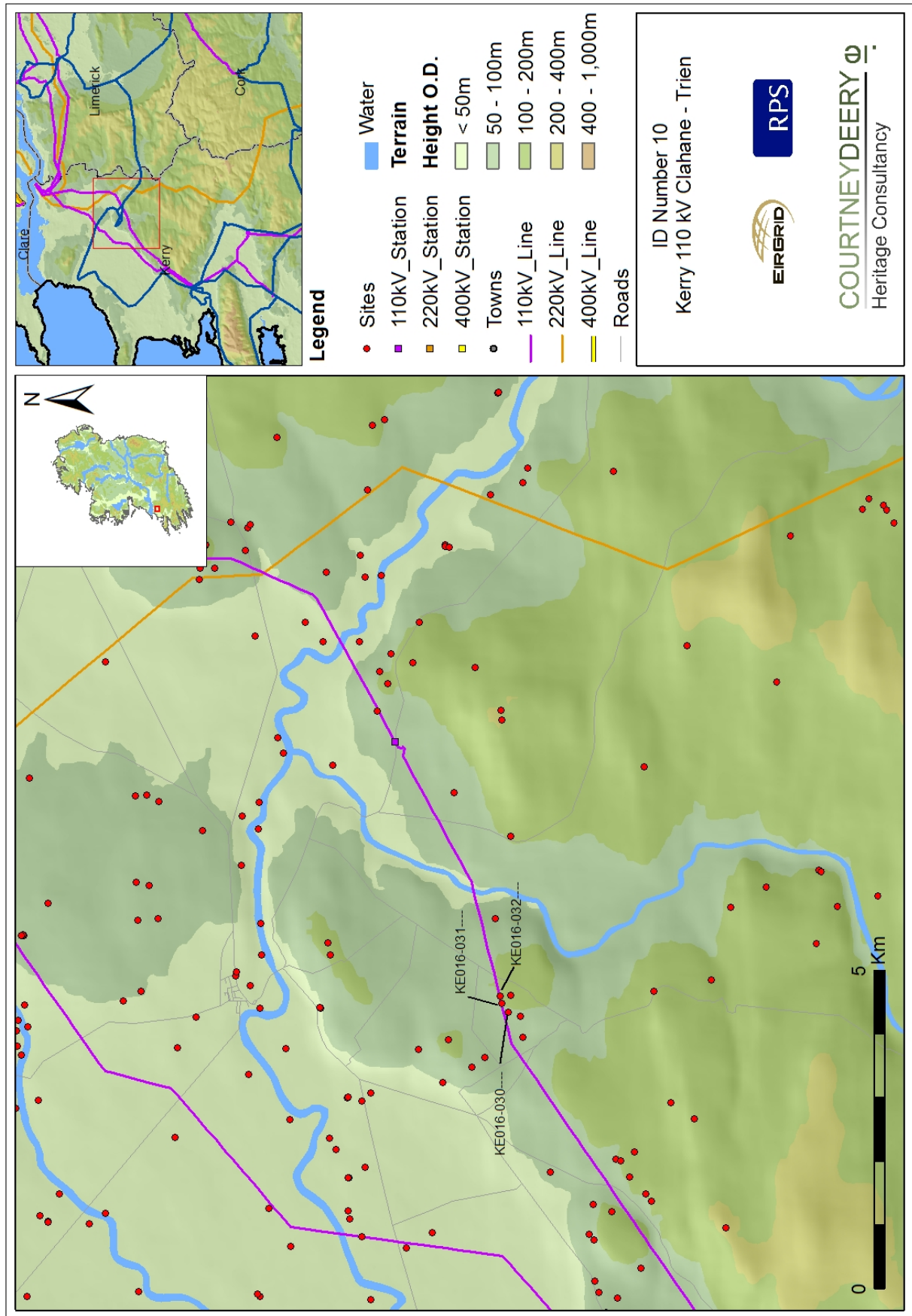
Illus. C 36 Holy well within the tree on the western side of the road, the steel lattice tower and in the middle distance the castle site

The church and graveyard and vernacular structure are sufficiently removed from the transmission line and are not physically or visibly affected by it. A windmill now unused is located approximately 72m southwest of the tower over a well (as shown on the 1st edition Ordnance Survey 6- inch map). According to the local landowner this windmill went out of use during the 1972 storm, 'it is very old and was used to pump water to the farm' (pers comm.). The structure is located immediately west of the overhead lines.



Illus. C 37 View towards the east of the steel windmill, which is part of a pair pumping water from well to well.

The transmission line and towers crosses to the south and east of the monument complex at Ballydeloughy with only the holy well lying to the south of the transmission infrastructure. No features of architectural heritage significance are directly impacted and while the tower is in the same field as the castle site it does not have an imposing presence on these remains. It does however impact the immediate setting of the holy well; however as this is a roadside well it has been subject to number of changes in the intervening years. The presence of the transmission line does not hinder access to either site, although the castle site is on private property and permission must be granted before entering the lands. There is no impact on the vernacular structures located on the road side.



ID No	10	
County	Kerry	
Townlands	Furhane	
Transmission line/substation/ UGC		
110 kV Clahane - Trien		
Transmission Infrastructure		
Double wooden polesets		
Protected Status/Unique ID	Site Type	NGR
KE016-032	Fulacht fia	499076, 629796
KE016-031	Fulacht fia	498957, 629774
Other Site Types		
Historic farmstead and limekiln which now presents as a kink in the field boundary.		
Impact		
It is not possible to determine the impact of the transmission line as the area was previously disturbed.		
Condition		
Typical		

Site Description

KE016-031---

'A low circular mound now marks this site, which produced some burnt stones when ploughed. Its overall dimensions are 13m N-S x 15m E-W and .5m in height' (North Kerry Archaeological Survey, Toal 1995, 59, no 73).

KE016-032----

'A low semi-circular mound is all that remains of this site. A levelled field bank which ran in a SW-NE direction removed any trace of the S side of the mound. The mound survives to a height of c .3m and measures 10m N-S x 15m E-W. The two previous sites are in the immediate vicinity of this site' (North Kerry Archaeological Survey, Toal 1995, 59, no 74).

Planning history (if applicable)

Land improvements (unrelated to electricity infrastructure development) have resulted in the removal of the above ground definition of the monuments. Consultation with the planning archaeologist for Kerry has confirmed that no licenced archaeological work has taken place in Furhane.

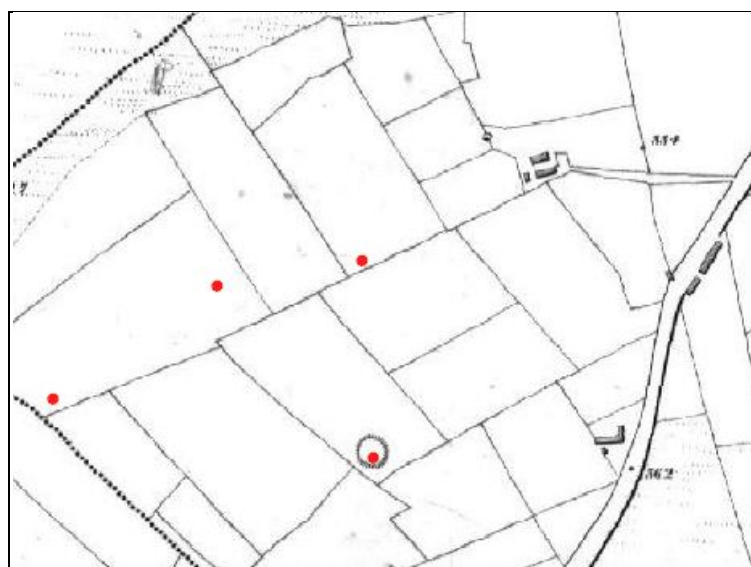
The B/W 1995 aerial photo (www.osi.ie) shows a discrete mounded area in the vicinity of KE016-032 and the transmission line cannot be seen on this image.

The 2000 ortho-photo (www.osi.ie) shows a transmission line in place and the land divided into large pasture fields however, none of the archaeological features can be defined.

The 2005 ortho-photo (www.myplan.ie) shows disturbance along the line of the transmission line in the vicinity of KE016-032 and 031. This takes the form of a linear track oriented northeast-southwest with off sets. Perhaps this is related to land improvement, boundary clearance, drainage or development disturbance. Given the date of the photos it would seem to indicate that these works took place between 2000 and 2005 and perhaps removed the above ground signature of the sites at that stage.

Historic mapping

The fulacht fia are not shown on the first edition Ordnance Survey 6- inch mapping (Illus. C 38). A ringfort to the south is shown, according to the local landowner this is known as fort field. A farmstead and lime kiln is also shown on the mapping. The remnants of these structures now present as a kink in the boundary. There is plenty of brick in the immediate area. This area is located immediately north of a wooden poleset.



Illus. C 38 First edition Ordnance Survey 6-inch map showing the location of the recorded monuments

Observations from site visit (level of impact, significance of impact)

The complex of fulacht fia is located in a large field that is subdivided by electric fences. The field system has been completely altered from the first edition Ordnance Survey 6- inch mapping and opened up.

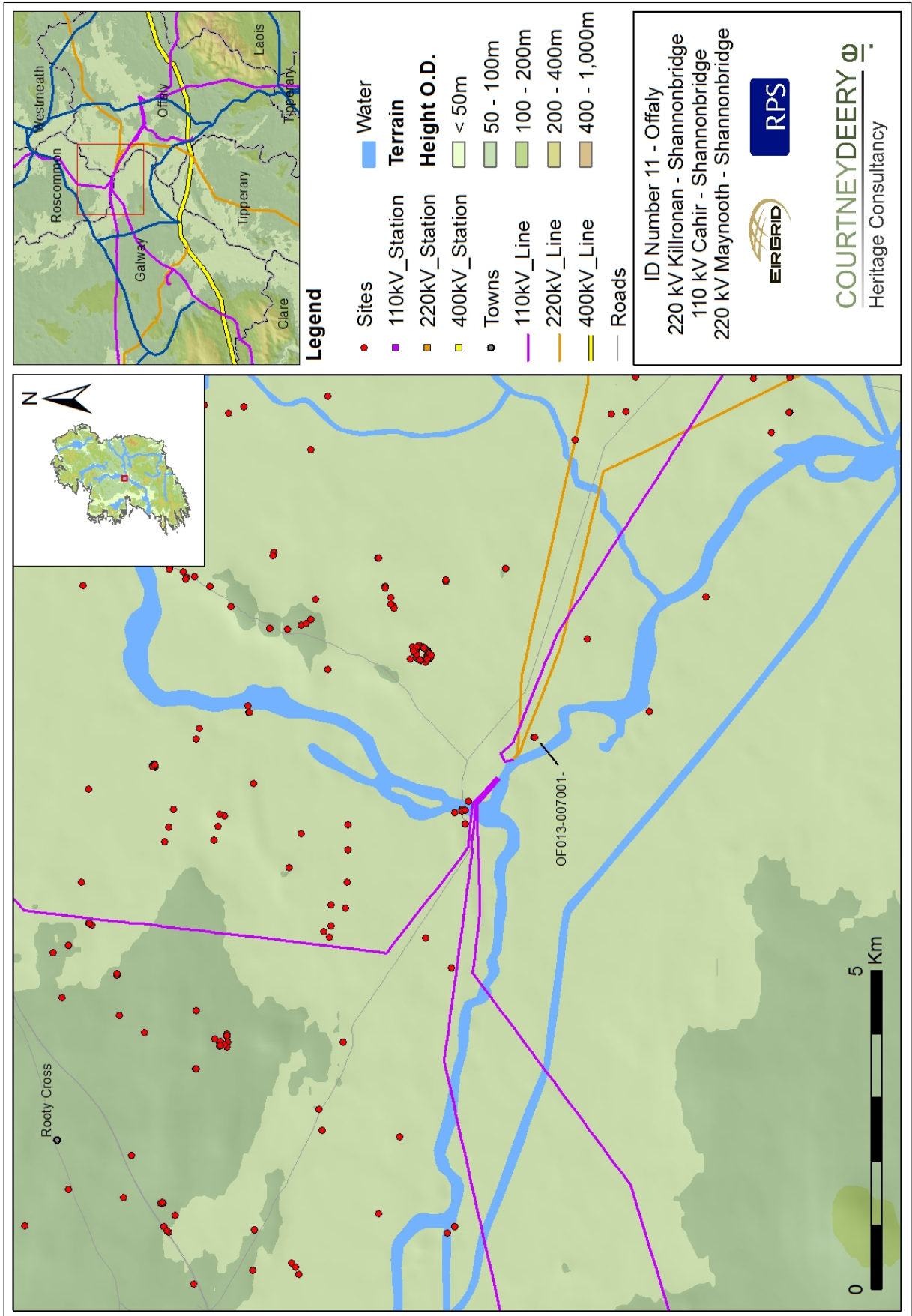


Illus. C 39 Aerial image (Google Earth) showing the location of the recorded monuments and the consolidated fields system.

The land is wet and soggy underfoot and slopes to the north to a large embanked boundary with a deep cut drain. Two sets of double wooden polesets are located north in the immediate environs of the sites of the fulacht fia. However, in contrast to the record, there are no visible, above ground remains of these monuments. Their removal appears to have been the result of unauthorised land improvements in the area.



Illus. C 40 The nature of the land in the vicinity of the levelled fulacht fia sites



ID No	11	
County	Offaly	
Townlands	Cloniffeen	
Transmission line/substation/ UGC		
220 kV Killronan – Shannonbridge		
110 kV Cahir – Shannonbridge		
220 kV Maynooth - Shannonbridge		
Transmission Infrastructure		
Double wooden polesets and steel lattice towers		
Protected Status/Unique ID	Site Type	NGR
OF013-007001/002	Church & Children's Burial Ground	197799, 224317
Other Site Types		
N/a		
Impact		
There is a moderate impact on the setting of the monument due to the noise associated Bord na Móna works which disturbs the tranquillity and setting of the site.		
Condition		
Non-standard		

Site Description

Situated on a low rock outcrop on the low-lying floodplains of the river Shannon. A small rectangular church (ext. dims. 6.7m north-south; 13.2m east-west; wall thickness 0.8m) built with roughly coursed rubble limestone with only the east end of the south wall surviving and wall footings elsewhere. At the west end of the church are the wall footings of a cross wall indicating a possible priests room (ext. dims. 6.7m north-south; 5.2m east-west). No architectural features are evident. The church is situated within a roughly square shaped area (33m north-south; 34m east-west) enclosed by a bank of earth and stones (width 1.5m; external height 0.5m) which is best preserved at the north; elsewhere it has been reduced to a scarp. There are rows of upright unmarked stones aligned in north/south rows in

the southern sector of the enclosure. These are the grave-markers of unbaptized children according to the ITA Survey (1942). Archaeological Inventory of County Offaly (Dublin, Stationery Office, 1997).

The church site is now venerated and there has been major work completed to construct a modern altar within the church site. A plaque states 'Reclaimed & blessed 21st Sept. 2000 In Pace Cum Sanctis Fr. Francis O'Hanlon P.P.'. The monument is now fenced off and has been planted with flowers and trees have been planted to the south and west of the church site. There is an active management regime in place at the monument. It is known locally as a 'Killeen'.

Planning history (if applicable)

220 kV Killonan & Maynooth – Shannonbridge commissioned in 1965/66, updates in planning at present.

Historic mapping



Illus. C 41 First edition Ordnance Survey 6-inch map showing the church and graveyard

Observations from site visit (level of impact, significance of impact)

The nearest tower is located approximately 140m northeast of the monument while the double wooden poleset is located approximately 58m to the southwest of the site along the field boundary in the same field (Illus. C 42). Even though the wooden poleset is located closer to the monument it detracts less than the 220 kV steel towers to the northeast of the site (Illus. C 43).

However, there are other closer visual impacts that detract from the setting of the site such as a large agricultural shed located to the northeast and the Bord na Móna works which are located

approximately 57m to the northwest (Illus. C 43). These works are generally loud and noisy in an otherwise quiet and rural landscape, and they disturb the tranquillity at the site.



Illus. C 42 Polesets at the field boundary, monument located middle ground and the steel tower in the distance

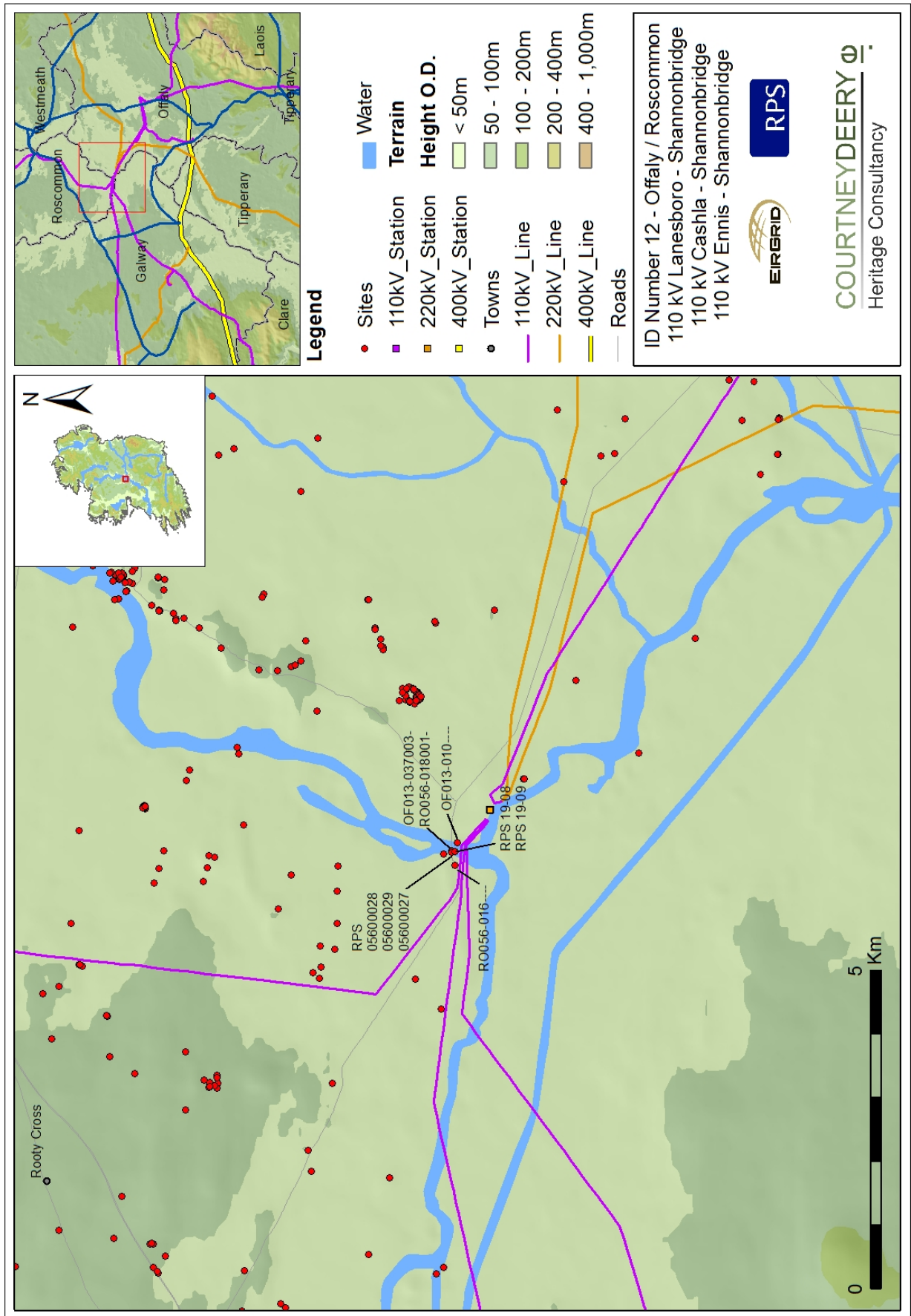


Illus. C 43 View from the church and graveyard site towards the steel lattice tower and the agricultural sheds (140m).



Illus. C 44 The modern altar placed within the ruins of the church site

Even though presumably undertaken with good intentions, from a cultural heritage perspective the improvement works (i.e. the building of an altar (Illus. C 44) and planting of trees) are inappropriate and significantly impact the monument.



ID No	12	
County	Offaly/ Roscommon	
Townlands	Cloniffeen, Shannonbridge and Raghra	
Transmission line/substation/ UGC		
110 kV Lanesboro-Shannonbridge		
110 kV Cashla – Shannonbridge		
110 kV Ennis – Shannonbridge		
220 kV Shannonbridge substation		
Transmission Infrastructure		
Double wooden pole, angle towers and substation		
Protected Status/Unique ID	Site Type	NGR
RMP sites		
OF013-010	Castle unclassified	196802, 225350
OF013-037003	Weir – fish	196668, 225395
RO056-018001	Bridge	196650, 225448
RO056-016	Bastioned fort	196444, 225399
NIAH sites and rating		
1480510 (NIAH-Offaly), Regional	Swivel bridge	196720,225338
14805011 (NIAH-Offaly), National	Shannon bridge	196662,225440
31956004 (NIAH-Ros.), Regional	Shannon bridge	196662,225440
31956005 (NIAH-Ros.), National	Shannonbridge tete-de-pont	196498,225418
RPS sites		
19-08 (RPS-Offaly)	Swivel bridge	196720, 225338
19-09 (RPS- Offaly)	Shannon bridge	196662, 225440
05600028 (RPS-Ros.)	Fortifications	196498, 225418
05600029 (RPS-Ros.)	Fortifications	196498, 225418
05600027 (RPS-Ros.)	Shannonbridge	196662, 225440
Other Site Types		
N/A		
Impact		
The impact to the setting of architectural features when viewed from the Roscommon side of the River Shannon is significant. The views are compromised by OHL and Shannonbridge substation.		
Condition		
Non-standard		

Site Description

Single-span cast-iron twin-leaf swivel bridge, built in 1843, and originally spanning the River Shannon. Relocated to quayside. Designed by the engineer Thomas Rhodes and constructed by J & R Mallet, Founders, Dublin. In two sections, each on a rotating platform mounted on modern stone-clad plinths.

Removed from its original context, this swivel bridge would have been the opening span to the eastern end of Shannon Bridge. Erected in 1843 as part of improvements to the Shannon Navigation, the swivel bridge would have allowed steamers to pass between Limerick Athlone and terminal harbours. It was replaced in the 1980's by the present fixed beam and slab arrangement and these notable pieces were relocated here to the quayside.

Sixteen-arch masonry road bridge, completed in 1757, spanning the River Shannon linking counties Offaly and Roscommon. Concrete fixed span added to east end in 1983. Random coursed limestone walls with ashlar voussoirs to round-headed arch-rings. Stone corbels to rendered soffits. Cut stone string courses to parapets surmounted by cut stone coping. Full-height upstream and downstream V-shaped cutwaters with pedestrian refuges to parapet. Limestone plaque to east end gives dates for bridges construction and opening to navigation. Modern metal lamp standards to road surface.

The Archaeological Survey of Ireland describes it as a bridge of 17 arches and that it was built c. 1700 at a point where there had been a ford and fish weir. In 1755 the Commissioners of inland Navigation built an extra span on the eastern bank. In 1845 Thomas Rhodes designed a cast iron swivel bridge to replace this span, which itself was replaced by a concrete span in 1883-4, (Barry 1985).

Lending its name to the village located on the Offaly side of the river, Shannonbridge is one of the finest viaducts in Ireland. The massive sixteen-arched structure is a testament to eighteenth-century engineering and stone masonry. Spanning Ireland's longest river, the bridge links Counties Roscommon and Offaly and as such is of vital importance to the region.

Tete-de-pont with glacis, redoubts and caponniere, constructed in 1810, with barracks added in 1814. It was completed in 1817 to a plan of Lt. Col. Fisher. . Random coursed stone ramparts with cut stone quoins, built to a triangular plan with corner bastions. Segmental-headed gun loop openings to redoubts. Detached twelve-bay three-storey former military barracks with random coursed cut stone walls. Replacement timber sash windows, doors and overlights. Gunloops to rear. Single-storey stone outbuildings to north. Detached three-bay single-storey former officers mess, now used as a private house. Fortification built along axis of bridge to east and is partially bisected by road.

Built at a strategic point on the River Shannon to defend against a possible French invasion, this bridgehead fortification is of great historic significance and is unique within Ireland and Britain. Its defences included redoubts with gun loop openings, a caponniere, which was a vaulted structure designed to be bomb proof, batteries and earthworks known as glacis, which sloped to expose attackers to fire. Not only is this structure historically significant, it is a testament to the endeavours of

military engineers. Archaeological testing during 2004 just northwest of the west end of the glacis failed to produce archaeological material (Delany 2007)

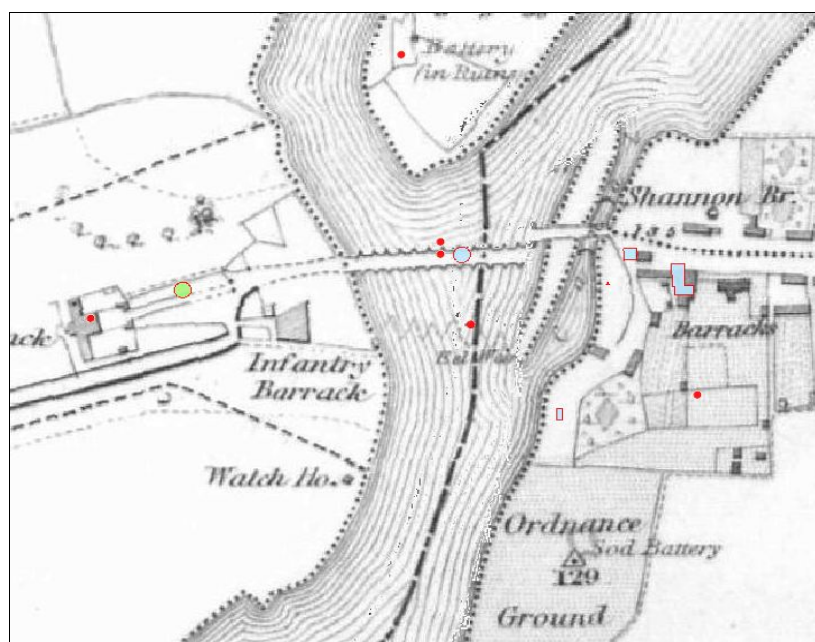
On the banks of the River Shannon, on the eastern bank (County Offaly) in Raghra townland an unlocated castle is mentioned in the OS letters (O'Flanagan 1927, vol. 1, 181; Loeber 1988, vol. 5, 59-60).

There are several fords over the River Shannon between Athlone and Banagher, but roads do not lead to them, except to Raghra (Shannonbridge) and Ballaghna, two miles below the Seven Churches. Matthew de Renzy in 1620 states that *'This (castle and lands) (OF013-010) must needs be planted also with undertakers in regard it lyeth upon the Shenon (Shannon) and there is a ford over that river weare in somer (summer) time foote men may wade over.'* (Mac Cuarta, B. 1987, 178-9). In 1622 the commissioners appointed by the English crown for the Plantation of Kings County granted Thomas Rotheram the lands and ownership of the fishing weirs of the town and lands of Raghra (Shannonbridge). The 'eel weir' indicated on the first edition OS 6 inch map to the south of the bridge at Shannonbridge may have been built on the site of or may even be the fish weir described in the 17th century.

Planning history (if applicable)

Archaeological investigation has taken place at Shannonbridge substation and no features were revealed (ADS Ltd 02E0451, Appendix 1). Shannonbridge substation was commissioned in 1960. Cashla substation and loop was constructed in 1980; originally part of Galway-Shannonbridge which was constructed in 1969. Refurbishment works conducted in 2003.

Historic mapping



Illus. C 45 First edition Ordnance Survey 6-inch map showing the complex of cultural/ industrial heritage features at Shannonbridge (RMP sites indicated in red, RPS/NIAH in blue and green)

Shannonbridge village is located on the eastern side of the Shannon in Co Offaly. It is a pretty village containing many stone structures. The river at this location is striking, with strategically placed, imposing buildings and structures flanking its banks. The bridge connecting County Roscommon and Co. Offaly is a testament to eighteenth-century engineering and stone masonry.



Illus. C 46 Aerial view (Google Earth) of Shannonbridge (RMP and sites RPS/NIAH indicated)

Observations from site visit (level of impact, significance of impact)

Three 110 kV lines cross to the south of Shannonbridge from the eastern side (Co Offaly). While there is a proliferation of lines, there is no direct impact on archaeological features (as the river is spanned) and views to buildings and structures of architectural heritage significance are maintained (Illus. C 47).



Illus. C 47 View along the eastern side of the river

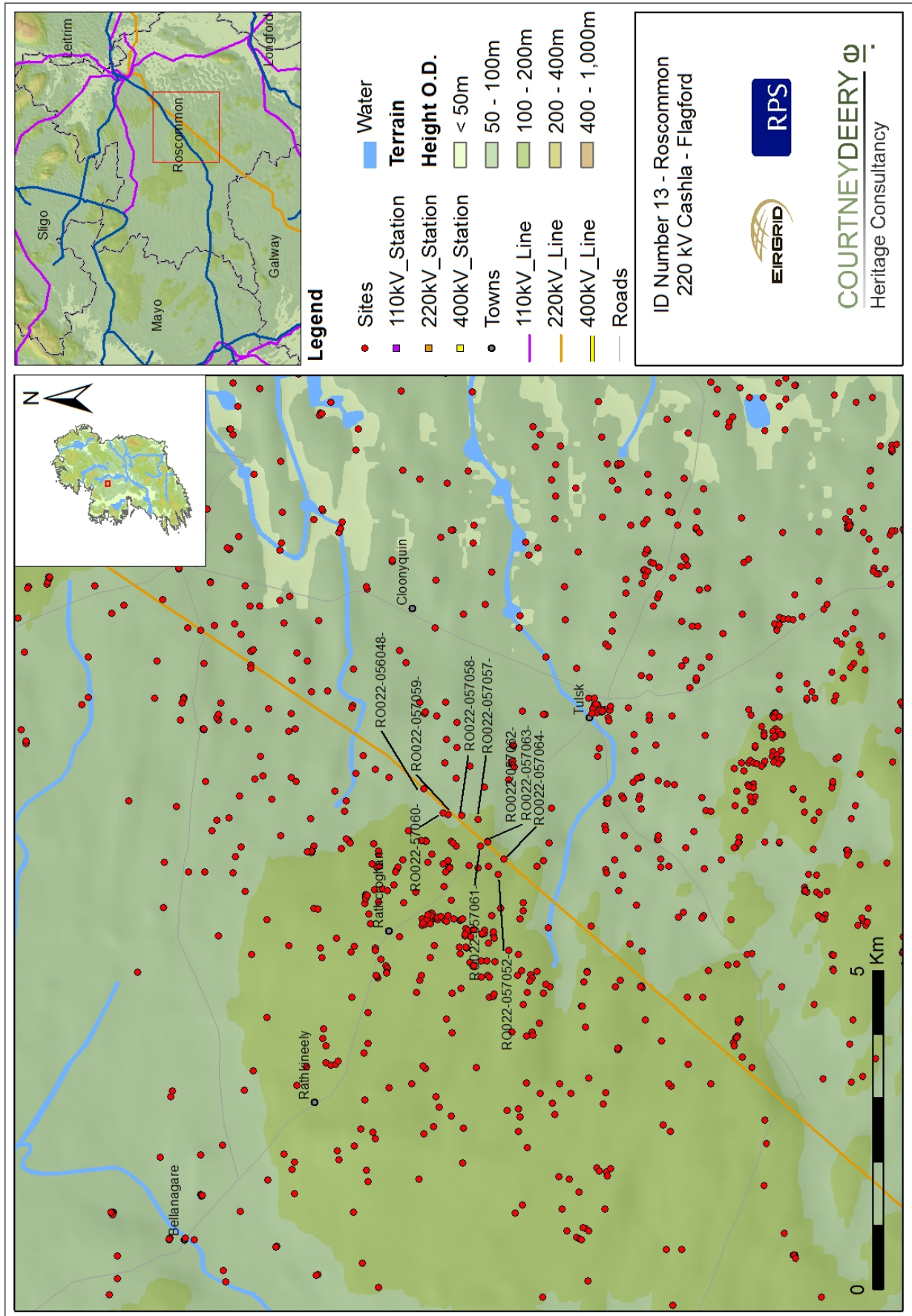
However, entering the village from the Roscommon side, views of the River Shannon are compromised by the lines and Shannonbridge substation. From the bridge and the bastioned fort on the western side of the Shannon, the transmission lines and station dominate the view (Illus. C 48 and C 49).



Illus. C 48 Views from the bridge and the bastioned fort



Illus. C 49 Further views from the bridge and the bastioned fort



ID No	13	
County	Roscommon	
Townlands	Carrowntoosan, Carrowgobbadagh, Kilnahooan and Tullintuppeen	
Transmission line/substation/ UGC		
220 kV Cashla-Flagford		
Transmission Infrastructure		
Steel lattice towers (six towers nos 196-201)		
Protected Status/Unique ID	Site Type	NGR
RO022-054064	Ringfort	580927, 782527
RO022-057052-	Road	180733, 282601
RO022-057063	Souterrain	581198, 782787
RO022-057062	Enclosure	181260, 282768
RO022-057061	Road/trackway	181181, 282884
RO022-057057	Ringfort	581556, 782942
RO022-057058	Field System	581615, 783186
RO022-057059	Pitfield	581631, 783408
RO022-057060	Road-road/trackway	581652, 783481
RO022-056048-	Ringfort	182079, 283769
Other Site Types		
RO022-057052, a road, is listed as part of Rathcroghan Archaeological Complex, National Monument (473) (www.archaeology.ie National Monuments in state Care Ownership & Guardianship, 4 th March 2009)		
Impact		
Significant (direct and indirect)		
Condition		
Worst case		

Site Description

The ringfort (RO022-054064) is located on a gentle east-facing slope. It is a circular grass-covered area (24.3m north-south; 23.5m east-west in diameter) defined by a slight bank (3m in width, with an internal height of 0.2m and external height of 0.9m) and an outer fosse, 2m wide at the base and 0.3m deep at the west-south-west and north and a scarp (0.4-0.9m in height) elsewhere. There are entrances at the east-south-east approximately 2.5m wide and west-north-west; 1.4m wide. The rath (RO022-057051) is located c. 240m to the north-north-west (Knox 1914, 33, Rath No.2; Waddell 1983, 41, No 49)

The road (RO022-057052-) is located on the south-facing slope of Rathcroghan ridge. It runs east-west in interrupted sections for approximately 1.8km. The eastern end intertwines with the Tulsk-Bellanagare road where it loops around a low hill at the eastern foot of the Rathcroghan plateau. It is here north of the N5 that a tower (No 197) and mobile phone mast are located approximately 43m north of the ancient road in the same field. The linear monument presents as a shallow depression, most noticeably on the eastern side of the field where it is approx. 7m north-south in extent, with a slight bank defining the southern edge. This monument is interrupted by a causeway built to access interior fields and in all likelihood the tower.

As the road travels west the carriageway (13.5m wide) is defined by a scarp (0.6m high) at the north and a low bank (4m wide and 0.2m in height) at the south and passes by a well called *Tobar na Spunoige*. West of the N5, the road runs west-north-west towards Cahernalody rath (RO022-057051-) (100m in length) as a carriageway (7-8m in width) defined by earthen banks (4-7.5m wide, internal height 0.3-0.6m; and external height 0.2m) at the north and south. It then turns south (14 wide and for about 150m in length) to a disused well where it turns west as far as the north-south public road where the carriageway (10m wide) is defined by earthen banks (3m wide and 0.3-0.5m high) at the north and south (for approx. 300m in length). West of the north-south public road the field bank running west towards the ringbarrow (RO022-057046) at Knockannagorp is the remains of its northern boundary. It ran as far as the rath (RO022-057039-) (approx. 700m in length), and a small fragment (RO022-057068-) (10m wide) defined by earthen banks (2.5-3m wide and 0.3-0.6m high) survives west of it (approx. 100m in length) (Knox, 1914, 33-4; Herity 1983, 131; 1988, 73, Glenballythomas 14; Waddell 1983, 41, No 46).

The souterrain (RO022-057063-) is located to the west of the summit of a low hill at the eastern foot of the Rathcroghan ridge. Three lintels of an inaccessible passage are visible on the surface. An enclosure is at the top of the slope (RO022-057062-) at the site of the souterrain. It is described as faint traces of an enclosure (40m in diameter) (Waddell 1983, 41, No. 47).

The trackway (RO022-057061) is marked on the 1837 OS 6 inch mapping and is situated on the north-facing slope of a low hill at the east foot of the Rathcroghan ridge. An earthen bank (2.2m wide and 0.6m high) aligned northwest-southeast and is approximately 1km long is separated by a berm (2.2m wide) at the southwest from a lower earthen bank (5m wide and 0.3-0.5m high) with traces of a

drain (1.7m wide) outside it. This may have been part of the Tulsk-Bellanagare Road (now N5) before the present road.

The ringfort (RO022-057057) is located on a low east-west ridge at the eastern foot of the Rathcroghan ridge. It presents as a sub circular grass covered platform approximately 26m west-northwest-east-southeast and 22m north-northeast-south-southwest. It is defined by a scarp 0.9m high at the north-north-east to 1.7m at the south-south-west, which merges into a slope elsewhere. There is a slight bank on the perimeter to the west and north, but there is no visible fosse or entrance.

The field system (RO022-057058-) is located on a level landscape at the eastern foot of the Rathcroghan plateau and part of the unified field system of Rathcroghan. Earthen banks defining large rectangular fields (SMR file 1987) were recorded in the vicinity of the rath (RO022-057057). The area was also overlaid with pits (RO022-057059-). The field banks and pits are no longer visible at ground level.

The pit field (RO022-057059) is located on a level landscape at the eastern foot of the Rathcroghan ridge. An area of c.15 ha has pits arranged in east-west lines parallel with the road (RO022-057060) which are no longer visible at ground level (Michael Moore, Archaeological Survey of Ireland, 2010).

Michael Moore of the National Monuments Service has suggested that these features are man-made and not natural features, proposing a possible post-medieval date from the seventh century AD onwards. Fenwick and Parkes (1997) noted that the features are most likely natural in origin. The pit fields, according to the archaeology.ie website, only appear in County Roscommon within the wider Rathcroghan area. It may never be possible to uncover the purpose for which the pits were created. There are many local suggestions, such as a source or clay or rocks, the collection of water, the storage of potatoes, drainage, flax pits, damaging fields owned by a landlord, military reasons or the production of lime (Timoney 2009). Another suggestion noted by Timoney is that the soil might have been removed and offered as material for the construction of some of the major archaeological monuments in a ritual manner (Dempsey 2012, 26).

The road/trackway (RO022-057060) is located on a level landscape at the eastern foot of the Rathcroghan plateau. It was described in 1987 as a fragment of a roadway approx. 500m long defined by earthen banks (SMR file) at the northern end of the field system (RO022-057058-) and within the pit field (RO022-057059-). At its western end it may have turned south to join the east end of road (RO022-057021-) at Tober Caoch (RO022-057053-), but there is no evidence of this. At its eastern end it ran past a farmhouse in Cammoge, connecting with its old entrance lane and is continued by the lane running past raths (RO022-057056-; RO022-079--). It is no longer visible at ground level in pasture.

The ringfort (RO022-056048-) is located on a knoll in a gently undulating low-lying landscape at the eastern foot of Rathcroghan plateau. It is a circular grass-covered platform (24.2m north-south and 24m east-west in diameter and 0.8m high at the east and 1.6-1.7m generally) defined by a flat-bottomed fosse with an outer bank which is incorporated into a field bank. There is a ramp entrance

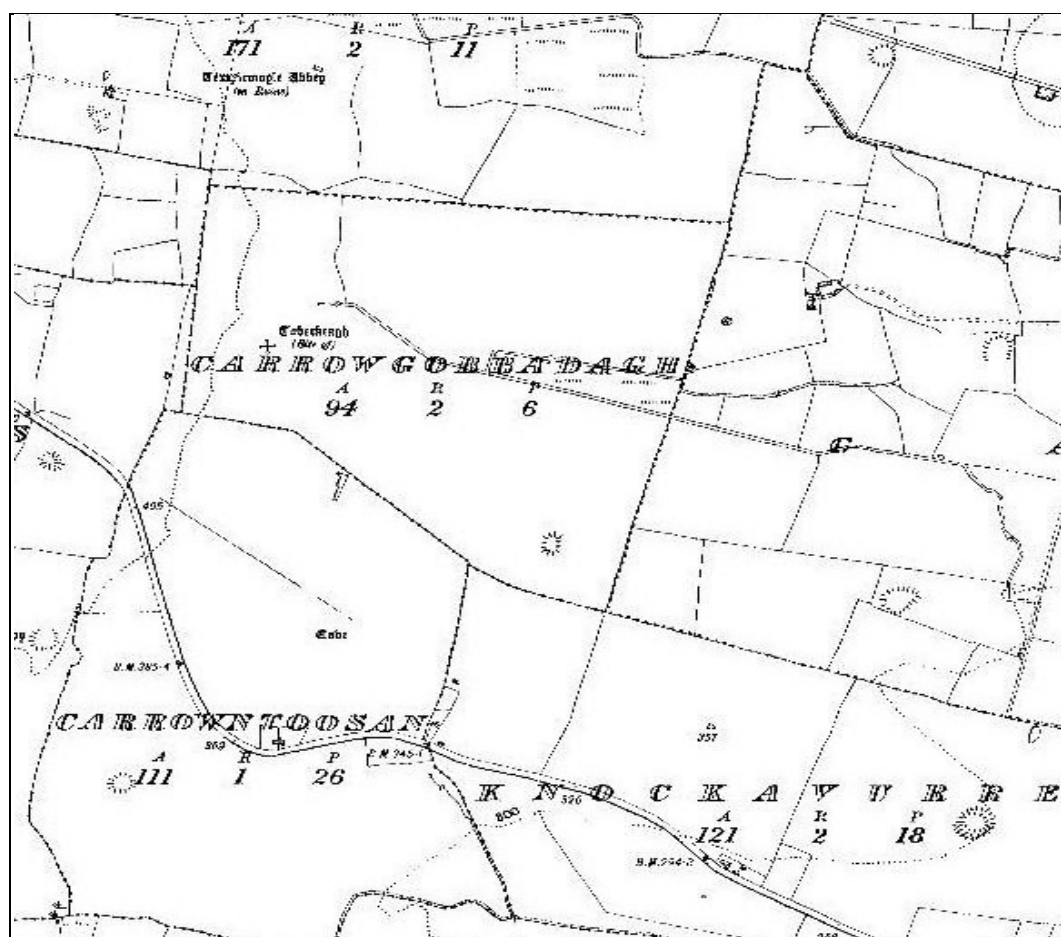
(4.6m wide) onto the mound at the east. Aerial photography shows an adjacent (conjoined) oval enclosure to the west of the upstanding monument, there is no evidence of this adjacent feature in the field. The monument overlooks a wetland area to the south.

Planning history (if applicable)

The archaeological landscape of Rathcroghan, the Royal seat of the kings of Connaught is one of Tentative World Heritage List of potential nominees for World Heritage status. The Cashla-Flagford 220 kV transmission line was constructed in 1980-82. There are no archaeological reports recorded for the 1980's in this area for transmission projects.

Historic mapping

Numerous archaeological sites are shown throughout the area on the historic mapping (Illus. C 50).



Illus. C 50 First edition Ordnance Survey 6-inch map showing the complex pattern of field systems and archaeological monuments

Observations from site visit (level of impact, significance of impact)

The land is used for agricultural purposes, primarily for grazing. The transmission line crosses part of the royal archaeological landscape of the Rathcroghan complex, which is on the Tentative List for nomination to the UNESCO World Heritage Sites list.

As an ancient royal site it offers the opportunity to engage with the physical past and mythical past of Ireland. The study area contains various site types, discreet sites such as souterrains, ringforts and enclosures and dispersed sites in the form of field systems and pit-fields. These features are also physically connected by a network of ancient roads and track ways.

The transmission line runs across this landscape of archaeological significance. While individual features are not directly physically impacted, towers are placed in areas of archaeological activity such as pit fields and field systems where there may be additional associated features present. The placement of a transmission line across this archaeological landscape does distract from the landscape and the individual components and is inappropriate. This is shown in the illustrations below (Illus. C 51 – C 54)



Illus. C 51 Transmission line spanning a substantial platform ringfort site (RO022-056048)



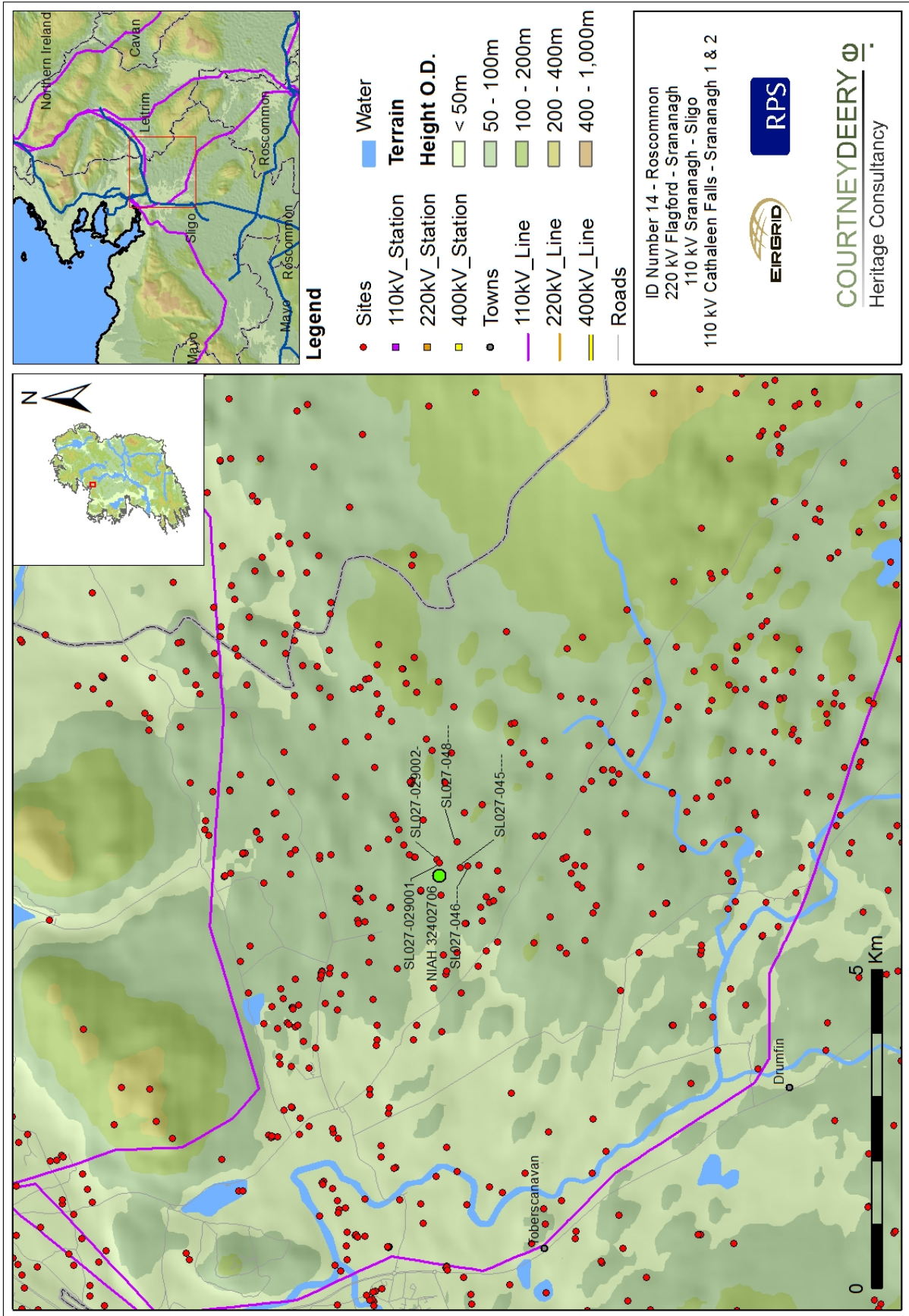
Illus. C 52 Transmission line and steel lattice towers on the western side of enclosure (RO022-057062) and souterrain site (RO022-057063)



Illus. C 53 Transmission line and towers over road/trackway (RO022-057061)



Illus. C 54 Transmission line and towers over ancient road site (RO022-057052, a national monument that forms part of the Rathcroghan Archaeological Complex)



ID No	14	
County	Sligo	
Townland	Ballysumaghan	
Transmission line/substation/ UGC		
Flagford-Srananagh 220 kV (not live at the time of survey)		
Srananagh-Sligo 110 kV		
Cathaleen Falls – Srananagh 1 & 2 110 kV		
Srananagh substation		
Transmission Infrastructure		
Srananagh substation, steel lattice towers and wooden double polesets, substation store and access roads.		
Protected Status/Unique ID	Site Type	NGR
SL027-029001	Cursing stone	174753,325408
SL027-029002	Enclosure	174809, 325441
SL027-045	Ringfort	174678, 325069
SL027-046	Enclosure	174708, 324957
SL027-048	Enclosure	175086, 325119
NIAH 32402706	Castle Neymoe	174560, 325526
Other Site Types		
Srananagh substation is located within the demesne lands of Castle Neynoe (SL-25-G-745255) which is part of the Garden Survey of the National Inventory of Architectural Heritage (NIAH). The demesne is shown on the 1 st edition Ordnance Survey 1" and 6" 1837-41 series. The survey records that the main features are unrecognisable and that the peripheral features are visible. It also comments that the 'screening woodland in the peripheral landscape has been removed' and 'the lough which appears on the 1936-1846 OS has been drained'.		
Impact		
Following archaeological investigation the impact is considered to be slight		
Condition		
Typical		

Site Description

The enclosure (SL027-029002) is located on a steep north facing slope and downslope from the site of the 'Sumaghan Stones' cursing stones (SL027-029001-). It presents as a circular area with an internal diameter of 24m east-west, enclosed by an earth and stone bank and an external fosse (approximately 1.6m wide and 0.5m deep). The bank is 2m wide and has a 1.6m internal height and 1.4m external height, it is steep sided and narrow. The southern half of the interior slopes down steeply to the north while the northern half is level.

According to Wood-Martin (1892, 363-4), the 'Summaghan stones' comprised seven stones that were used for the purpose of curing and, together with a similar set of stones at Barroe (SL021-096--) in Lavally townland, were the 'special heritage of the Summaghan family'. The ceremony performed at the stones 'appear to have closely resembled that observed on Inismurray' and in addition required the postulant to be 'barefooted and bareheaded' (ibid). Wood-Martin also recorded the tradition that the stones were once cast into the neighbouring lake (Castle Lough?), yet were found the next morning in their accustomed place and that one mode of averting the curse was for the person against whom 'the stones were turned' to have a grave dug, to lie in it and have three shovelfuls of earth cast over him while the gravediggers recited certain rhymes (ibid.). The stones were already removed in Wood-Martin's time and now only a small circular cairn of stones (approximately 4m in diameter and 1m high), probably a field clearance cairn and a linear bank of earth and stones (8m north-south and 4m east-west) is located 2m east are evident at the site.

The ringfort (SL027-045) is located on a low rise in low-lying pasture, the ground rises gradually to the west. A raised steep-side oval area (27.5m north-south and 24m east-west) is defined by an earth and stone bank to the north and northeast. Elsewhere it is defined by a scarp approximately 1.2m in height. The bank has internal kerbing and is faced with large stones externally. The perimeter of the rath is overgrown with hawthorn bushes. The interior is mostly grass-covered with some overgrowth. Trees are indicated within the interior on the 1838 OS 6 inch edition map. There is a circular enclosure (SL027-046) located 100m to the south-south-east. This site is located on a low ridge, in generally lowlying rough grazing. It presents as a circular area (16m in diameter) is enclosed by an earthen bank, eroded in places. Boggy ground is located immediately outside the bank along the west and may indicate a silted up fosse. There is a road immediately to the south and east. This enclosure and the aforementioned ringfort are now surrounded by young forestry plantations; a buffer zone has been put in place around both sites.

The enclosure (SL027-048) is located in pasture on a south facing slope just below the summit of a ridge. A circular area enclosed by an earthen bank and an external fosse with gently sloping sides. The bank and fosse are truncated SSE-SSW by a field boundary. The enclosure is overgrown with gorse bushes.

Castle Neymoe is recorded as a country house of regional importance. It is a detached three-bay, two-storey over basement stone former mansion, built c. 1790, now a ruin. The roof of the structure is

missing and there is a central projecting circular tower. The walls are uncoursed rubble limestone over a projecting base plinth. The window openings are pointed-arch openings with dressed ashlar limestone chamfered surrounds with limestone sills, the windows are missing. There is a pointed-arch entrance door feature in the tower with a dressed ashlar limestone chamfered surround. There are outbuildings to the rear (east) of the main house. The NIAH describes this ruin as a Gothic-style house that sits in a picturesque setting as a romantic ruin, casting an impressive presence on the landscape. In the NIAH it is considered a house, rich in history and skilfully designed.

Planning history (if applicable)

Prior to and during the construction and development of the station and OHL towers, archaeological reporting, testing and excavation and monitoring took place. While features of possible archaeological interest were revealed at the testing stage of the development, these were later fully excavated and found to be natural and not archaeological in origin. The following are accounts of the testing and excavation work carried out at the site extracted from www.excavations.ie:

Licence Number	04E0334	Townland	Ballysumaghan
Excavations Bulletin Ref	2004:1495		

Testing of the site of a proposed development was carried out on 23 February 2004. The proposed development is part of the Flagford-Srananagh 220/110 kV project and involves the construction of an electrical substation in Ballysumaghan. The site of the substation is adjacent to a crannog, an unlocated crannog and an enclosure. In an assessment carried out by Ros í Maoldóein in December 2003, three areas of possible archaeological interest that would be impacted on by the development were identified: Possible Site (PS) 1, a potential enclosure; PS 2, a triangular area enclosed by a bank and ditch; and PS 3, a potential crannog. Topsoil-stripping at the construction stage is unlikely to be carried out in the vicinity of PS 3.

Five trenches were excavated by machine across the areas of PS 1 and PS 2 to natural undisturbed levels. PS 1 appears to be the natural edge of a geological feature, which has been quarried. In the area of the triangular enclosure, PS 2, testing revealed no information regarding the date of the bank or ditch. A small amount of charcoal flecking was recorded in the bank material, but no artefacts or features were recorded that could provide a date or a function for the feature. (*Elizabeth Connolly, for Valerie J. Keeley and Co., Brehon House, Castlecomer, Co. Kilkenny*)

Licence Number	04E1254	Townland	Ballysumaghan
Excavations Bulletin Ref	2004:1496		

Excavation was undertaken in Ballysumaghan townland as part of the Flagford-Srananagh 220/110 kV project, which involves the construction of an electrical substation on the site. Monitoring of ground disturbance and topsoil-stripping identified three potential sites of archaeological importance. The northern half of the development encroaches on the site of a drained lake, Castle Lough. The lake contains at least one extant crannog, which lies outside the area of proposed development, and reference was found to a second crannog. The southern portion of the development is situated on the north-facing slope of a hill that affords good views of the former lake and its surrounding environs. Site 1 was the most southerly and measured c. 12.5m east-west by 15.65m. Site 2 was north-west of Site 1 and measured c. 17m east-west by 11m. Site 3 was the most northerly site and measured 9m east-west by 20m. There was c. 0.3m of topsoil over Site 1. There was a small irregular feature of charcoal and burnt clay in the centre of the site. It measured 0.43m by 0.26m and had been truncated by a track machine. Excavation revealed it to be of no archaeological significance.

Site 2 comprised a small circular feature identified in the north-west corner of the site. It measured 0.41m by 0.45m and was very shallow, 0.06m. The base was irregular and undulating. It was filled with mid-brown silt with c. 3% sand and 10% charcoal flecks. There were also trace amounts of burnt clay. No finds were recovered from this feature nor was it in association with any other archaeological anomalies. It appeared to be a natural occurrence and was of no archaeological significance.

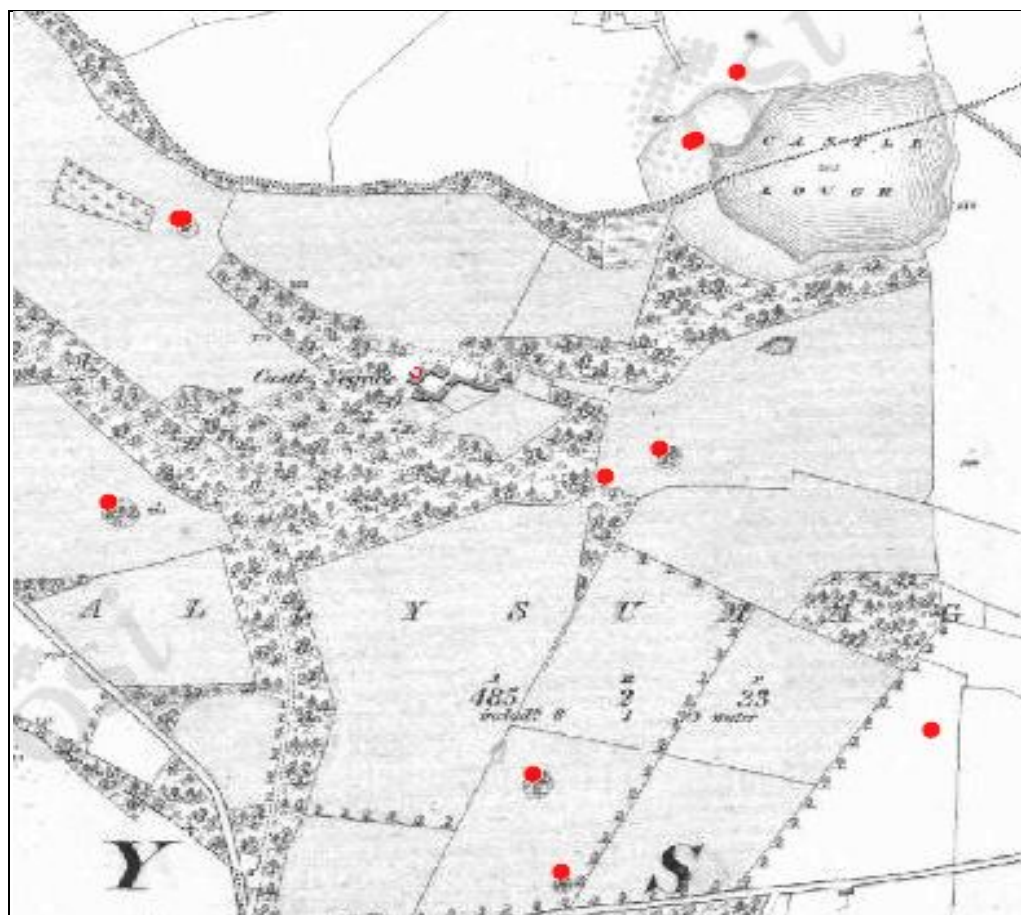
Traversing the site in an east-west orientation were the remnants of five plough furrows. They were 0.38-0.54m in width and 0.05-0.06m deep. They were only evident on the southern end of the site and were filled by friable mid-brown clayey silt. No finds were recorded from this fill. The furrows on the southern side of the site were cut into the natural subsoil. One piece of struck flint was recorded from the topsoil at this site.

Site 3 was the most northerly of the three sites. After cleaning, no record of a linear ditch was identified and it was probably the result of excess subsoil being left behind during the topsoil-stripping. One irregular-shaped area of burning was identified in the south-west corner of the site. It consisted of friable grey/brown silty clay with frequent patches of charcoal staining, root fragments and occasional patches of burnt clay. It measured 0.64m by 0.53m, with a depth of 0.02-0.05m. This feature is similar to that on Site 1 and is not of archaeological significance; it is probably the result of burning of natural vegetation. Situated along the eastern boundary of the site was a natural deposit of gravel, which was orientated in an east-west direction. It measured 0.65m by 1.9m and was 0.05m deep.

The anomalies identified were the result of non-archaeological activity on the site, including natural cavities, geological features and the burning of vegetation, which was possibly the result of field clearance. There was some charcoal flecking within three of the features, but this was in an otherwise sterile context. (*Colum Hardy, for Valerie J. Keeley Ltd, Brehon House, Kilkenny Road, Castlecomer, Co. Kilkenny*)

Historic mapping

The first edition OS 6 inch map shows that the siting of Srananagh Station is located within the demesne lands for Castle Neymoe (Illus. C 55). The station is located on the eastern periphery of the lands south of 'Castle Lough' and to the north of tree lined fields and pocket woodland. Castle Neymoe is located to the west surrounded by mature trees. A number of circular enclosures and forts are located within the demesne lands.



Illus. C 55 First edition Ordnance Survey 6-inch map showing the Castle Neymoe Demesne. The archaeological monuments are indicated

Observations from site visit (level of impact, significance of impact)

The approach to the substation is via a small country lane. Part of a bank of an enclosure is located adjacent to this laneway (Illus. C 56) on a naturally occurring hillock. Care must be taken in the future to protect this monument if there are any requests to widen this lane to provide increased access to the substation. The lane is oriented northeast-southwest and rises northwards. At the summit a tower is located and a large store for the substation. The lane then falls away to the north, sloping steeply to reveal the substation.

The siting of the substation occurs within a naturally occurring low lying basin of land (hollow) and so the surrounding landscape acts as a natural screen. The area has experienced changes over the

years and this can be viewed on the subsequent editions of the OS maps and in the field where hills to the north of the station are now covered with forestry plantations.



Illus. C 56 Enclosure (SL027-046) located adjacent to the access road for the station. This monument is now surrounded by plantation forestry. A tower can be viewed at the end of the road.

It is interesting to note that at first glance this area looks to contain a number of interrelated heritage assets (demesne landscape, upstanding monuments, cultural and built heritage features), but on a closer examination, supported by a field inspection, reveals itself as an appropriate location for a substation. Given the topography and restricted views to and from the substation and changes in the landscape, it does not conflict with the existing environment that the monuments and built heritage structures present themselves within.

The nearest recorded monument, an enclosure (SL027-029002) located approx. 50m to the west is in private lands and well screened behind a tree lined boundary (Illus. C 57). The other surrounding monuments located to the south are screened from the substation by the undulating topography of the landscape and from the steel towers (OHL transmission lines) by new forestry plantations.



Illus. C 57 View to the enclosure (SL027-029002) located 50m west of the substation. Photo taken from the south.

There are few remnants of the former demesne landscape with Mullaghbawn Wood located to the south of the substation. However, the majority of the original planting and woodland belts have been removed from the landscape (Illus. C 58 and C 59).

The demesne lands were largely broken up and in separate ownership in advance of the development of the substation. The lough to the north is now a wetland area, and when standing at the substation there are no recognisable features associated with the former demesne landscape. The former country house, Castle Neymoe, cannot be viewed from the substation.

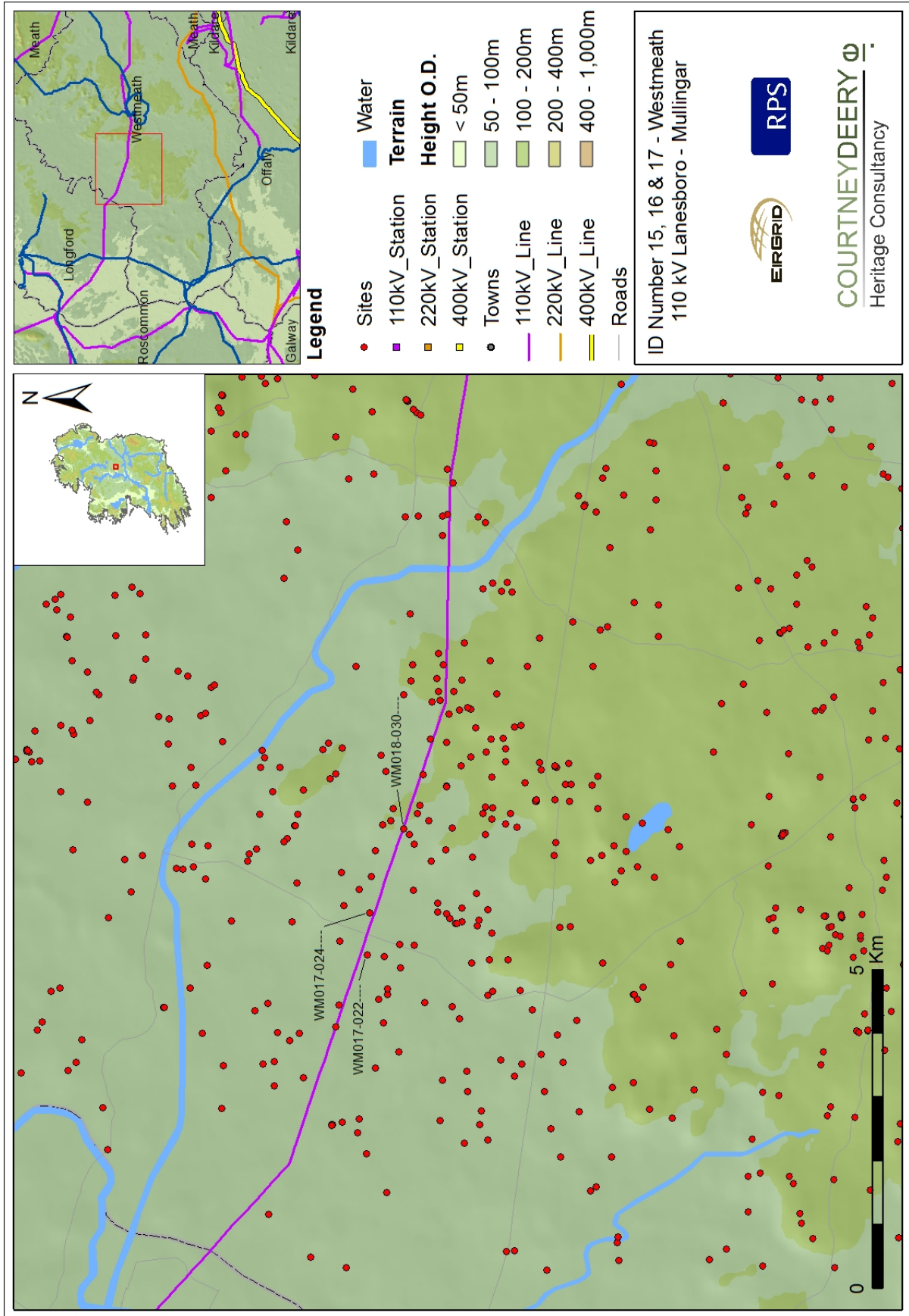
Steel lattice towers are located in the wetland area to the north of the substation and an access path with a hardcore surface provides access to these towers. Given the wet nature of the landscape, these towers were built on a concrete superstructure (Illus. C 58 and C 59).



Illus. C 58 North of the substation, steel tower are located in a wetland area (former Castle Lough). The substructure is raised and exposed.



Illus. C 59 Substation taken from the north, woodland (Mullaghbawn Wood) can be viewed in the southeast corner.



ID No	15	
County	Westmeath	
Townlands	Davidstown	
Transmission line/substation/ UGC		
Lanesboro – Mullingar 110 kV		
Transmission Infrastructure		
Double wooden poleset		
Protected Status/Unique ID	Site Type	NGR
WM018-030	Ringfort	230914, 255656
Impact		
There is a direct significant impact on this monument		
Condition		
Worse case		

Site Description

The ringfort is located to the north of a working farmyard, and the banks of the feature form the eastern and north-eastern field boundaries. The ringfort is a well-defined oval enclosure; however the site is in a poor condition being incrementally eroded due to overgazing. An entrance feature is located to the southwest; this feature is approximately 3m wide and defined by two large upright orthostats. The monument takes advantage of natural hillock and enjoys good views to the east and to a lesser extent to the west as the land rises.

The ringfort was visited by the Archaeological Survey of Ireland in 1970. It was described as a large broad oval uneven enclosure, with a slight general slope from the northeast-southwest bounded by remains of a massive earthen bank with slight remains of a wide external fosse. The bank is best preserved from the northeast-east and south. Elsewhere, it is slighter and it has several small gaps which are due to disturbance. The outer face of the bank shows signs of having been steepened on the outside from the north northeast-east-south. The fosse is clearly visible from the north-northeast-east-south-west and northwest. It is best preserved from the south to the west. Two ESB poles stand outside the fosse on the west and there is a slight modern counterscarp bank between them and the fosse. A modern stone wall obscures the counterscarp from the west northwest-north.

A wide gap on the south southwest may mark the entrance. On either side of this a large stone is set on edge in revetment to the inner face of the bank. There is a very slight causeway outside the gap but it is near a modern fence and it may not be original. Modern fences contact the scarp on the north northeast and on the south. Parts of the interior and perimeter support thorn trees. The site dimensions are as follows:

Top width of entrance gap	4.5m
Bottom width of entrance gap	2.5m
Overall width of causeway	5.6m
Top width of causeway	3.5m
Height of causeway	c. 40cm
Height of scarp	60cm

To the west southwest of centre, a rectangular house, oriented west northwest–east southeast with an opening in its west northwest end is vaguely suggested by a slight grass covered bank. Extending southeast from its southeast corner is a low straight scarp from which a portion of rock protrudes. A portion of the interior to the east of centre is slightly higher than the rest of the interior but this would appear from the surface to be a natural feature. The site dimensions are as follows:

Internal length of house	5.8m
Internal width of house	4.5m
Overall width of house bank	1.80m
Top width of house bank	c. 1m
Height of house bank	35cm average

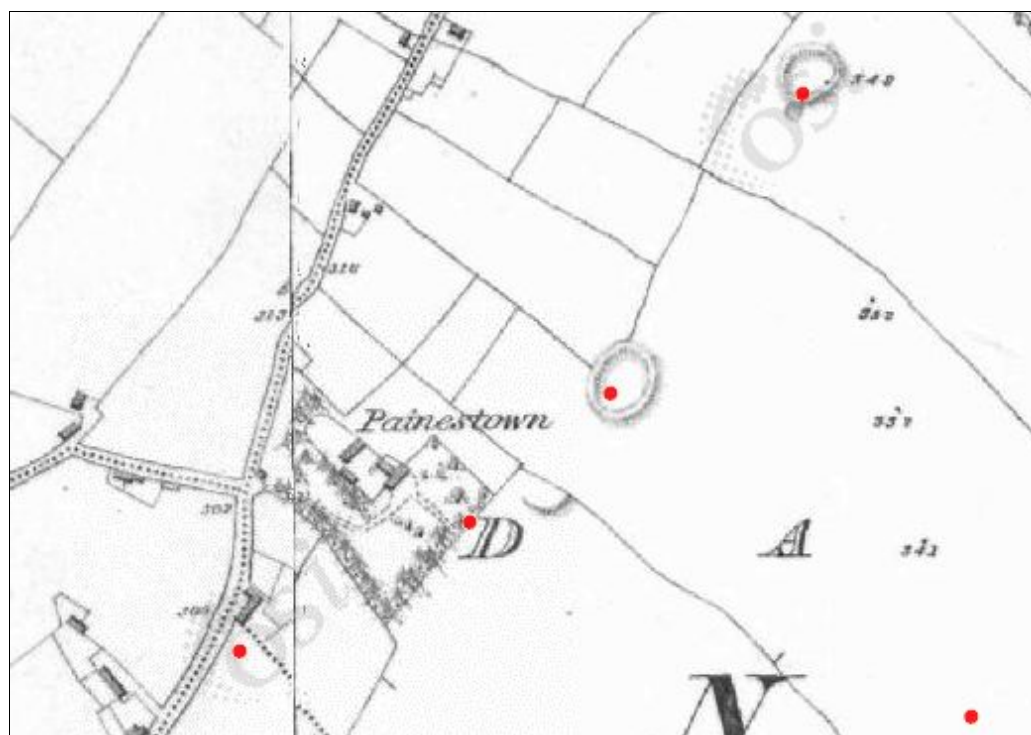
Situated southwest of the top of a gentle natural rise of good pasture. The site is surrounded by gently undulating land. There are good views in all directions.

Planning history (if applicable)

There is no record of any planning conditions in relation to archaeology in Davidstown townland. Mullingar substation and loop was constructed in 1971; it originally formed part of Finglas-Lanesboro which was constructed in 1967, refurbishment works were conducted in 2003. The double wooden poleset was noted by the Archaeological Survey of Ireland personnel in 1970.

Historic mapping

The ringfort is located to the northeast of a collection of buildings shown as Painestown. In a later edition of the OS these structures are referred to as Fairy Mount (Illus. C 60).



Illus. C 60 First edition Ordnance Survey 6-inch map showing the recorded archaeological monuments

Observations from site visit (level of impact, significance of impact)

The ringfort is located within a pasture field in an undulating landscape. There are remnants of a former house and courtyard to the west of the ringfort on lower ground. The field that the ringfort stands within is currently used for grazing horses.

The site is heavily denuded by animal poaching and tyres are placed against the south eastern bank. The double wooden poleset is located 1m to the south of the outer western bank and the lines cross directly over the monument (Illus. C 61 and C 62).



Illus. C 61 Looking west from the interior of the ringfort



Illus. C 62 Looking east, the double wooden poleset located immediately outside the ditch associated with the monument.

A local electricity connection crosses the site in a north-south direction and is supported by a wooden pole placed in the interior of the site to the east of the entrance feature (Illus. C 63 and C 64).



Illus. C 63 Taken from the south, showing 110 kV Lanesboro – Mullingar line and the local connection



Illus. C 64 Taken from the south, showing the general environment of the ringfort.

There is a direct impact on this monument due to the proximity of the transmission line. The siting of the double wooden poleset is inappropriately located and, from a cultural heritage perspective, leads to a degradation of the setting of the site. A local connection crossing over the site in a north-south direction further diminishes the character of the monument.

ID No	16	
County	Westmeath	
Townlands	Irishtown	
Transmission line/substation/ UGC		
Lanesboro – Mullingar 110 kV		
Transmission Infrastructure		
Double wooden poleset		
Protected Status/Unique ID	Site Type	NGR
WM017-024	Ringfort	229599, 256182
Other Site Types		
Irishtown Demesne is not included in the NIAH Garden Survey; it is shown as a demesne landscape on the 1 st edition OS mapping.		
Impact		
Slight/negligible impact to the ringfort and Irishrown Demesne		
Condition		
Typical		

Site Description

This is an impressive, upstanding ringfort; planted with mature trees. It is likely that trees were added as an ornamental and decorative feature at a later stage. The monument is defined by a bank; faced with stone in places and a ditch and is circular in form (approximately 32m in diameter). It has a raised central area and the evidence of a fosse is more pronounced on the north-western and western exterior of the ringfort. It was located in a demesne setting during the 19th century and the site probably acted as a folly to the main house which would have stood to the northwest of the monument.

The site is described as follows in 1975 (Archaeological Survey of Ireland):

Transformed into a tree ring and could be mistaken for such but for a very slight low broad grass covered bank in the interior suggests a rectangular house site such as one might find in a ringfort. The bank was steepened when planting the trees in it and the outer stone facing (dry masonry)

probably dates from this time. The bank has several slight disturbance gaps. Original entrance way is not recognisable. Sited on a small natural terrace of the southwest side of a high prominent hill of average to good pasture. Good views to the northwest, west and southwest.

In 1981 (Archaeological Survey of Ireland) the site is described as follows:

A roughly broad oval earthwork outlined by a scarp with the remains of a low bank of earth and stones at its upper edge and of a narrow shallow fosse at its foot. The fosse is only preserved from the south southeast-south-southwest and west and is very shallow and faint. From the west-north-south southeast the area of the fosse has been largely churned up by cattle and the fosse is not visible. The scarp is low and quite faint from the northwest-north-east=southeast but it is slightly higher from the southeast-south-west. The bank is very poorly preserved around most of the perimeter. It is fairly well preserved on the west for a short stretch and poorly preserved from the west-north-east. From the southeast-south-west the bank is barely discernible.

There are some stones visible in the outer face of the bank and scarp on the west-south and southeast and there seems to be the remains of a stone facing there but this is not clear. The bank and scarp have been defaced in a number of places by cattle. There is no indication of an entrance. The interior slopes very slightly from north to south. There is a rectangular hut site north and northeast of the centre, this is outlined by a low and faint scarp and is not clearly defined. The perimeter is overgrown with thorn trees and there are some trees in the interior and the stumps of others are visible. It seems likely that the site was used as a tree-ring in the past and the bank may have been modified when the trees were planted in places on the east and south. The bank does have a rather sharp profile. Located in slightly sloping pasture land with a long ridge, roughly east to west to the north and northeast. Fairly good views to the south and west.

Planning history (if applicable)

This site was reported to the Commissioner of Public Works – Parks & Monuments Office in 1963 by the Department of Agriculture, Land Project Office. In correspondence it was stated that the site appears to be a large tree-ring and that there was no objection to its inclusion in Land Project works. The site was originally recorded as a large tree-ring with a slight bank faced with stone on the outer side and no fosse in 1963 by H.G. Wheeler (archaeologist). No history or traditions were known to be associated with it. The site was then classified as a ringfort in 1975 when it was revisited.

Mullingar substation and loop was constructed in 1971; it originally formed part of Finglas-Lanesboro which was constructed in 1967, refurbishment works were conducted in 2003.

Historic mapping

The historic map shows the ringfort located within a designed landscape with the principal buildings located in the northern corner located between two roads. Stone outbuildings (stables and coach houses) located around a central courtyard are all that are left of the upstanding structures. The house, now demolished, would have overlooked the monument.



Illus. C 65 First edition Ordnance Survey 6-inch map with the RMP sites indicated

Observations from site visit (level of impact, significance of impact)

The monument is located in a farmed landscape of pasture stone-wall lined fields in former demesne lands (Illus. C 65).

The double wooden poleset does not detract or physically impact on the ringfort (Illus. C 66 – C 68). The transmission line is located to the west and south of the monument. The nearest poleset located to the south and along the field boundary in the adjacent field is approx. 60m from the ringfort and the overhead line crosses the corner of the same field that the monument is located within. The line is set at a lower level than the ringfort as the land rises to the east, as the poleset is located along the tree lined boundary it tends to blend in with the mature trees and does not detract from the setting of the monument.

Ringforts and castles belonging to the Early Medieval and Anglo-Norman time periods dominate the record in the immediate landscape. Remnants of later 18th and 19th century demesnes such as stone walls and stone structures, outhouses, medium sized houses and gardens are located throughout this landscape. The Lanesboro – Mullingar 110 kV is located in between many earthen monuments. In general, it does not detract from the existing agricultural setting.



Illus. C 66 Located at the corner of the former demesne lands, the stone outbuildings are the only upstanding built heritage features remaining.



Illus. C 67 Taken from the northeast, showing the ringfort (WM017-024) and the double wooden poleset to the south.



Illus. C 68 View from the western side of the ringfort looking south

ID No	17	
County	Westmeath	
Townlands	Irishtown	
Transmission line/substation/ UGC		
Lanesboro – Mullingar 110 kV		
Transmission Infrastructure		
Double wooden poleset		
Protected Status/Unique ID	Site Type	NGR
WM017-022	Ringfort	228934, 256223
Impact		
No impact		
Condition		
Typical		

Site Description

Recorded as a ringfort, this site presents as a large mounded area surrounded by plantation forestry (at different stages of the forest cycle). The site is located on a natural undulating ridge to take advantage of the views over the landscape. There are good views in all directions over the plains of Westmeath. It is a bivallate ringfort with an elevated central interior. Although disturbed, the site appears as a large oval mound approximately 47m north-south. While the eastern section of the site is largely inaccessible as it is overgrown with gorse bushes, there is evidence of a filled-in ditch approx. 3 m wide and a stone lined bank. The outer bank is well defined on the western side and there is a possible entrance at the south east. A buffer zone of some 15-20m metres is maintained around the visible edge of the mound.

The site was visited on two occasions by representatives from the Archaeological Survey of Ireland in 1975 and 1980. It is described as an oval very uneven enclosure bounded by a slight steep embankment with very slight remains of a bank on its upper edge and with slight remains of a fosse at its foot. There is an earthen bank at the outer edge of the fosse along some of its circumference but this appears to be part of a field bank. The original entrance way is not recognisable. The interior rises appreciably from the perimeter towards the centre. It is much disturbed by digging of relatively modern slate. The embankment supports thorn bushes and briars. The site is a natural hillock.

Relatively lowlying surrounded by poor land which appears to have been waterlogged until the recent drainage of the area.

In 1980, it is described as a roughly circular earthwork bounded by a scarp with the remains of a low bank of earth and stones at its upper edge of a fosse at its foot and of a low outer bank. The entire perimeter has been defaced during recent land reclamation works, when thorn trees were uprooted from the outer bank and from the scarp. This caused a good deal of damage particularly to the outer bank but also to the scarp in places. The outer bank survives from the northwest-north-east. The fosse survives from the south southeast-south-west-north-east and has also been partly defaced by the recent disturbance, and some boulders have been dumped in it on the western side. There is no indication of a bank or fosse now from the east-south southeast. The inner bank is very poorly preserved and only survives from the north northeast and from south to west.

There are remains of an internal and external stone facing from the north-east where the bank has the appearance of a poorly preserved wall footing. There is no sign of an entrance.

The interior rises unevenly towards the centre and has been extensively disturbed in the past. There is a large depression south and southeast of the centre, and other smaller depressions over most of the north, east and south of the site. There are stones visible in the surface on the south and east but no structures are discernible. The site is located at the southeast end of a small low natural ridge in fairly flat and poor pasture. There are extensive views in all directions except the northeast where there is a high ridge, some distance away. The site measures 38.5m north northeast-south southwest and 38m west northwest –east southeast.

Planning history (if applicable)

Mullingar substation and loop was constructed in 1971; it originally formed part of Finglas-Lanesboro which was constructed in 1967, refurbishment works were conducted in 2003. The landscape has altered due to forestry plantation.

Historic mapping

As shown on previous historic first edition OS 6 inch map (Illus. C 65) this is an impressive looking site. It is shown as a double banked circular enclosure with mature trees planted around the site at regular intervals.

Observations from site visit (landuse, level of impact, significance of impact)

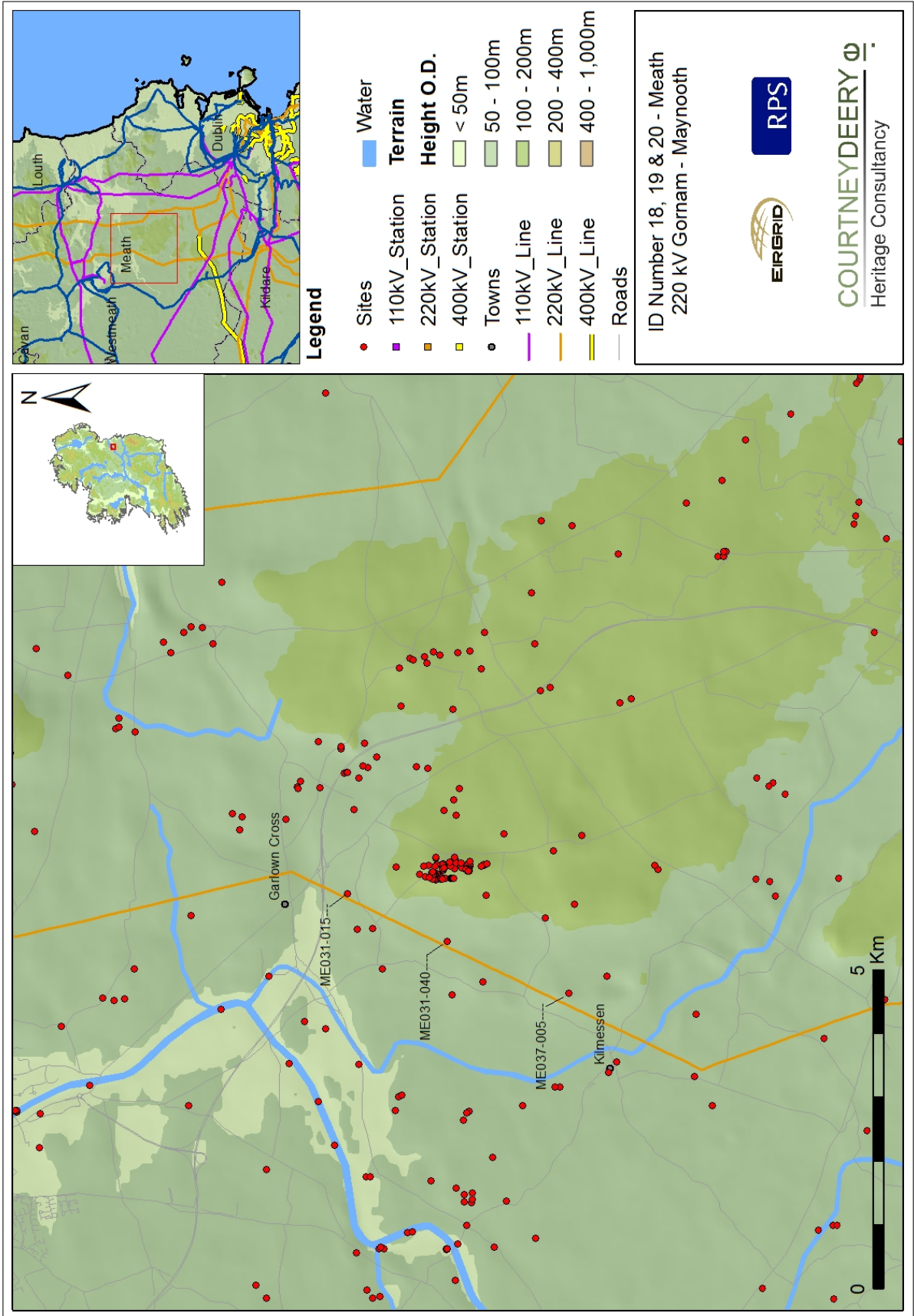
The monument is isolated within a forestry plantation. The overhead line is located approx. 50m to the north (from the visible edge of the monument) and has no direct impact on the site and does not detract from the setting (Illus. C 69). The double wooden poleset blends into the forestry landscape (Illus. C 70).



Illus. C 69 Taken from the top of the mound looking northwest towards the wooden double poleset



Illus. C 70 View from the monument looking north showing the buffer zone, forestry plantation and double wooden poleset



ID No	18	
County	Meath	
Townlands	Castletown Tara	
Transmission line/substation/ UGC		
220 kV Gorman - Maynooth		
Transmission Infrastructure		
Steel lattice tower		
Protected Status/Unique ID	Site Type	NGR
ME031-015	Ringfort	291535, 261512
Other Site Types		
This site is associated within the cultural heritage landscape of Tara; the Royal site of Tara is on the Tentative List to be considered for World Heritage Site status and is a National Monument (676 and 148). The monument is located 2km north northwest from the Hill of Tara.		
Impact		
Non-standard/ Significant impact		
Condition		
Worst case		

Site Description

Known as 'Rathmiles', this monument is located 2km north-north-west of Tara. It is situated on the northern slopes of the Hill of Tara, overlooking an area of low ground to the north. It is slightly oval in plan and consists of a domed platform, surrounded by a counterscarp bank and external fosse, which survives best in the southern quadrant. There are traces of an external bank in the northern and eastern quadrants, so it is possible that the earthwork was originally bivallate. It has an overall diameter of about 100m, and the original, possibly causewayed, entrance appears in the south-east.

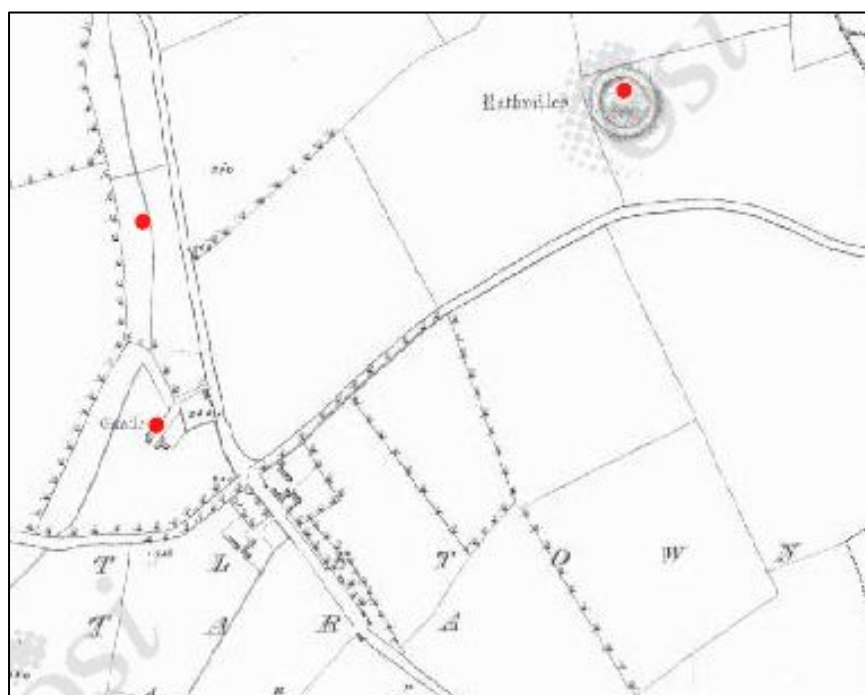
The Archaeological Survey of Ireland describes the site as a 'sub-circular naturally raised area defined by a scarp (64m northwest-southeast in diameter and 52m northeast-southwest). It has an entrance at the south east and there is no visible fosse'.

Planning history (if applicable)

The transmission line was constructed in 1970-1971 in advance of a full understanding of the extent of the Tara cultural heritage landscape being developed.

Historic mapping

The royal site of Tara and the Rathmiles monument are indicated on the first edition 6- inch Ordnance Survey mapping (Illus. C 71). Rathmiles is named and shown as a large embanked enclosure located at the northwest corner of a medium sized field.



Illus. C 71 First edition Ordnance Survey 6-inch map showing Rathmiles (ME031-015) and the Tara Royal site which lies to the southwest.

Observations from site visit (level of impact, significance of impact)

The site is strategically placed on a prominence that surrounds Tara and is probably defensive in nature. When considering this monument, the setting of this site is of key importance and the location of a steel lattice tower to the northwest in the corner of an adjacent field has a significant impact on the immediate setting of the site (Illus. C 72). As the lands slope away to the northeast, the tower is located on lower land when viewed from the south, so the full mass of the tower appears over the monument. The tower is inappropriately placed and, from a cultural heritage perspective, it is considered to be too close to the monument.



Illus. C 72 Rathmiles from the southwest showing the 220 kV Gorman – Maynooth transmission line.

ID No	19	
County	Meath	
Townlands	Ringlestown	
Transmission line/substation/ UGC		
220 kV Gorman - Maynooth		
Transmission infrastructure		
Steel lattice tower		
Protected Status/Unique ID	Site Type	NGR
ME037-005	Hillfort	289974, 258046
Other site types		
<p>This monument is associated with the cultural heritage landscape of Tara; the Royal site of Tara is on the Tentative List to be considered for World Heritage Site status and is a National Monument (676 and 148). It is located 2.5km west from the Hill of Tara. Ringlestown hillfort is subject to a preservation order (PO No.31/1976 (17 August '76)). (Preservation Orders 1st February 2010 list www.archaeology.ie).</p>		
Impact		
Moderate impact		
Condition		
Non standard/ worst case		

Site Description

The Archaeological Survey of Ireland describes the site as a 'circular area defined by a large earthen bank (approx. 12m in diameter) with traces of an internal fosse to the NE-SSW. Surrounded by an external fosse with outer stone faced bank. Entrances are located through the inner bank at the NE and SE.'

Ringlestown Rath, is located 2.5km to the south-west of Tara. It is sited on a prominence, with the ground dropping away on all sides, most steeply to the west and south-west and less so to the east. The defences consist of two closely set banks with intervening fosse and an internal fosse in the southern quadrant. The ramparts are best preserved in the north-eastern quadrant, where the inner bank standing an impressive 2.85m above the base of the fosse. The outer bank was cut back and

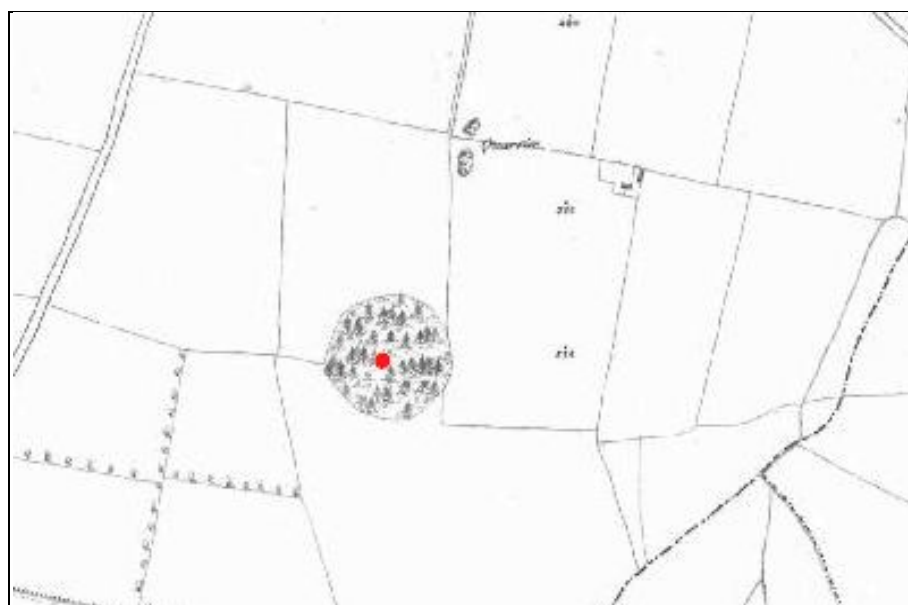
faced with stone in the recent past. There are entrances through the inner bank in the north-east and south-east. The interior is more or less level and has been extensively planted with conifers; the outer bank has been planted with broad-leaved trees.

Planning history (if applicable)

The transmission line was constructed in 1970-1971 in advance of the extent of the Tara cultural heritage landscape being identified, understood, researched and developed.

Historic mapping

Ringlestown Rath is shown as a large circular enclosure covered in trees on the 1st edition OS 6 inch mapping. It is located in agricultural fields.



Illus. C 73 First edition Ordnance Survey 6-inch map showing Ringlestown Hillfort (ME037-005)

Observations from site visit (level of impact, significance of impact)

Ringlestown Rath is located in an agricultural landscape, 2.5km from Tara. It is part of the wider Tara landscape and is one of four large defended enclosures that occupy a strategic position and commands extensive views to the west and south. It is easily recognisable from the Hill of Tara due to its tree covered nature.

The Gorman – Maynooth 220 kV transmission line and the positioning of the steel towers, are located to the west and north of the hillfort at a lower elevation as the ground falls steeply away on both sides. The tower to the west is located one field away (113m) and does interrupt the panoramic views from the monument. There is also a yard located in this area and this would appear to be the closest development to the monument. While the steel tower to the north (182m) is located at a lower

elevation, it can be clearly seen from the monument. The immediate views from the north to the monument are curtailed. The various views are shown in (Illus. C 74 – C 75). Other developments in the area include a single storey dwelling to the north, located in a similar position as a structure shown on the 1st edition OS 6 inch mapping (Illus C 73).



Illus. C 74 Ringlestown Rath taken from downslope from the north



Illus. C 75 View to the north to the transmission line from the monument.



Illus. C 76 View from the Hill of Tara towards Ringlestown Rath

ID No	20	
County	Meath	
Townlands	Castletown Tara, Odder, Riverstown	
Transmission line/substation/ UGC		
220 kV Gorman - Maynooth		
Transmission Infrastructure		
Steel lattice tower		
Protected Status/Unique ID	Site Type	NGR
ME031-040	Linear earthwork	290780, 259950
Other site types		
This monument is associated with the cultural heritage landscape of Tara; the Royal site of Tara is on the Tentative List to be considered for World Heritage Site status and is a National Monument (675 and 148). The monument is located 1km west from the Hill of Tara.		
Impact		
Significant		
Condition		
Non-standard/ worst case		

Site Description

The Riverstown linear earthwork has been traced over a distance of about 1.5km. It consists of two parallel banks built on the edge of a small river valley; the eastern bank sited as close as possible to the break of slope, the western bank slightly downslope of this. The earthwork, which runs north-south, is located about 1km to the west of the Hill of Tara. Three separate upstanding portions survive; land reclamation practices have destroyed at least 500m of this monument. The current northern terminus corresponds with the gradual levelling out of the river valley along which it is located. There is some evidence here of a third bank behind and to the east of the original two; this appears to be a presence to the topography, as the break in slope becomes less clearly defined and turns slightly eastward from this point.

Quarrying of the exposed bedrock between the banks has led to their partial destruction and considerable recent redeposition of spoil all over the monument at this end. The south terminus of the earthwork is equally problematic owing to considerable agricultural interference. The earthwork can

be traced to within a few metres of a substantial field boundary and no further. Regardless of whether it continued in a northerly and /or southerly direction, it has been proposed that the primary purpose of the earthwork is as a defensive delimitation, thus explaining why the banks are positioned to take maximum advantage of a steep natural slope or fault-line in the landscape (Newman 1997, 192).

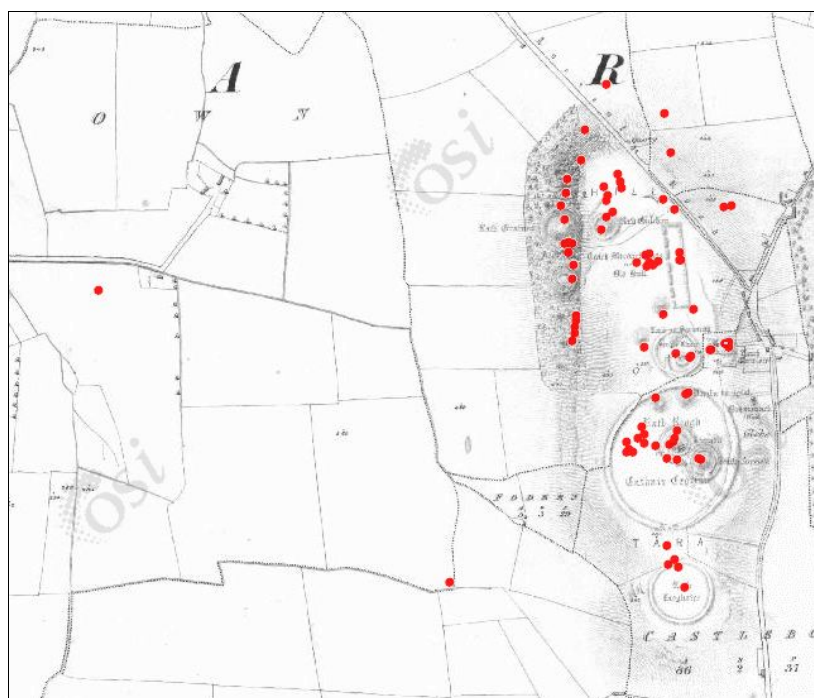
The section that was visited for the purposes of this project is located in a low lying and boggy field that has been left untouched by the farmer. There is a 25m gap in the earthwork that accommodates a small stream in this gap. To the south of this gap, the earthwork is noticeably curved. The two portions of the earthwork are aligned in a long, shallow, S-shaped meander which in the 1990's evidently continued into the field immediately to the south (Condit 1993, 11); this is now difficult to discern. Condit (1993, 12) suggests that the earthwork may have had some ritual significance and that votive deposition could have taken place in the stream and boggy area. The primary function of the earthwork is still seen as defensive, as it provided a considerable and deliberate obstacle to anyone approaching from the west.

Planning history (if applicable)

The concept of a cultural heritage landscape has evolved around Tara in the last twenty years with the work of the Discovery programme. The transmission line was constructed in 1970-1971, well in advance of the full extent being understood and researched.

Historic mapping

There is nothing on the first edition OS 6 inch mapping that indicates the presence of this monument (Illus. C 77).



Illus. C 77 First edition Ordnance Survey 6-inch map, the map shows the complex of monuments around the Hill of Tara (National Monument 676 and 148)

Observations from site visit (level of impact, significance of impact)

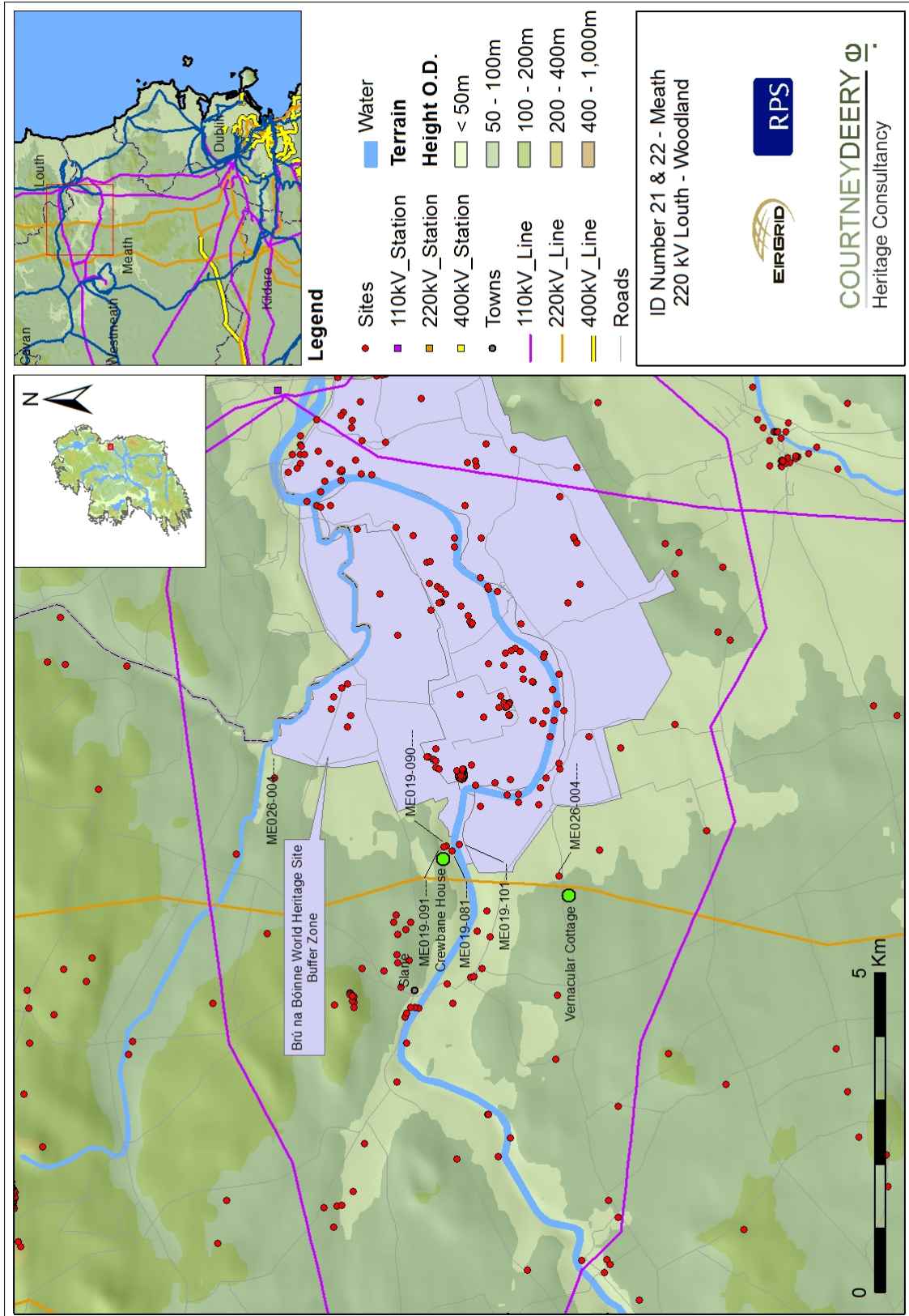
This is a linear earthwork monument trending north-south. There is no direct impact on the upstanding section of the monument that was investigated during the field assessment but the transmission line does cross over the monument and a tower is placed approximate 20m to the west of a non-visible section of the feature (Illus. C 78 and C 79).



Illus. C 78 Area surveyed, upstanding section of the monument. The transmission towers are located 230m to the west and over a 100m to the northwest.



Illus. C 79 The linear earthwork runs parallel to the field boundary (oriented north-south) in a green field. There is no visible trace of the monument. The tower is located adjacent to the field boundary. The tower at this location is approx. 20m west of the non-visible section of the monument.



ID No	21	
County	Meath	
Townlands	Rosnaree	
Transmission line/substation/ UGC		
220 kV Louth-Woodland		
Transmission Infrastructure		
Steel lattice tower		
Protected Status/Unique ID	Site Type	NGR
ME026-004	Ringfort	298097, 271908
Other Site Types		
Roadside vernacular cottage		
Impact		
Slight impact		
Condition		
Typical		

Site Description

The monument presents as a raised circular area defined by the slight remains of a bank, approximately 8m in diameter with slight traces of an external fosse. The field surrounding the monument is under crop. There is no visible entrance. The site is noted as a mound on the 1:50,000 Discovery Series mapping.

The site was recorded in the RMP in 1987 as a 'flat topped platform ringfort with a cairn of stones, probably modern in it. The field is ploughed and traces of a fosse can be seen in a dip at its base particularly in the southwest quadrant'.

Planning history (if applicable)

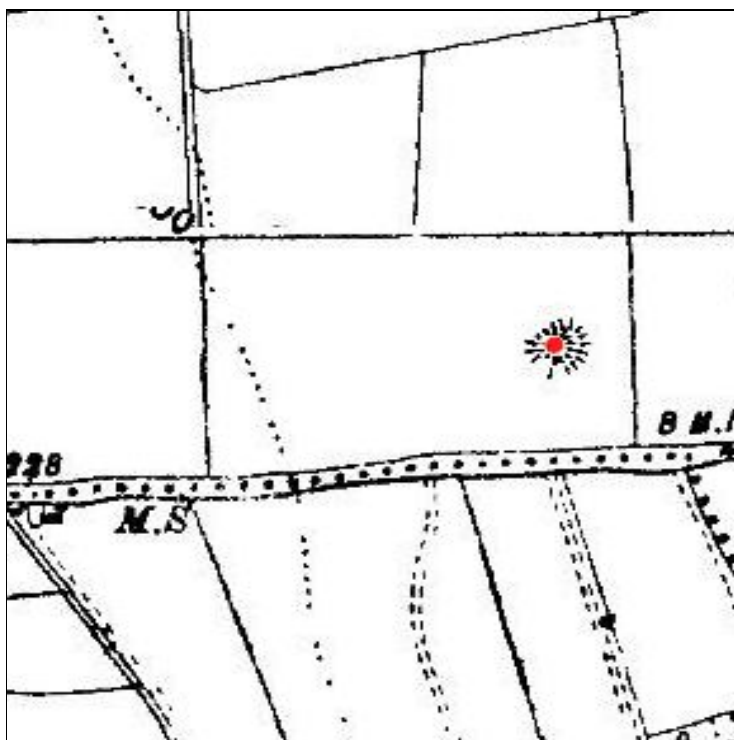
The site was reported in 1959 by the Department of Agriculture to the Commissioner of Public Works, Parks and Monuments Office as land project works were proposed for the area. It was agreed that the site appeared to be of archaeological interest and should be excluded from the proposed works. In correspondence, it was also stated that the site was outside the area on which reclamation work is proposed and there was no intention of interfering with the mound.

Historic mapping

The monument is shown as a circular fort on the first edition Ordnance Survey 6-inch mapping and the revised edition map. (Illus. C 80 and C 81)



Illus. C 80 First edition Ordnance Survey 6-inch map



Illus. C 81 Revised edition OS Map

Observations from site visit (level of impact, significance of impact)

Located in agricultural land, two steel lattice towers are located in the adjacent field to the southwest (158m) and northwest (194m). There is no direct impact to the monument. As the land slopes to the east, the towers are located on higher ground. A house is located in between the monument and tower. While the tops of the towers are visible from the monument, the monument is not visible from the towers due to the presence of high hedgerow boundaries.

There is a slight/negligible visual intrusion on the site from the presence of the towers (Illus. C 82). There have been a number of incremental changes in this landscape including the use of deep ploughing in the same field as the monument, which has altered the shape and form of the mound from circular to oval. On aerial photographs reviewed for purpose of the study, the mounded area appears to be located slightly further south of the fort than is shown on the first and revised editions of the Ordnance Survey. Agricultural practices pose more of an immediate threat to this feature than the location of towers to the west.



Illus. C 82 Ringfort (ME026-004) with the steel towers in the background (158m). There is no buffer zone around the monument and the area is ploughed and planted right up the monuments edge.

A thatched cottage is located along the road about 92m to the west and uphill of the tower. The towers do not detract from this roadside structure (Illus. C 83).



Illus. C 83 A thatched roadside vernacular cottage is located approx. 92m west and uphill of the steel tower.

ID No	22	
County	Meath	
Townlands	Crewbane	
Transmission line/substation/ UGC		
220 kV Louth-Woodland		
Transmission Infrastructure		
Steel lattice tower		
Protected Status/Unique ID	Site Type	NGR
ME019-081	Souterrain	298492, 273577
ME019-090	Ringfort unclassified	298569, 273666
ME019-091	Field System	298557, 273700
ME019-101	Enclosure	298595, 273456
Other Site Types		
Crosses / on the western alignment of the Brú na Bóinne UNESCO World Heritage Site		
Impact		
There is no impact on Crewbane House and the newly revealed individual monuments reviewed for this study. While the individual heritage assets are unaffected by the OHL and structures there is a significant impact to the buffer zone of the UNESCO World Heritage Site		
Condition		
The condition assessment is typical for Crewbane House and individual monuments and in the instance of the UNESCO World Heritage Site a worst case is considered as the towers detract from the landscape setting of the Brú na Bóinne archaeological complex.		

Site Description

The following description is taken from The Brugh na Bóinne Research Project, (www.nuigalway.ie/archaeology/research/landscape). The project is part of an ongoing research initiative designed specifically to address the nature and function of selected monuments within the broader landscape of the Brugh na Bóinne UNESCO World Heritage Site.

The chance discovery of a souterrain in the townland of Crewbane, Brugh na Bóinne, Co Meath in November 2007 prompted a detailed archaeological and geophysical survey of the immediate area which a number of additional and potential significant archaeological features were identified. These previously unrecorded features included a second potential souterrain, a substantial earthen embankment, a low relief linear earthwork and a well, in addition to geophysical evidence of a large circular or sub-circular enclosure (possibly a ringfort, 40m in diameter) and an adjacent field system.

All are situated in close proximity to one another on elevated ground overlooking the River Boyne, some 200m to the south. The souterrain, is just one feature within a complex of archaeological monuments located within sight of the passage tomb cemetery of Knowth, situated just 1km to the east. During the early medieval period, Knowth (ancient Cnogba) served as the royal seat of the kings of north Brega and it is likely that the archaeological complex at Crewbane forms an integral part of its royal demesne (Fenwick, Dowling, Schot and Rogers, 2012).

Crewbane House is shown on the 1st edition OS. It is oriented east-west with the front of the structure facing east, looking towards the Knowth complex and the bend in the Boyne. It is an historic three bay, two storey with hipped roof and two central chimney stacks structure with interesting outbuildings and stables and an orchard to the north. There are spectacular views to the south over the Boyne River Valley. It does not appear to be recorded in the NIAH or the RPS.

Planning history (if applicable)

In 2012, An Bord Pleanála refused planning permission for the N2 Slane Bypass Road Scheme. This scheme was approximately 3.5km long and crossed the River Boyne on a new bridge between the townland of Fennor and Crewbane at a location approximately 1.1km to the east of the existing N2 Slane Bridge, County Meath. It is the only other large scale linear development to take place in the area (located to the west of the transmission towers) and the conditions for refusal are interesting from an archaeological viewpoint. It was refused on the following archaeological grounds:

‘The proposed Slane Bypass is located in the Boyne Valley, which has a very rich archaeological heritage. In particular, it is located within the viewshed of the Brú na Bóinne UNESCO World Heritage Site, which is one of the most important prehistoric megalithic sites in Europe and is of international importance.

Having regard to the importance and sensitivity of the location of the proposed bypass, and the high level of protection afforded to Brú na Bóinne and its landscape setting in the Meath County Development Plan 2007-2013 (as varied), the Board considers that this proposal for the development of a major road, which would be a permanent feature in the landscape, would be acceptable only where it has been demonstrated that no appropriate alternative is available.

Notwithstanding the urgent need to alleviate the traffic safety concerns at Slane Village, and having regard to the submissions made on file and at the oral hearing, the Board is not satisfied that alternatives to a bypass have been adequately explored. In this context, the Board considers that the

proposed development would have a detrimental impact on the rural character, landscape setting, cultural amenity and archaeological heritage of the Brú na Bóinne archaeological complex, and would be contrary to the heritage protection provisions of the Development Plan. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area'.

Historic mapping

Crewbane House is indicated but not named on the first edition mapping; none of the recorded monuments are shown (Illus. C 84).



Illus. C 84 First edition Ordnance Survey 6-inch map

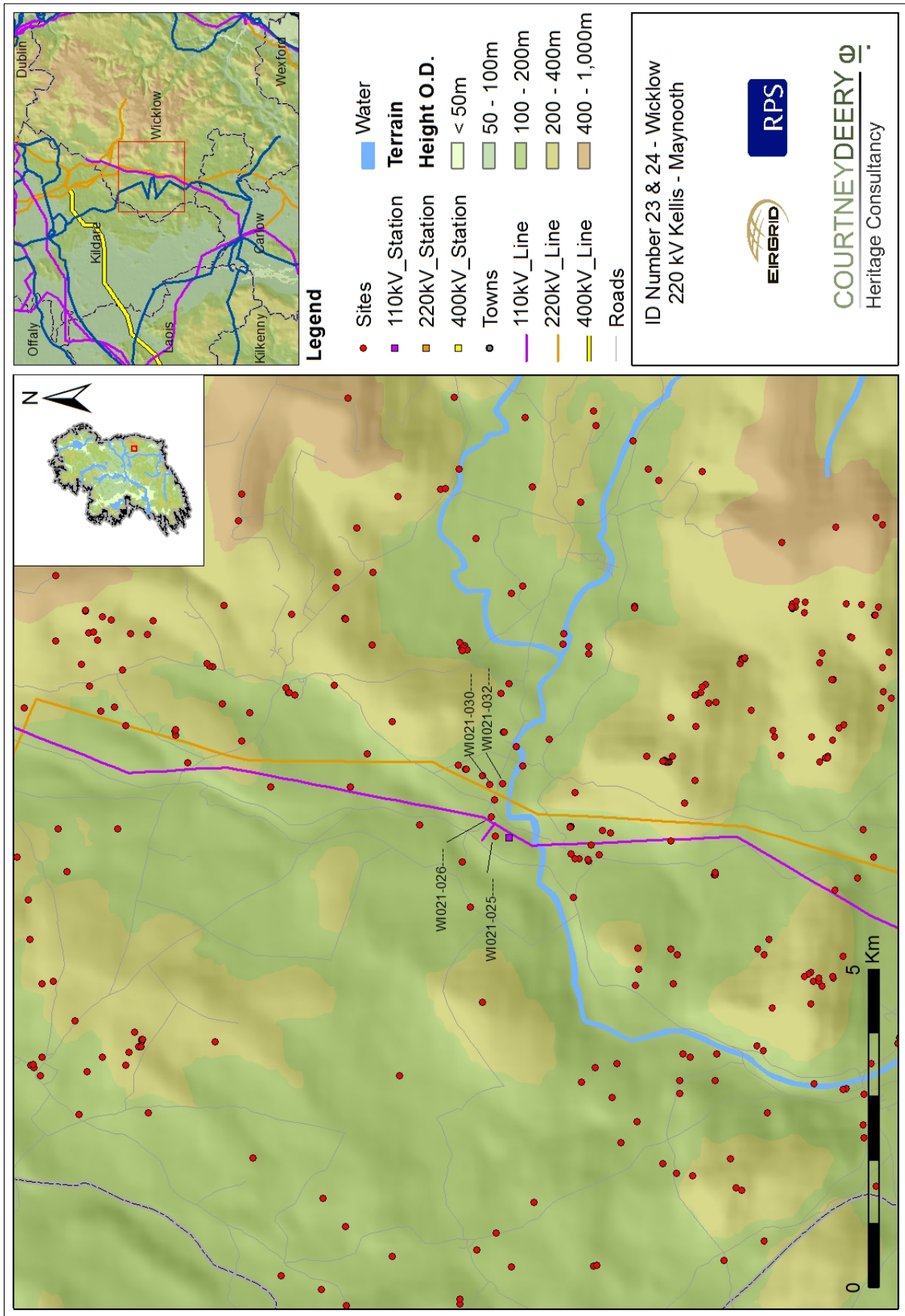
Observations from site visit (level of impact, significance of impact)

There is no direct impact on this newly revealed, interesting complex of monuments from the transmission towers which are located c. 460m to the west and approximately 1.5km from the Knowth passage tomb complex. The transmission towers are located along the western perimeter of the Brú na Bóinne UNESCO World Heritage Site 'buffer zone' and detract from the landscape setting of the Brú na Bóinne archaeological complex.

Crewbane House, although having no formal designation, is considered to be of architectural heritage merit. The building lies to the west of these monuments with the monuments forming part of its attendant grounds (Illus. C 85). The house is orientated towards the east, a designed aspect to overlook the bend in the river towards the site of Brú na Bóinne. The transmission line runs to the rear of the house, field boundaries screen it from the views from the house. The property is not impacted by the transmission line.



Illus. C 85 Looking west at Crewbane House and transmission towers in the background



ID No	23	
County	Wicklow	
Townlands	Castleruddery Lower & Upper	
Transmission line/substation/ UGC		
220 kV Kellis - Maynooth		
Transmission Infrastructure		
Steel lattice tower		
Protected Status/Unique ID	Site Type	NGR
WI021-032 (National Monument 441)	Stone Circle	291590, 194220
WI021-030001/002	Designed Landscape features	291579, 194431
Other Site Types		
The stone circle is subject to a preservation order (PO No 109/1940 (15 Oct '40)). (Preservation Orders 1 st February 2010 list www.archaeology.ie).		
Impact		
There is a slight impact from the location of the transmission line in relation to the stone circle while the landscape feature is unaffected by the transmission line and structures.		
Condition		
Non standard and typical respectively		

Site Description

The embanked stone circle is located on a natural rise with gentle slopes to the south, west and east and overlooking the River Slaney (250m to the south). The stone circle is approximately 30m in diameter and consists of large boulders, originally contiguous, some standing upright and others erected on their long axis. The circle is largely intact at the north but is less well-preserved to the south. It consists of twenty-nine substantial stones and a number of smaller fragments with some loose boulders occurring in the interior which is otherwise featureless. Wedge marks and boreholes in several stones indicated deliberate destruction. The entrance is 1.3m wide and appears to be between two exceptionally large quartz boulders at the east. Abutting onto the outer face of the circle is an earthen bank (40m in diameter; 4.5m wide and 1m high) the terminals of which encompass the quartz boulders of the entrance. Some boulders along the outer edge of the bank may indicate an

outer revetment. To the east of the entrance is a single upright stone. A field bank cuts across the outer edge of the bank at the south. The site occurs centrally within a well-defined crop mark (approx. 80m in diameter) enclosure defined by a fosse (4-5m in diameter). Between this and the earthen bank is a narrower cropmark defined by a trench or narrow fosse (50m in diameter). (Walshe 1931, 131-4; Leask 1945, 266-7; Burl 1993, 106, 240; 1995, 249-50).

The designed landscape feature (WI 021-030001) is shown as a large blue square area on the 1st edition OS mapping and may represent a pond. Today it is a reedy, wetland area in the landscape, it appears to be stone lined. An elongated rectangular feature annotated as a 'lead pond' is located to the north.

It was visited by the Archaeological Survey of Ireland in 1989 and is described in the RMP as follows- 'Located on a west-northwest facing slope at a natural break in slope, it is a well-defined feature in the landscape. It presents as a square sunken area (c. 80m x 80m) which is now marshy ground. Rising from the edge of this area a series of 3 terraces cut as steps into the slope of the hill. These terraces extend around the sunken area to the north and south. Part of a low bank, probably an original feature, extends across the east side of a sunken area. A slightly raised area in the southwest area of the sunken square may be a small island'. It is described as a non-antiquity landscape feature, possibly a decoy pond and is likely to be associated with the landscape feature to the northwest that is shown on the first edition 6- inch Ordnance Survey as a 'Lead Pond'.

Located to the northwest is another rectangular feature (WI 021-030002) defined externally by a wide (10m) bank with a ditch (with expanded terminals) on the northwest end of the feature. Internally there are six rectangular pits set symmetrically 2 x 3; these are joined along the length by ditches while the terminal pair of pits at the northwest and southeast ends is similarly joined. This site is also described as well-defined and classified as a non-antiquity. It is located on level ground at the foot of a steep west facing slope with higher ground on all sides in a marshy area.

Planning history (if applicable)

Constructed in 1973/74, upgrades in planning at present.

Historic mapping

Both landscape features (non-antiquity) are shown on the first edition 6- inch OS (1838/39) and on the revised 1908 -1910 edition. On the first edition the linear feature is annotated as a 'Lead Pond'. The stone circle is marked on the two editions as 'Druidical Circle'.

Observations from site visit (level of impact, significance of impact)

A public right of way is located to the northeast of the National Monument. The transmission line and tower is located to the west on lower ground (168m) behind a large agricultural shed and yard and does not impact on the monument. The tower can be viewed from the entrance of the stone circle when looking straight ahead to the west (Illus. C 86). However a local ESB pole is located immediately west of the stone circle within the embankment and to the south, the overhead lines cross over the monument (Illus. C 87 and C 88). Due to the small scale nature of the line and the increased proximity to the National Monument it is a great intrusion on the site.



Illus. C 86 View to the west towards the steel lattice tower belonging to the 220 kV Kellis-Maynooth line



Illus. C 87 National Monument from the north showing the local ESB connection line



Illus. C 88 View to the west from the entrance feature of the monument

The transmission tower is located 62m northwest of the northwest corner of the designed landscape feature. The tower is located in the boundary of the field and does not impact upon the monument.



Illus. C 89 View from the south, looking north towards WI021-030 a designed landscape feature

ID No	24	
County	Wicklow	
Townlands	Castleruddery Lower	
Transmission line/substation/ UGC		
110 kV Pollaphuca - Stratford		
Transmission Infrastructure		
Steel lattice towers		
Protected Status/Unique ID	Site Type	NGR
WI021-026	Enclosure	291074, 194399
WI021-025	Castle unclassified	290761, 194338
16402115 (NIAH)	Gates/railings/walls	290749, 194307
Other site types		
Demesne – Garden Survey (NIAH)		
WI-55-S-907943	Castleruddery House	
Impact		
No impact from the OHL or steel lattice towers to the enclosure		
Condition		
Typical		

Site Description

The enclosure is located at the base of an elongated natural hollow. It presents as a circular platform approximately 44m in diameter and 2-2.5m high with a slightly dished summit (36m in diameter) defined by a partly natural, wide flat-bottomed ditch. There are no indications of a bank, entrance or internal features.

The name Castleruddery is derived from the Irish Caislean a Ridire, the castle of the Knight. In the townland name book (Price 1949, 168) it states that there is a pretty house built on the site of the old castle. In the place-names of Co Wicklow it states 'the Ordnance Survey map marks 'Castleruddery (site of)' at Castleruddery House in Castleruddery Lower, but O'Connor in the Ordnance Survey letters makes no reference to it. If there was a castle here, it may have been a sixteenth or seventeenth

century building, erected perhaps by Shane McFeagh O'Toole, who died in 1581 or by Sir William Talbot to whom the lands were granted in 1627'.

In 1990 the archaeological survey visited the site, it states other than O'Donovan's (1838-40, 91) assertion that "there was formerly a castle in Lower Castleruddery where Castleruddery House stands" there is no evidence for a castle at this site. There is no visible surface indication. The site is on level ground on the summit of flat topped ridge, it is now the location of a late 18th century house now abandoned.

Castleruddery House is a detached four-bay, two storey house, built c. 1810, with a four-bay single storey lateral wing. There is possibly a basement. It was renovated in 1985. The main block has a hipped slate roof and pitched slate roof to the wing with clay ridge tiles, rendered chimney stacks and cast-iron rainwater goods on timber eaves. The walls are unpainted and roughcast. There are square-headed window openings with stone sills and timber sash windows (two over two on the ground floor and three over six on the first floor). There are replacement timber casement windows, c. 1985; to the wing. There is a segmental-headed door opening with a glazed timber panelled door and fanlight. The house is set back from the road in its own grounds with a gravel forecourt and landscaped grounds. A detached rubble stone outbuilding is located within the grounds. The gateway comprises a pair of cut-granite piers with wrought iron double gates. The Garden Survey of the NIAH desk based study; record the demesne as being substantially present but that peripheral features are now unrecognisable.

Planning history (if applicable)

None

Historic mapping

On the 1st edition Ordnance Survey 6-inch edition mapping the 'site of Castleruddery Castle' is annotated and 'Castleruddery House' is also named. The original primary entrance is shown as a tree-lined avenue extending to the north (Illus. C 90). The enclosure is also shown as a double circular feature located adjacent to a field boundary.



Illus. C 90 First edition Ordnance Survey 6-inch map showing 'Castleruddery Ho' and the enclosure to the north east of the house

Observations from site visit (level of impact, significance of impact)

The NIAH Building Survey give Castleruddery House a Regional rating and states that it is a middle size house of modest form and appearance retaining much of its original character and contributing to the historic appeal of the locality. There was no access to the house and from the entrance feature of the house there is no visible sign of the substation. The house itself is set within mature woodland and the substation is located to the north of a mature tree line boundary marking the northern boundary of the grounds and separating the house from the substation

There has been much change to this area with the large scale development of a quarry to the north of the road, while considerable disturbance has taken place in the fields immediately north and to the east of Castleruddery House and to the west and south of the enclosure (Illus, C 91 showing an aerial view). Large scale earthmoving has taken place in the field surrounding the substation (north of the house and west of the enclosure). The reason and purpose of this earth-moving activity is unknown.



Illus. C 91 Aerial photograph showing the mature woodland estate of Castleruddery House, the enclosure site (WI021-026).

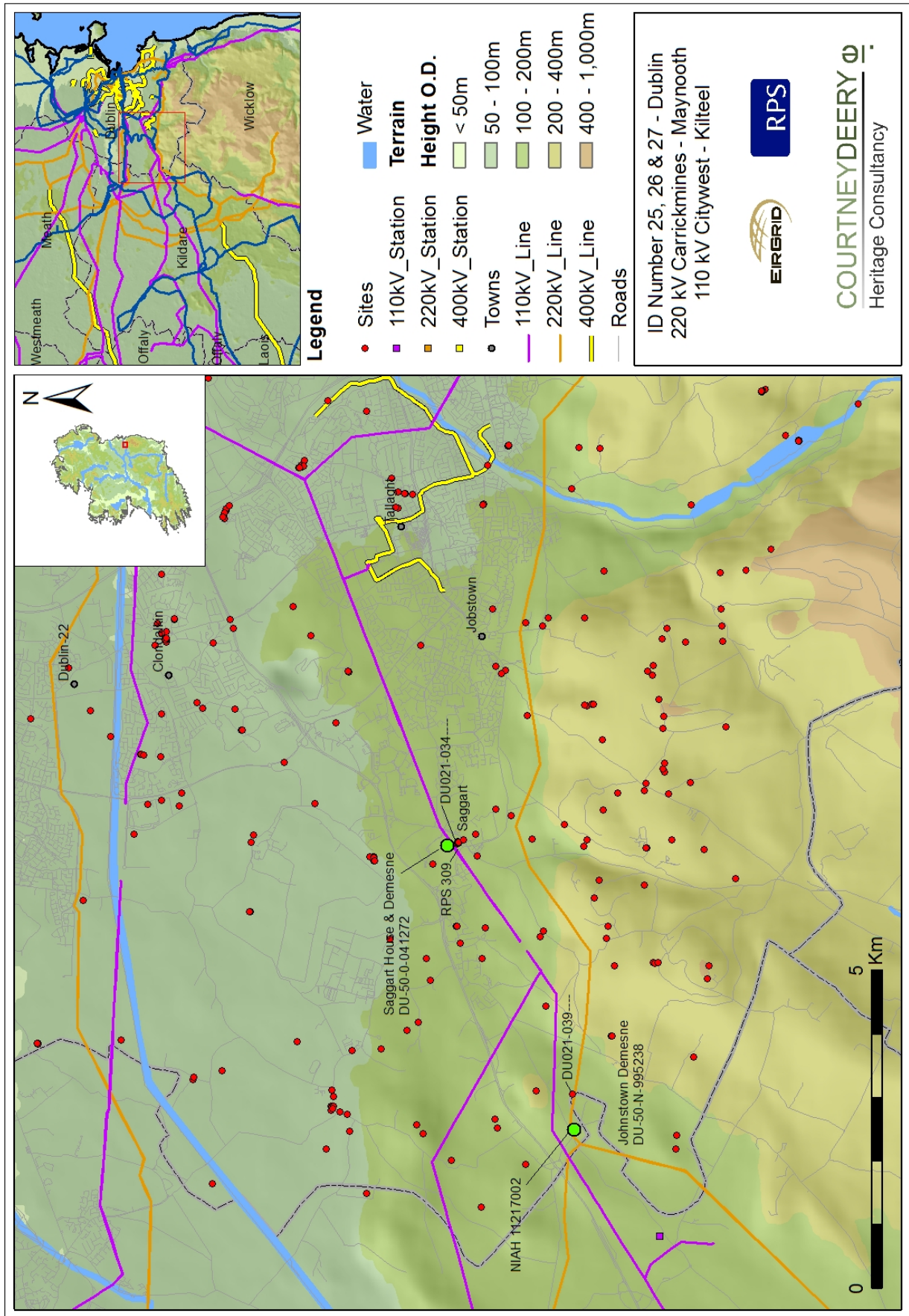
Two lattice steel towers are placed in the same field as the enclosure both along boundaries; one is located approximately 80m to the northwest of the enclosure (Illus. C 92) and the other, 85m southwest of the monument (Illus. C 93). Both towers are located on higher ground and the monument is somewhat hidden in a hollow. As the OHL passes across the field to the west on higher ground, there is no direct impact to the monument or to the immediate setting.



Illus. C 92 View from the east looking towards the enclosure (WI021-026) and the transmission towers.



Illus. C 93 View from the north-western corner of the field and transmission tower looking south towards the monument (W1021-026).



ID No	25	
County	Dublin	
Townlands	Steelstown	
Transmission line/substation/ UGC		
220 kV Carrickmines – Maynooth		
Transmission Infrastructure		
Steel lattice tower		
Protected Status/Unique ID	Site Type	NGR
11217002 (NIAH)	Gate lodge	299263, 224966
Other site types		
Demesne – Garden Survey (NIAH)		
DU-50-N-995238	Johnstown House	
Impact		
There is a moderate/significant setting to the lodge from the OHL and no/slight impact on the demesne lands of Johnstown House		
Condition		
Non standard		

Site Description

This is a detached seven-bay single storey former gate lodge to the Johnstown-Kennedy Estate. It was built in 1979 and is now used as a private residence. Originally L-shaped in plan, the house has now developed into a T-shape having been extended in modern times to the north-east in the style of the original house. The walls are rendered, ruled and lined with large granite footings. Open-bed pediments are positioned to the centre bay of the original house and are copied to the northeastern-most bay to the rere. There are round-headed timber sash windows with granite sills throughout the structure; these sills rest on granite consoles and each have elaborately carved stone hoods and keystones. Pilasters are located at the corners. The portico to the front entrance with a large granite column supports an architrave with dentil moulding and sunken panels. The slate roof is single pitched and hipped with the chimney stacks rendered and decorated with yellow terracotta chimney pots.

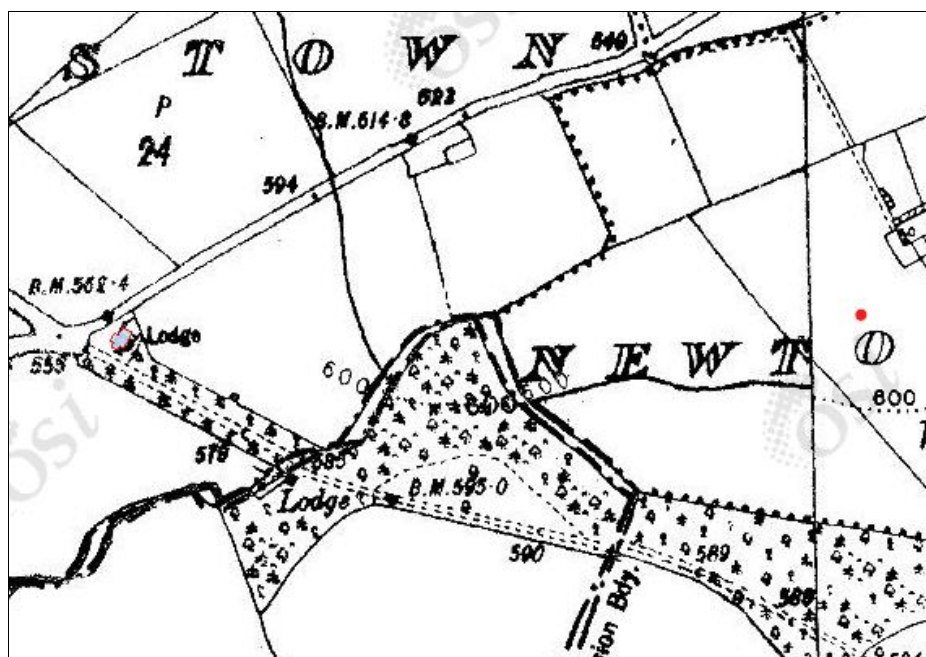
The former Johnstown Kennedy Estate near Rathcoole, includes a most impressive and extensive range of farm buildings. The buildings have courtyards with high walls and dramatic gateways some with pinnacles, curved equestrian buildings, Gothicised doorways, a small dairy, and several well-constructed utilitarian buildings serving various agricultural purposes. There is also a water mill with mill race and a cast-iron mill wheel in-situ. A roadside forge with horseshoe shaped entrance displays the initials E.K. and the date over the door. The remains of a later walled garden with ruined greenhouses, a gardener's house and other structures, add a further dimension to this outstanding collection of estate buildings.

Planning history (if applicable)

This OHL was commissioned in 1971/72.

Historic mapping

On the first edition OS 6 inch mapping (1837-41); there are gravel pits located at the site of Steelstown Lodge. It is not until the revised OS edition that a 'lodge' is annotated and shown in the area (Illus. C 94 and C 95).



Illus. C 94 Revised Ordnance Survey 6-inch edition showing Steelstown Lodge



Illus. C 95 First edition OS 6-inch mapping of Johnstown Demesne

Observations from site visit (level of impact, significance of impact)

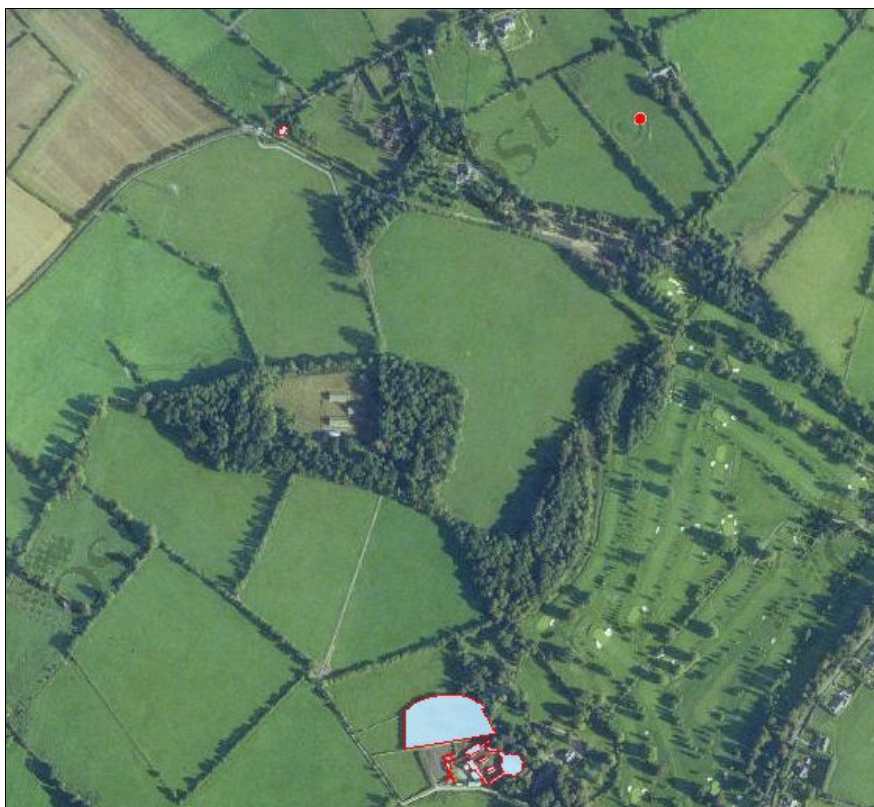
The NIAH records this former gate lodge as retaining all of its original style, character and grace. It states that the modern extension has been thoughtfully executed in the same style as the rest of the house. The unusual and interesting round-headed timber sash windows and the high attention to detail make this house an important asset to the local area both architecturally and historically.

The lodge now lies isolated from the former Johnstown-Kennedy Estate. However, the treatment of the new entrances to Huttonread House and stud and Steelstown Lodge, three entrances converging together, provides a sense of cohesion and a sense that the lodge was once part of a large demesne. The immediate setting of the house (i.e. the garden) is well shielded due to the trees along the laneway and a lattice steel tower is located adjacent to the lane in a corner of a field to the north of the lodge house (Illus. C 96). As this steel lattice tower has two lines coming into it at different angles it appears to frame the lodge house and is a dominant feature in the landscape. The angle and positioning of the line in close proximity to a structure would appear to have a greater effect on the said structure than a straight transmission line.

The transmission line through the former demesne lands does not impact on the remaining structures due to their enclosed nature and distance from the line. It travels to the west of a tree lined area and shelterbelts of woodland (Illus. C 97 and C 98). These are important structures and a valuable asset as they preserve the historic character of the former demesne property.



Illus. C 96 Steelstown Lodge and the adjacent transmission tower taken from the west



Illus. C 97 An aerial photograph showing Steelstown Lodge (to the north) and the Johnstown-Kennedy Estate, a golf course is located in parkland to the east of an important array of outbuildings, stables and a walled garden. The transmission line can be seen to the west of the photograph travelling through three fields of the outer lands associated with the former demesne.



Illus. C 98 The transmission line travelling through the former demesne lands of the Johnstown-Kennedy Estate

ID No	26	
County	Dublin	
Townlands	Newtown Lower	
Transmission line/substation/ UGC		
220 kV Carrickmines - Maynooth		
Transmission Infrastructure		
Steel lattice tower		
Protected Status/Unique ID	Site Type	NGR
DU021-039--	Barrow – ring barrow	299866, 22498
Other Site Types		
N/A		
Impact		
Significant impact		
Condition		
Worst case		

Site Description

This monument is located in a low-lying field of pasture at the bottom of Saggart Hill. The site was identified from aerial photographs taken by the Fairey Survey of Ireland in 1971 (2.359/360) and by BKS in July 1978 (2776047/8). The site comprises a double-banked barrow with an overall diameter of approximately 79m. A slightly sunken roughly circular area (27m in diameter) is enclosed by a wide flat bottomed fosse, approximately 5m wide and 0.55m deep, an external earthen bank approximately 10m wide and 0.8m high with an external shallow fosse (6m wide and 0.45m high). The external bank is partially levelled along the northern side but is 8.80m wide and 0.6m high. A OHL structure has been built into the external bank along the southeast. A field boundary cuts across the west section of the external bank (Stout 1998, 150, 152). The form of this site is similar to what is described in the OS letters as the 'Rath of Cumhal' (Herity 2001, 42). The extent and plan layout of the site can be viewed on aerial photography (Illus. C 97).

Planning history (if applicable)

The OHL was commissioned in 1971/72.

Historic mapping

The site is not marked or indicated on the first edition 6- inch Ordnance Survey mapping (Illus. C 94).

Observations from site visit (landuse, level of impact, significance of impact)

The steel lattice tower is located on the south-eastern outer bank of the monument and has a direct significant physical impact on the ring barrow (Illus. C 99 and C 100).



Illus. C 99 Barrow (DU021-039), taken from the north looking south



Illus. C 100 Transmission tower located on the outer southern bank of the barrow site, taken from the south west

ID No	27	
County	Dublin	
Townlands	Saggart	
Transmission line/substation/UGC		
Citywest-Kilteel 110 kV		
Transmission Infrastructure		
Two lattice steel towers		
Protected Status/Unique ID	Site Type	NGR
DU021-034	Royal Manor of Saggart	303827, 226784
DU021-034001-009	Ecclesiastical Enclosure	303803, 226809
RPS 309	Cemetery	303795, 226811
NIAH 11213034	Graveyard	303795, 226811
Other site types		
NIAH Garden Survey		
DU-50-O-041272	Saggart House demesne	
Impact		
Slight/ no impact		
Condition		
Typical		

Site Description

Saggart takes its name from St. Mosacra, who reputedly founded a monastery in the area in the seventh century. The walled graveyard has a raised interior and is oval in plan (c. 70m north-south and 52m east-west). There are traces of an inner fosse at the base of the slope running from the north to the southeast. The plan of the graveyard indicates the probable existence of an ecclesiastical enclosure associated with St Mosacra who founded a church here in the 7th century. Two stone crosses (one of which is decorated), a cross-slab, which is possibly tenth century in date, and a cross-base, have been recorded, while the oval enclosure to the south of the existing cemetery appears to

contain the foundations of a medieval church that were incorporated into an eighteenth-century memorial. The village is well documented from the medieval period, as it became a royal manor, along with Crumlin, Esker and Newcastle Lyons.

Planning history (if applicable)

Test-trenching was carried out in the field adjoining the old burial ground at Saggart in advance of the extension of the graveyard. No features of archaeological interest were noted (Licence Ref. 99E0229).

ESB Networks redirected the Citywest–Saggart double circuit 110 kV overhead line (SD08A/0440). This involved the construction of two new 110 kV single circuit lattice steel towers in the townland of Saggart. This work was monitored by an archaeologist (Licence Ref: 05E1244) and no finds or features of archaeological interest were found during the construction of the towers.

A licence (Licence Ref. 09E0222) was taken out in Citywest Golf Course, Saggart in relation to work for ESB networks. There is no further information on this investigation.

Historic mapping

The first edition OS 6- inch mapping shows the grave yard and ecclesiastical enclosure in Saggart. The towers are now located in what was shown as a large tree lined field north west off the 'grave yd.' (Illus. C 101).



Illus. C 101 First edition Ordnance Survey 6-inch map

Observations from site visit (level of impact, significance of impact)

The tower structures are located in City West Golf Course which was formally part of the lands attached to Saggart House (DU-50-O-041272). The towers are located within the Royal Manor of Saggart (DU021-034) and lie 15m north to a cemetery/graveyard/ecclesiastical enclosure site (RPS 309, NIAH 11213034, RMP DU021-034001-009). The cemetery is screened from the towers by a boundary of evergreen fir trees. Gravestones date from the 1890s to the present day and the cemetery is an important social and religious focus for the people of Saggart. Overhead wires traverse the north-western section of the graveyard and connect to a larger steel tower which is located in the front garden of St Anthony's House. While the tops of the towers can be viewed from the graveyard, the enclosed nature of the graveyard is not disturbed by the presence or the overhead wires. Test excavation established that there were no subsurface archaeological remains in proximity to the towers.



Illus. C 101 View towards the towers on the golf range

APPENDIX D

FIELD SURVEY RECORDING SHEET

Assessment of Impact:

Unique ID #: _____

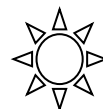
Actual impact on the Archaeological/ Heritage Feature. Direct. Indirect. No Impact .

Significance of Impact: Profound. Moderate. Slight. Negligible

Other Impacts: e.g. agricultural, quarrying, development etc.

Further Comments:

Sketch (Proximity to other features):



Indicate North

Compiled by:

Date of Site Visit: