

Lissenhall East

Local Area Plan

January 2023

Appendix 6: Archaeological, Architectural and Cultural Heritage Report

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Appendices

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ARCHAEOLOGY & CULTURAL HERITAGE

Archaeological, Architectural and Cultural Heritage Report

Lissenhall East Local Area Plan

Lissenhall Great townland, Swords, County Dublin

On behalf of RPS Group

Dr Clare Crowley

30th June 2022

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EXECUTIVE SUMMARY

This report provides an archaeological, architectural and cultural heritage appraisal of the Lissenhall East LAP lands, located c. 1.2km northeast of Swords, County Dublin.

This area is located where the northern fringes of the Greater Dublin urban area give way to the still relatively rural landscape of North County Dublin. The LAP lands are largely agricultural, with some industrial and business premises in the southwestern quadrant accessed off the R132 road. This dual-carriageway road forms the western boundary to the LAP lands, with the M1 motorway along the eastern side, and the Broadmeadow river to the south.

The LAP lands incorporate two recorded archaeological sites: RMP DU012-015, an enclosure originally identified from historic mapping; and SMR DU012-102, a rectilinear enclosure site identified by geophysical survey in 2018 and subsequently added to the Sites and Monuments Record for inclusion on the next revision of the Record of Monuments and Places. The survey also identified a number of isolated potential archaeological features scattered throughout the study area. No geophysical responses were identified at the location of enclosure site RMP DU012-015.

The LAP lands contain the remains of an 18th / 19th century house (Meudon) and its grounds, which are now given over to agriculture and existing development, as well as two agricultural fields that once formed part of the former demesne of Lissen Hall. The protected structure Lissen Hall and its grounds lie outside the LAP lands to the south. Meudon is not a protected structure and is not listed in the NIAH Building Survey.

In addition, field inspection identified three features of cultural heritage interest within the LAP lands: an 18th / 19th century property boundary and two sections of an 18th century road, surviving as a raised trackway and a laneway bounded by a stone wall demarcating the former grounds of Meudon.

Recommendations in relation to future development within the LAP lands include a programme of archaeological testing across the area, with trenches also targeting the results of the geophysical survey and the two recorded enclosure sites. This will seek to confirm the archaeological nature of the rectilinear enclosure (DU012-102) and to identify whether there are any archaeological features at the site of RMP DU012-015. It should be noted that preservation *in situ* of known archaeological sites is the preferred form of mitigation of the National Monuments Service of the Department of Housing, Local Government and Heritage and consultation with the department should be sought to discuss any further mitigation measures following the results of the archaeological testing.

Lissen Hall and its grounds lie outside the LAP lands, however, any future development in the environs of the Lissen Hall estate should be cognisant of its setting and visual amenity. The ruins of Meudon house are located within the woodland preserve at the centre of the LAP lands. As part of the preservation of this area, it is recommended that vegetation overgrowth be cleared to enable the recording of the remains (and of any above-ground foundations of the stables to the north), to establish their significance and to inform future protection strategies if required.

1. INTRODUCTION

1.1. General

This report provides an archaeological, architectural and cultural heritage appraisal of lands located at Lissenhall Great townland, Swords, County Dublin. The appraisal describes the archaeological and historical background of the landscape within which the study area lies. Undertaken for RPS Group, the appraisal will form part of a Local Area Plan for Lissenhall East (LAP).

The main purpose of this baseline study is to assess the significance of the receiving archaeological, architectural heritage and cultural heritage environment, and to identify areas of archaeological and cultural heritage potential which may provide constraints for any future development.

1.2. Study Area

The area of land which comprises the study area is located c. 1.2km northeast of Swords town, and northwest of the Malahide estuary. The lands are bound to the east by the M1 motorway, to the west by the R132 road, and to the south by the grounds of Lissen Hall and the Broadmeadow river. The LAP area incorporates land within the townland of Lissenhall Great, within the parish of Swords and the barony of Nethercross.

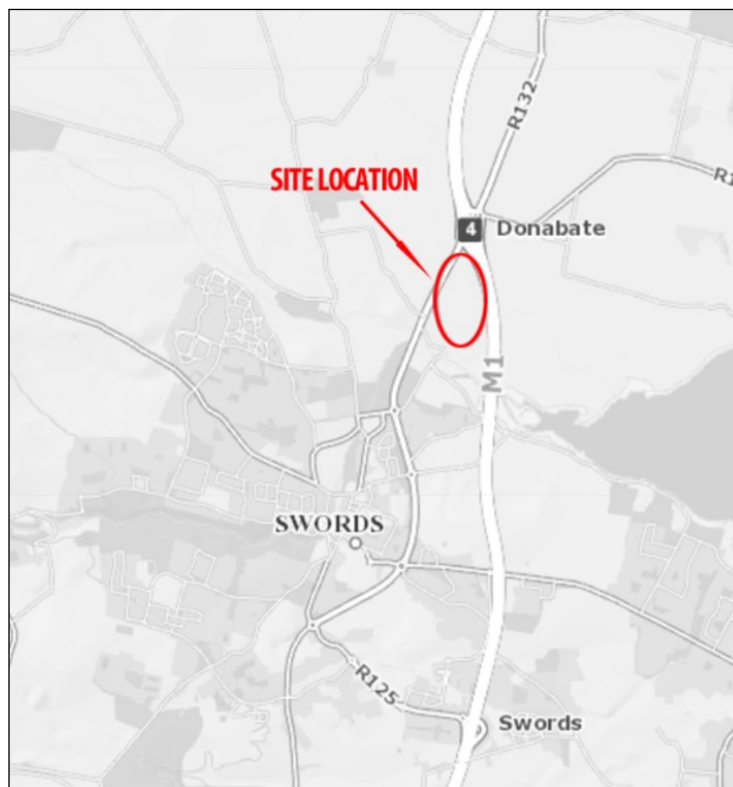


Figure 1 Site location map

The archaeological constraints circle of a recorded archaeological monument is situated partly within the LAP area. This indicates an area of archaeological potential surrounding an enclosure site (RMP DU012-015), located north of the eastern limit of the estuary, to the rear of Lissen Hall. The enclosure is named 'site of fort' on the 1837 Ordnance Survey six-inch map, though it is not

depicted, and it is not visible on either aerial imagery or at ground level today. The remains of a rectilinear enclosure identified during the geophysical survey within the LAP lands are located c. 185m northwest of the RMP site and may correspond to the recorded enclosure, given the uncertainty as to the exact location of the 'fort' indicated on the historic OS map (Cf. sections 3.2 & 3.6).

An enclosure site identified during the geophysical survey within the LAP lands has been added to the Sites and Monuments Record (SMR) for inclusion on the next revision of the Record of Monuments and Places (RMP). It is designated SMR No. DU012-102.

Lissen Hall is listed on the Record of Protected Structures (RPS) in the Fingal development plan (2017-2023; RPS 342; House, Out-offices & entrance gates); the house and its grounds are located outside (abutting) the southern boundary of the LAP

2. METHODOLOGY

2.1. General

The assessment is based on an examination of published and unpublished documentary and cartographic material and a field inspection of the study area. A geophysical survey of the study area was undertaken by J. M. Leigh Surveys Ltd to inform this assessment (see section 3.6).

2.2. Desk Study

A review of the following information took place in order to inform the report:

- National Monuments in State care, as listed by the National Monuments Service (NMS) of the Department of Housing, Local Government and Heritage (DHLGH);
- Sites with Preservation Orders;
- Sites listed in the Register of Historic Monuments;
- Record of Monuments and Places (RMP) and the Sites and Monuments Record (SMR) from the Archaeological Survey of Ireland; The statutory RMP records known upstanding archaeological monuments, their original location (in cases of destroyed monuments) and the position of possible sites identified as cropmarks on vertical aerial photographs. Archaeological sites identified since 1994 have been added to the non-statutory SMR database of the Archaeological Survey of Ireland (National Monuments Service, DHLGH), which is available online at www.archaeology.ie and includes both RMP and SMR sites. Archaeological sites identified since 1994 are placed on the SMR and are scheduled for inclusion on the next revision of the RMP;
- Record of Protected Structures (RPS) in the Fingal County Development Plan (2017-2023);
- County Councils Architectural Conservation Areas (ACAs) and their statements of character;
- National Inventory of Architectural Heritage (NIAH) Building Survey (NIAH ratings are international, national, regional, local and record, and those of regional and above are recommended for inclusion in the RPS);
- National Inventory of Architectural Heritage (NIAH) Garden Survey (paper survey only);
- A review of artefactual material held in the National Museum of Ireland;
- Cartographical Sources, OSi Historic Mapping Archive, including early editions of the Ordnance Survey including historical mapping (such as Down Survey 1656 Map);
- The Irish archaeological excavations catalogue i.e. Excavations bulletin and Excavations Database;

- Place names; Townland names and toponomy (loganim.ie);
- National Folklore Collection (Duchas.ie);
- A review and interpretation of aerial imagery (OSI Aerial Imagery 1995, 2000, 2005, Aerial Premium 2013-2018, Digital Globe 2011-2013, Google Earth 2001–2022, Bing 2022) to be used in combination with historic mapping to map potential cultural heritage assets. Cambridge University aerial photographs taken in 1970 which cover part of the site were also examined (CUCAP BDS048).

A bibliography of sources used is provided in the References section.

2.3. Field Inspection

A field inspection of the proposed LAP lands took place on 19th September 2017 to assess present topography and land use within the proposed development area. It also sought to identify potential low-visibility archaeological features and upstanding features of architectural or cultural heritage interest.

3. ARCHAEOLOGICAL ENVIRONMENT OF LISSENHALL AND VICINITY

3.1. Archaeological and Historical Background

3.1.1. Introduction

The LAP lands occupy parts of Lissenhall Great townland, in the parish of Swords and the barony of Nethercross. This part of north County Dublin has a wide range of recorded archaeological monuments, which provide evidence for a long chronology of settlement from the prehistoric period through to post-medieval times.

3.1.2. Settlement in Prehistory

The earliest evidence for prehistoric settlement near Swords dates to the Mesolithic (7000BC–4000 BC) period, evidence for which is located along the shore of the Malahide Estuary where Larnian flints and shell middens have been identified (Stout and Stout, 1992). Neolithic (c. 4000–2400 BC) settlement was recorded at Feltrim Hill, c. 3km to the southeast of Swords town during excavations conducted in the middle of the 20th century (Eogan & Hartnett, 1964). Several research projects have been carried out in northeast Co. Dublin with the aim of charting the settlement pattern of this area using artefactual evidence. These projects involve systematic field walking of ploughed fields and collection of worked flint mostly dating to the Neolithic period.

Following monitoring of works associated with the M1 motorway in the late 1990s (Northern Motorway / Airport-Balbriggan Bypass), an Early Neolithic habitation site was uncovered in Lissenhall Little townland (Patricia Lynch, licence ref. 00E0953ext; DU012-079001 & -079002). Three areas of activity, which included pits, a hearth and stake-holes, were revealed (Fiona Reilly; licence ref. 01E1074).

Later prehistoric activity dating to the Early Bronze Age is indicated by the presence of several ring-ditches in the vicinity of the study area. At Holybanks townland, a ring-ditch (RMP DU011-080) has been identified from an aerial photograph. Located c. 1km to west of the LAP lands, the ditch is 14m in diameter with a gap to the northwest. Aerial photography revealed another ring-ditch in Lissenhall Little townland c. 755m north of the study area, the diameter of which was c. 12m (RMP DU012-003). The term ring-ditch refers to a regularly-shaped circular or pennanular ditch cut. The term is most often used as a generic description in cases where there is no clear

evidence for the function of the site; for instance where it has been ploughed flat and is known only as a cropmark or a geophysical anomaly. The two commonest monument types represented by ring-ditches are roundhouses (where the 'ditch' is actually a foundation slot or eaves drip gully) and round barrows. A further two ring-ditches are recorded to the west in Lissenhall Little (DU011-130) and Balheary Demesne (DU011-123) townlands, c. 520m and c. 855m respectively. Both sites were visible as cropmarks on aerial photographs. The site in Lissenhall Little was subject to geophysical survey and archaeological testing, which confirmed the presence of a cremation pit (Licence Nos 08R117 & 09E0463).

Although there is no recorded evidence for prehistoric settlement at Swords, a handful of prehistoric objects recovered around the town do indicate the activity of Bronze Age (c. 2300 - 500 BC) settlers in the vicinity of the study area. These objects include two flat axes (NMI Ref. 1939:16; E92:335), the earliest type of bronze axe, and a palstave (NMI Ref. 1939: 17), a type of middle Bronze Age axe. Recent archaeological monitoring on the south side of Church Road has also yielded a shale stone axe rough-out, which, while not found in its original context, corroborates some activity in the environs of the town from the prehistoric period (O'Carroll, 2002).

Recent excavation in advance of development in the former grounds of Mount Gamble House in the town of Swords identified an assemblage of artefacts which include 31 flints, one chert and one quartz piece, the assemblage dates from the Neolithic or Early Bronze Age and relates its presence on the site to possible sporadic occupation over time (O'Donovan, 2005; Licence No. 02E0608). Excavations at this site also revealed a multi-phased cemetery with the earliest phase of burial dating to the Late Iron Age indicating the pre-Christian population of the area.

An Iron Age ring-barrow (DU012-068) was identified during monitoring associated with the M1 motorway (Airport–Balbriggan Bypass) c. 1.5km north of the study area. The site consisted of a circular ring-barrow, with an entrance at the northern and western part of the ring. A deer antler was found directly opposite the western causeway/entrance. A small deposit of cremated human bone was found within the ditch, also on the eastern side of the feature. The north-eastern side of the ring-ditch was cut through by five inhumations oriented east–west. Beside these inhumations were four others, oriented north-east/south-west (Patricia Lynch; licence ref. 01E0744).

3.1.3. Early Medieval Period 400–1000AD

At the beginning of the historical period (5th /6th centuries AD) the plains of north Co. Dublin formed part of the geographical region of Brega. Up to this time political supremacy in the area was still contested by the Laigin, or Leinstermen, a dynastic confederation, which ruled the southeast and midland regions of Ireland. The earliest recorded ruling lineages of the Laigin included Dál Messin Corb, Uí Fáilge and Uí Chennselaig along with the Uí Bairrche (Byrne, 1973; Smyth, 1982). The pre-Norman genealogies attest that minor branches of these dynasties survived north of the Liffey into the historical period. As late as c. 600 (*Annals of the Four Masters*) Brandub mac Echdach, Uí Chennselaig king of Leinster would land his “sword blows” on Brega. From the 7th until the 11th centuries, the over kingship of Brega was dominated by Síol nÁedo Sláine, a dynasty of the Southern Uí Néill (Byrne, 1973).

Swords town is at the heart of an area that was of particular importance in the early medieval period, it is said to have owed its origins to the establishment of the church site founded by St Colmcille. The local folk tradition records that when St Colmcille established his church at the site, he took possession of a pre-Christian well, blessed it, and devoted it, after his usual custom to the service of religion. Swords derives its name from the Irish word, *sord*, meaning ‘pure’. *Sord* was

also the name of a pagan spring or well (Joyce 1995, 566). Therefore it is likely that the town's name originally applied to St Colmcille's well or *Sord Colmcille*.

The association of the early foundation of Swords with St Colmcille, who appointed St Finan Lobhar (the Leper) abbot, could suggest a 6th century date for the sites foundation (Gwynn & Hadcock, 1988), however, there are no contemporary documentary sources to confirm this. St Colmcille also founded a church at Rechra (Lambay). Three churches have been recorded at Swords, dedicated to St Fintan, St Brigid and St Catherine. It has been supposed that these churches were all located within the present Church of Ireland site with its standing round tower (Dalton, 1839). Alild, Bishop of Swords and Lusk, died in AD 965 (*ibid*, 44), so clearly the monastery was located at this site by the 10th century at least. The round tower, rising to 75 feet high, is the only surviving portion of the original monastic establishment, the medieval church tower, 68 feet high, belongs to a structure which was erected not later than the 14th century. The round tower is surmounted by a cross, placed there about 100 years ago.

Recent archaeological testing and geophysical survey has been carried out in the townlands of Mooretown and Oldtown c. 2.6km to the southwest of the study area. The most significant result of these investigations has been the identification of a previously unknown early medieval ecclesiastical complex; a religious site with burials and settlement, dating to the first millennium AD. This complex is entirely subsurface, without any remains above ground, and presents only as natural ridges within green fields. It extends from the southern part of Oldtown, into the northern part of Mooretown. The complex survives as three concentric oval enclosure ditches, with additional settlement materials within these. The smaller and innermost of the enclosures appears to define a burial ground. The largest, outermost enclosure is 200m in diameter and defines the edge of the main settlement/activity area. A circular building in the outer enclosure suggests a date prior to c. 800AD, consistent with the artefactual dating evidence from the inner enclosure (Baker 2003). The lack of medieval pottery across the complex also suggests it was abandoned by the late 12th century (Frazer & Eriksson 2008). This site has been recommended for inclusion in the RMP and currently has protected status.

A holy well site (RMP DU012-011) known as *Sunday's well*, is recorded c. 55m west of the LAP lands, on the west side of the R132 road. Holy wells are a Christian adaptation of a pre-Christian tradition of sacred springs, which, like their pagan predecessors, were often visited at certain times of the year, such as saints' or other holy days, and often had the reputation for effecting cures. There is a growing acceptance among historians that holy wells are often indicators of early ecclesiastical settlement. However, no known ecclesiastical centre is situated in the vicinity of this well. Formerly a spring well, it was a station well held in great estimation. It was filled in during road works in the 1970's and is no longer visible above ground (Stout, RMP Files).

The most significant component of an early medieval secular settlement is the ringfort, the only domestic monument surviving in significant numbers from any period in Irish history. These sites consist of circular areas defined by banks and external ditches, and excavation often reveals associated field systems as well as the remains of dwelling houses and outbuildings for extended families. They are usually situated on gentle slopes in open grassland, with good views of the surrounding area. Most that have been robustly dated were occupied between c. 500–1200 AD. The Annals of the Four Masters record that a fortress known as the High Rath once existed at Swords, (D'Alton, 1838) although the possible location of such a monument within the present town has not been identified. There are several ringfort sites in proximity to the study area. These include DU011-078 (in Newtown townland), DU011-079 (in Broadmeadow townland), DU012-015 (in Lissenhall Great townland), DU012-00101, DU011-00702, DU008-056 (in Belinstown townland)

and DU012-002 (in Lissenhall Little townland). The majority of these sites have been identified on aerial photographs and are interpreted as levelled ringforts with associated field systems.

Additional possible evidence for early medieval settlement within the vicinity of the study area is represented by a number of enclosure sites. The archaeological constraints area of a recorded enclosure site is partially situated within the LAP lands, at the southeastern corner (DU012-015). The site lies within the former demesne of Lissen Hall House and is marked as '*Site of fort*' on the first edition OS six-inch map (1843). It is not visible at ground level. An aerial photograph revealed another such site in Lissenhall Great (DU012-012), c. 65m east of the LAP lands, on the east side of the M1 motorway. It showed cropmark evidence for a sub-circular enclosure (diameter c. 60m) with two possible fields (DU012-01202) attached to the east of it. This is believed to be early medieval in date (Stout, RMP files). A further enclosure site, c. 1.2km west of the study area in Newtown, was also identified through aerial photography (DU011-017). It showed cropmark evidence for a sub-circular enclosure (diameter c. 15-20m) (Stout, RMP files). Owing to morphological indistinctiveness, enclosure sites cannot be attributed to specific periods of antiquity. However, it is believed that the majority of these sites are examples of damaged barrows (prehistoric ritual sites) of the Late Bronze Age / Early Iron Age or indeed ringforts (settlement sites) of the early medieval period.

3.1.4. The Ostmen and the Vikings at Swords

The monastery at Swords was important enough to be burned by Maelsechlainn in 994 AD. In 1014, the bodies of Brian Boru and his son, Murchad, were taken through Swords on route for burial in Armagh. The monastery was also plundered on several further occasions from 1020 to 1166 during which the monastery and village of Swords had become part of the Scandinavian kingdom of Dublin. Swords had first become a target of the Vikings, or Ostmen, from the close of the 10th century, and according to the Annals of the Four Masters was attacked and burned by them in 1012 and again in 1016. By 1035 the village had been conquered by the Vikings, under Sitric, King of Dublin, and in retaliation for a raid conducted by the settlers Ardraccan was attacked and burned in that year by the then King of Meath, Conor O'Melaghlin (Bradley, 1998).

3.1.5. Medieval and Late Medieval Swords

Prior to the Anglo-Norman invasion of 1169, the monastery at Swords and its possessions had been transferred to the Archbishop of Dublin (Laurence O'Toole) and Swords subsequently became one of the main archiepiscopal manors (Killanin & Duignan 1995). The ruins of the archbishop's manorial castle (a National Monument) (Harbison 1970) are situated at the north end of the town. The castle was begun c. 1200 and is more manorial in character than defensive, though it is walled on all sides (Leask 1973, 72).

In a charter, Archbishop O'Toole's successor, John Comyn, confirmed the burgesses of Swords in their burgages, 1181-1212 AD (Bradley 1998). The borough was one of the largest and most enduring of those established by the archbishops of Dublin. There are many references which show that it functioned continuously into the 16th century. The settlement was granted a new charter by Elizabeth I in 1578, establishing the town as a parliamentary borough. Representatives continued to be sent to parliament until the Act of Union in 1801.

The manor at Swords appears to have flourished in the 13th century with many references to the court and other legal proceedings. However, by the early 14th century it was coming under increasing pressure from the Gaelic Irish of the Dublin/Wicklow Mountains who were in a state of rebellion, maintaining a guerrilla-type war in the area surrounding Dublin. In 1326 an account of the manor of Swords describes it as semi-derelict with the lands, including lands at Lusk, lying in

waste owing to the conflict with the Gaelic Irish. A town wall was recorded by D'Alton in 1838 when he refers to a manuscript, now lost, that describes the walls as enclosing 'an area of great extent, and several parts indicate that they were founded as much for strength and protection as for any other purpose. They were strongly fortified with towers, and their exterior presents an embattled front, of an imposing appearance' (D'Alton 1838, 269). No evidence for the town wall survives today.

3.1.6. Post- Medieval Period

In the mid-17th century the majority of the lands within the study area, were held by Deane Jones, on lease from the Archbishop of Dublin. In Lissenhall Great he held 150 acres and in the neighbouring townland of Lissenhall Little he leased 190 acres. The bulk of his holdings were arable and pasture land. Within Lissenhall Great was '*one faire stone house thatcht a Barne, a stable thatcht, a Pigeon house slated, & some other walls wth scaffolds made upon them...there belongeth to ye said house a garden plot with some few fruit trees therein*' (Simington 1945, 109).

At Lissenhall Little a bridge, crossing the Broadmeadow River, is depicted on the Down Survey map of Nethercross, c. 1655. A five-arched bridge which appears to be part of a much larger structure containing at least eight arches, exists in the same location as that shown on the Down Survey map. The existing bridge is a recorded archaeological monument (DU011-081) and it has been dated to the period 1450-1550 with later additions (O'Keeffe & Simington 1991).

3.2. Recorded Archaeological Sites and Monuments (RMP & SMR Sites)

The archaeological constraints area of a recorded enclosure site is partially situated within the LAP lands, at the southeastern corner (RMP DU012-015, Figures 2 & 3). The site lies within the former demesne of Lissen Hall and is marked as '*Site of fort*' on the first edition OS six-inch map (1843, Figure 6). It is not visible at ground level nor on aerial imagery.

The rectilinear enclosure identified by geophysical survey undertaken within the LAP lands in 2018 is located c. 185m northwest of the RMP location (centred on the point indicated by '*Site of fort*' on the historic OS map; Figure 2). The enclosure has been added to the SMR for inclusion in the next revision of the RMP and has been designated SMR No. DU012-102.

The possibility that the early 19th century annotation was an approximate rather than accurate location cannot be discounted (if, for example, it was based on local folklore or memory of a monument being in the vicinity of Lissen Hall). As such, it is possible that the newly identified enclosure (DU012-102) corresponds to the one indicated on the first edition map. No responses were identified within the RMP constraint circle where it lies within the LAP lands, with some isolated responses outside it to the west suggesting possible pits, if not modern disturbance (see section 3.6 for a more detailed description of the geophysical survey results). It is equally possible that there was more than one enclosure in the immediate area, with the RMP site representing one and another revealed by the geophysical survey (a third is located further northeast, on the far side of the M1 motorway – discussed below – with a further six levelled ringforts identified on aerial imagery and recorded in the surrounding townlands).

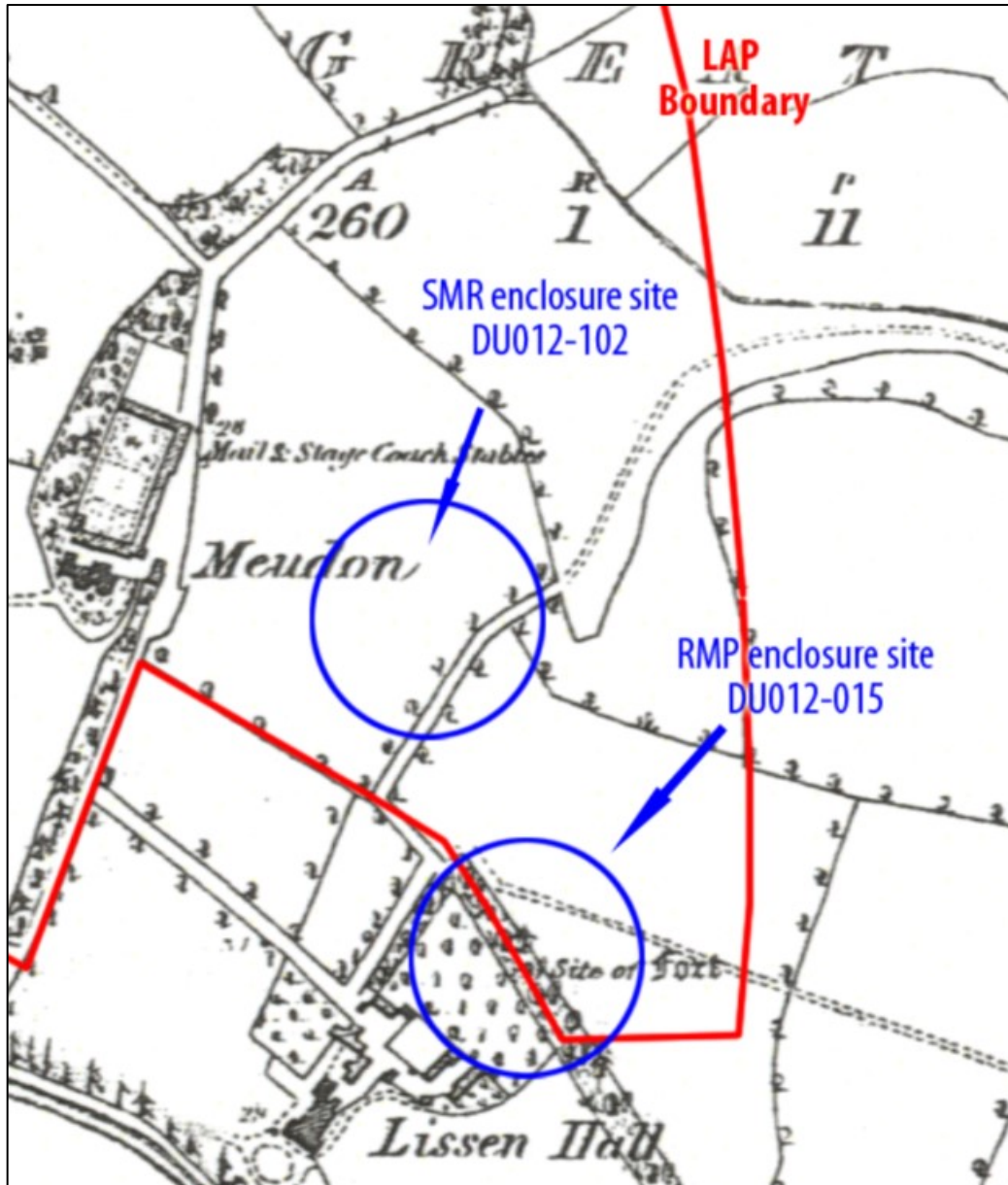


Figure 2 Location of recorded enclosures overlaid onto first edition OS map

Several RMP sites are located in close proximity to the LAP lands, including Lissen Hall Bridge (RMP DU011-081). The five-arched stone bridge spans the Broadmeadow river c. 65m west of the LAP lands, to the west of the present R132 road. The 18th century bridge incorporates medieval fabric (see section 4.2).

An enclosure and field system are recorded c. 65m east of the LAP lands, on the east side of the M1 motorway (RMP DU012-012001 & 012002). Although the LAP lands encroach upon the edge of the RMP constraint area, an examination of aerial imagery demonstrates that the sites are located on the opposite side of the motorway (Figures 3 & 4). It is nonetheless possible that associated features may be uncovered within the proposed LAP lands (e.g. pit-type responses were identified by the geophysical survey c. 125m southwest of the recorded enclosure; see section 3.6).



Figure 3 Aerial photographs showing enclosure and field system (DU012-012)

The site of a holy well is recorded c. 55m west of the LAP lands, on the west side of the R132 road (RMP DU012-011). The site is marked as 'Site of Sunday Well' on the historic OS mapping and was infilled during roadworks in 1974; there are no above-ground remains (Healy 1975, cited in RMP file).

A further 13 RMP / SMR sites are located within approximately 1km of the LAP lands. These and other relevant sites are discussed in the context of the archaeological and historical background (Cf. section 3.1) and are illustrated on Figure 4.

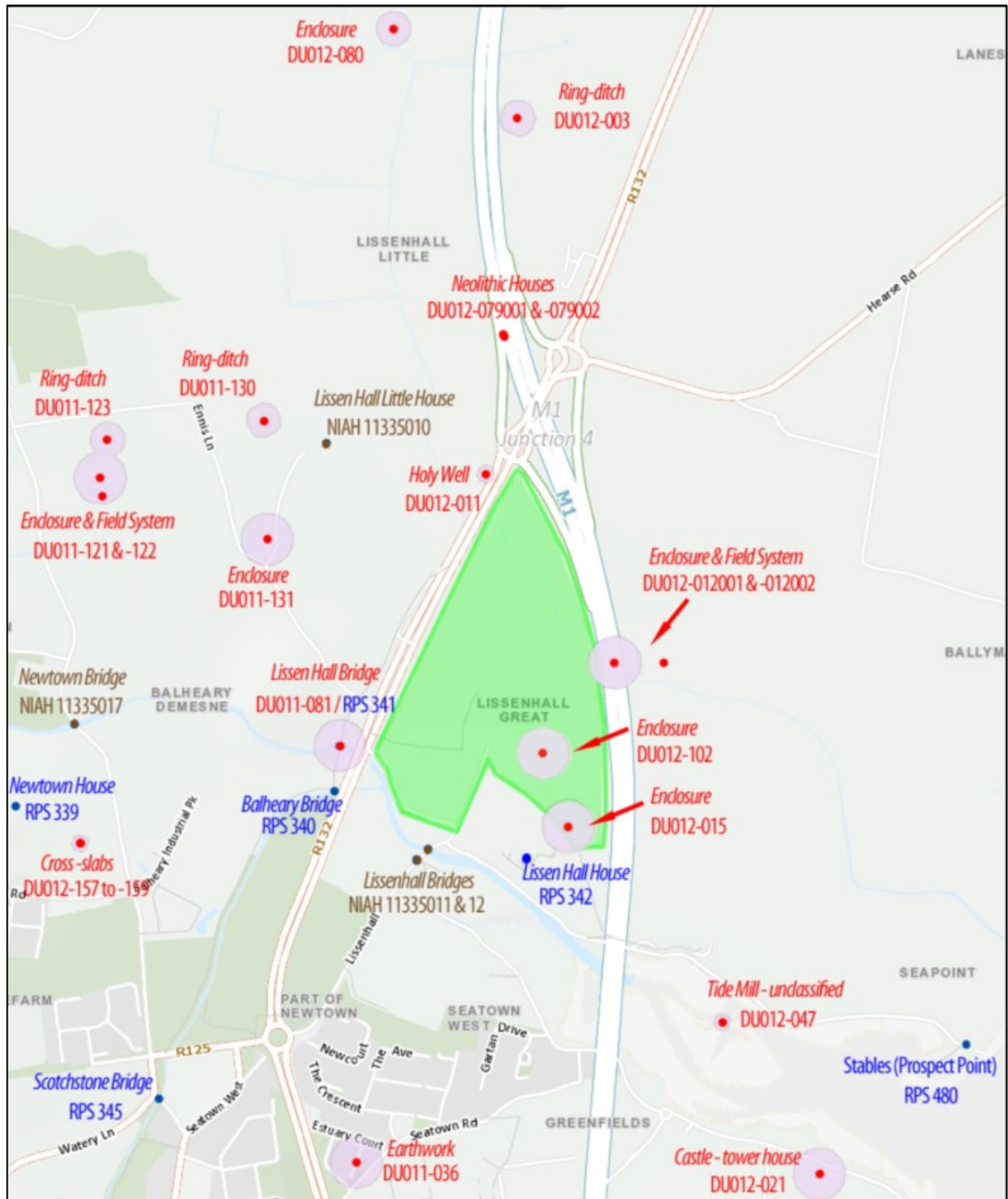


Figure 4 Map showing RMP/SMR, RPS & NIAH sites within c. 1km of LAP lands (Online Historic Environment Viewer, www.archaeology.ie)

3.3. Stray Finds in the vicinity of the Study Area

The topographical files in the National Museum of Ireland record two stray finds in the townlands situated within the study area. At Lissenhall Great two waste flints were recovered (NMI Ref. 1978:77-78) and a flanged axe was found in Newtown (NMI Ref. 1962:259). A handful of prehistoric objects have been recorded around Swords town including two flat axes of Early Bronze Age date (NMI Ref. 1939:16, E92:335) and a palstave (NMI Ref. 1939:17) of Middle Bronze Age date. The majority of objects of the later period are centred on the monastic site and medieval church at Swords Glebe and include fifty medieval pottery sherds (NMI Ref. 1974:10), glass beads, tanged knives, a bone pin and a bronze /brass finger ring (NMI Ref. 1969:40-57).

3.4. Previous Archaeological Investigations

A number of previous archaeological investigations have been carried out in the vicinity of the study area, though none within the LAP lands. The majority of these investigations were associated with the construction of the M1 (Northern Motorway / Airport - Balbriggan Bypass), which lies adjacent (to the east) to the study area, and revealed nothing of archaeological significance (Licence Nos 98E0479, 99E0547, 99E0546, 00E0953). These included archaeological testing undertaken within the roadtake in the vicinity of the recorded enclosure site in Lissenhall Great townland (RMP DU012-015). Four cuttings were opened, but no features of archaeological significance were identified during the testing (or earlier borehole monitoring) that may be associated with the enclosure site (Licence Nos 99E0547 & 98E0479; Excavations Bulletin Refs 1999:910 & 1998:117). Archaeological monitoring associated with the M1 c. 430m north of the LAP lands did, however, uncover an Early Neolithic habitation site (Licence No. 01E1074). Finds included flint nodules (struck and unstruck), some flint flakes, medieval pottery sherds and a few sherds of prehistoric pottery (Excavations Bulletin Ref. 2001:444).

Ground penetrating radar and test-excavation undertaken in advance of the proposed Metro North identified that much of the medieval fabric has survived within the Lissenhall Bridge structure (Licence No. 09E0464). A wall extends on the eastern side between Lissenhall and Balheary Bridges and an arch/culvert pre-dating the existing visible culvert on the western side of the bridge exists beneath the road. This is suggestive of a precursor or early phase of building, possibly indicating an early road prior to the re-development or widening of the road in the late 17th /early 18th century (Channing 2009).

3.5. Aerial Photographic Analysis

Analysis of aerial imagery revealed no features of archaeological potential within the proposed LAP lands. The recorded enclosure and field system (RMP DU012-012001 & -012002) located on the east side of the M1 motorway are clearly visible on an aerial photograph taken by the University of Cambridge in 1970 (CUCAP BDS048; Figure 2). The features can also be traced on the 1995 OSi aerial imagery, and appear as faint lines of current Digital Globe imagery (www.osi.ie; Figure 2). The enclosure is located c. 65m east of the LAP lands, at its closest point, with the field system beyond it to the east. It is nonetheless possible that associated features may be uncovered within the proposed LAP lands.

3.6. Results of Geophysical Survey

3.6.1. Introduction

A geophysical survey was carried out by J. M. Leigh Surveys Ltd within the available LAP lands (Licence No. 17R0185; see full report in Appendix 2). The main aim of the survey was to locate any geophysical responses that may represent the remains of unknown archaeological features. Detailed gradiometer survey was conducted in available areas (Fields 1-5 on Figures 5 & 6); an area at the northern end of the LAP, adjacent to the motorway roundabout, was not suitable for survey, being inaccessible with overgrown vegetation and modern material and debris.

Ground conditions were varied across the site. Fieldwork was conducted over a period of several months to facilitate the fieldwork: Fields 1-3 were surveyed in February 2018 and Fields 3 and 4 were surveyed in June 2018. At the time of the surveys, Fields 1 and 2 comprised of harvested crop, Field 3 comprised of short grass, and Fields 4 and were under young crop.

3.6.2. Summary of Results

Table 1 contains a description of the geophysical survey responses identified in Fields 1-5, with the summary interpretative drawings shown in Figures 5 and 6.

Table 1 Results of geophysical survey in LAP lands

Geophysical Response	Field No.	Description	Figure No.
A	1	Possible large pits or modern disturbance	5
B	2	Possible archaeological ditch or modern agricultural activity	5
C	3	Curvilinear ditch, archaeological potential	5
D	4	Possible large pits or modern disturbance	6
E	5	Irregular rectilinear enclosure c.40m E/W x c.28m N/S (SMR DU012-102). Possible internal features	6
F	5	Possible pits to N of enclosure SMR DU012-102	6
G	5	Possible field system associated with enclosure SMR DU012-102, on W/SW side	6
H	5	Possible plough-damaged remains of features associated with enclosure SMR DU012-102 (to SE) or more recent activity	6
I	5	Possible isolated pits or modern disturbance	6

The geophysical survey identified responses indicative of an irregular rectilinear ditched enclosure in the southeastern part of the LAP lands (ITM E719149 N74826; Figure 6). It measures c. 40m x 28m and further responses within the enclosure suggest internal features, with possible remains of a field system on its west / southwest side. Possible further, plough-damaged features have been identified in the vicinity of the enclosure, possibly representing clusters of pit-type features, although interpretation is tentative. The site is located c. 185m northwest of the recorded enclosure site DU012-015, with no responses identified within the RMP constraint circle in the LAP lands and only isolated responses to the east of it (Table 1, Figure 6; see also section 3.2). The newly identified enclosure has been added to the SMR for inclusion in the next revision of the RMP and has been designated SMR No. DU012-102.

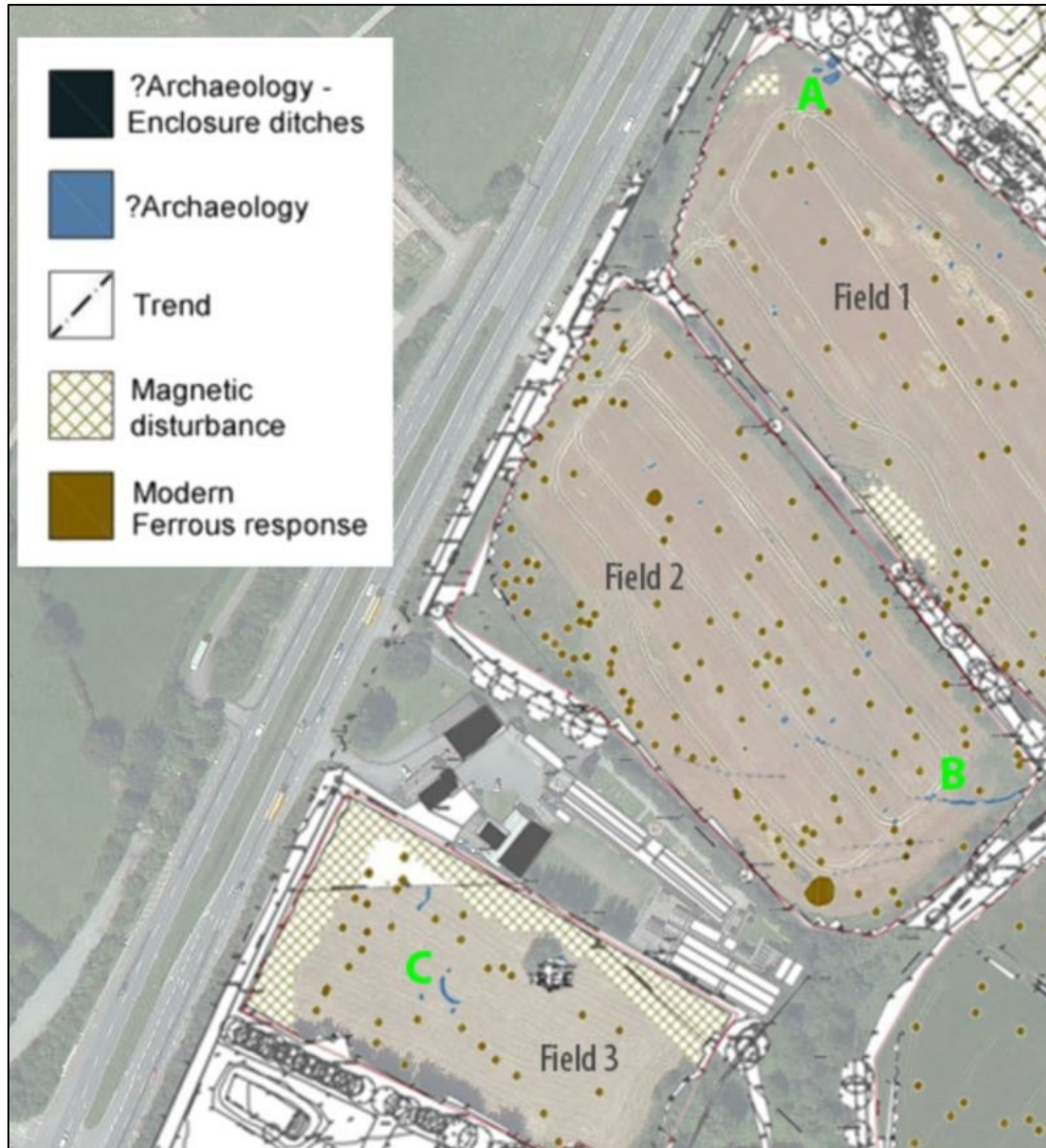


Figure 5 Results of geophysical survey in Fields 1-3

A cluster of responses which may represent either large pits of archaeological potential or modern disturbance were identified c. 125m southwest of a second recorded enclosure site, DU012-012001 (Table 1, Figure 6). The enclosure site and an associated field system are located on the opposite side of the M1 motorway (see also section 3.2).

In one of the fields along the western extent of the LAP, an isolated response indicative of a short curvilinear archaeological ditch was recorded in Field (ITM E718895 N748421; Figure 5). Although no further responses indicative of archaeology were recorded here, the shape and form of this feature interest and is considered to be of archaeological potential.

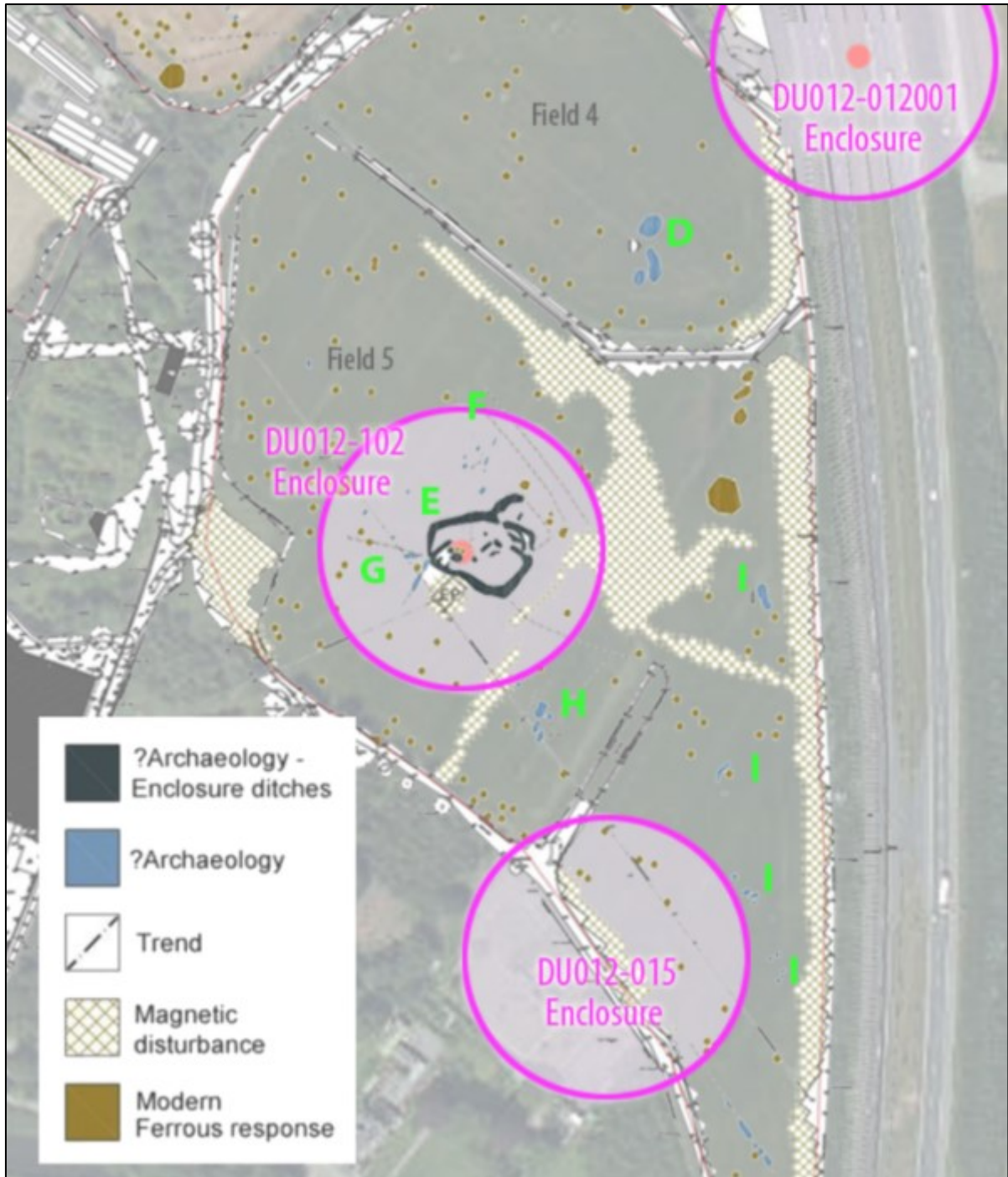


Figure 6 Results of geophysical survey in Fields 4 & 5, with RMP / SMR enclosure locations overlaid

4. ARCHITECTURAL HERITAGE

4.1. General

The study area is located where the northern fringes of the Greater Dublin urban area give way to the still relatively rural landscape of North County Dublin, to the northeast of the town of Swords and its sprawling suburbs.

4.2. Record of Protected Structures (RPS) & National Inventory of Architectural Heritage (NIAH)

There are no protected structures or sites listed in the NIAH located within the LAP lands (Cf. Figure 4).

The nearest protected structure is Lissen Hall (RPS No. 342), with surviving elements comprising the house, outbuildings, entrance gates and piers, and a cast-iron wall-mounted post-box in the gate pier. Lissen Hall was constructed in at least two different periods. The original three-storey house was a long, plain, gable-ended dwelling dating to the late 17th or early 18th century (www.ihh.ie/houses/38/Lissen-Hall/index.cfm). Slightly later, though still in the first half of the 18th century, Lissen Hall was extensively remodelled and a new front built at right angles to the earlier house to form a large T-shaped building. The new five-bay façade shows a typical mid-Georgian design, with a tripartite door-case and a Venetian window above (Architectural drawings from 1765 survive and are held in the house; Bence Jones 1978). The tripartite arrangement is repeated on the upper storey, where the central window is flanked by two blind sidelights. There are projecting bows, with semi-conical roofs at either end, while the walls of the façade continue upwards without a cornice to form a parapet, adorned with urns and eagles. These embellishments were clearly aimed at replicating Mantua, a neighbouring house on the south side of the River Broadmeadow estuary, now long demolished (Bence Jones 1978, Craig 2006).

In the mid-18th century Lissen Hall was owned by John Hatch, MP for Swords in the old Irish Parliament before it voted itself out of existence in 1801. Lissen Hall later passed to the politically influential Hely-Hutchinson family, of nearby Seafield House. In 1950 Terence Chadwick purchased Lissen Hall from the Hely-Hutchinsons, and it was subsequently inherited by his daughter, Lady Goff. As a result Lissen Hall has only been sold once in over 250 years. Although the grounds once extended into the LAP lands at its southern extent, they have since contracted and are located immediately south of the LAP boundary.

Lissenhall Bridge is a protected structure (RPS No. 341) and is listed in the NIAH (NIAH Reg. No. 11335019, Regional Rating). It is also a recorded archaeological monument (RMP DU011-081). The Down Survey map of Nethercross, c. 1655 depicts a bridge in this location. The bridge incorporates medieval material, possibly dating to the period 1450-1550, with later 18th century additions (O'Keefe & Simington 1991, Channing 2009). This five-arched bridge is located west of the present R132 road north of Swords village where it crosses the Broadmeadow river. It is built of mortared limestone masonry. The bridge has three abutting sections, the middle section has slightly pointed arches with wattle marks. The upriver cutwaters are triangular with semi-pyramidal cutwater cappings.

Three other bridges span the Broadmeadow river and its tributaries in the vicinity of the LAP lands: the adjoining two Lissenhall Bridges (NIAH Reg. Nos 11335011, 11335012, c. 70m south), built in 1895 and 1903 respectively, and Balheary Bridge, a mid-19th century stone bridge (RPS No. 340, NIAH Reg. No. 11335018, c. 120m southwest). All of these structures have been given a regional rating by the NIAH.

A further three protected structures and one NIAH site are located within a 1km radius of the LAP lands (Cf. Figure 3): Newtown House (RPS 339); Scotchstone Bridge (RPS 345); the stable block associated with the former Prospect Point House (RPS 480); and Newtown Bridge (NIAH 11335017).

4.3. Demesne Landscapes

Demesnes historically were the part of the manorial estate retained for its owner's own pleasure, use and occupation. Gardens were a component of demesnes from Anglo-Norman times, but it was not until the 16th century that they began to assume an important ornamental role, especially with the introduction of topiary, mazes and other design features. By the early 17th century walled garden enclosures were being built as an integral part of manor house design, often incorporating terraces, statuary and other Renaissance elements. By the end of the century, the symmetry of these gardens was being extended into the demesne lands to provide a landscape setting for the house. Layouts characteristically incorporated tree-lined avenues, formal ornamental woods, canals and basins. Typically arranged around the house itself were axially planned gardens, a bowling green, grass lawns, terraces and other formal features.

New ideas of naturalism, diversity and surprise in garden design became fashionable in Ireland during the 1730s. Within three decades "natural style" landscape parks were replacing the old geometric layouts. This new informality was so enthusiastically adopted by Irish landowners that, by the close of the century, very few of the older layouts were left intact although residual features often survived. While these naturalised landscape parks went through a number of distinct phases in their development, most included wide sweeps of lawn around the mansion, dotted with trees as individual specimens and in clumps, with enclosing plantation belts and perimeter walls. Many had irregular stretches of water and garden buildings. Carefully laid out driveways enhanced and emphasised the natural contours of the landscape. By the 1840s landscape parks had become a common feature of the Irish countryside with many thousands of examples indicated on early Ordnance Survey maps.

After the Great Famine in the 1850s a fall in rents and in the profitability of agriculture resulted in a dramatic decline in the number of new landscape parks being created. Instead, existing parklands were enlarged and improved, often to facilitate shooting, while arboreta and pineta - collections of pine trees of various species - played host to many newly introduced exotic trees and shrubs. A passion for plants, in the late 18th and throughout the 19th century, fuelled by intrepid plant hunters and encouraged by wealthy patrons, became a fashionable pursuit of landowners who found in gardening a way to display their wealth and social status and who vied with each other to grow all manner of rarities. Ornamental gardens and pleasure grounds were designed and planted with the rare and exotic species now flooding into Europe from the many worldwide plant-hunting expeditions. Heated glasshouses and conservatories, increasingly popular in the Victorian period, facilitated the growing of these rare and tender plants - including palms, orchids, ferns and exotic fruits.

Gardens by their nature can be ephemeral creations - reflecting changes in the seasons, subject to the natural life cycle of plants and the vagaries of changing fashion and taste. Added to these pressures are the significant economic and social changes over the last century and a half that have had a direct impact on the Irish countryside. The development and expansion of our cities and towns and the land redistribution arising from the Encumbered Estates Act of 1849 to the Land Acts of the late 19th and early 20th centuries have all resulted in significant changes, as has the considerable amount of development over the last few decades. However, despite these changes, historic gardens and designed landscapes remain a very significant component of our countryside and its heritage.

The NIAH Historic Gardens and Designed Landscapes Survey (NIAH Garden Survey (GS)) describes Lissen Hall demesne as having its main features substantially present but peripheral features unrecognisable (NIAH GS Site ID 2449). The survey is desk-based, using aerial imagery and historic

mapping and it is noted that a field survey would be required to confirm the site's true level of survival and heritage importance. It was not possible to access the estate during the field inspection undertaken for this LAP as it lies outside the LAP boundaries (see Figure 15), however, views of the estate and its boundary treatment where it aligns with that of the LAP are discussed below in the field inspection notes (section 6).

The former grounds associated with the derelict Meudon house are listed in the NIAH Garden Survey and lie within the LAP lands. The survey determined that there are virtually no recognisable features, with industrial buildings covering the southern half of the site and some remnant planting visible (NIAH GS Site ID 2443). The site of the house and its outbuildings are currently inaccessible, within a very overgrown area of dense trees and shrubs (see also sections 4.4 & 6).

4.4. Undesignated Sites

The ruined remains of Meudon house survive within an area of overgrown trees and shrubs in the southwestern quadrant of the LAP lands, just north of the Swords Food Park and west of the Swords National Ambulance Base (Figure 7).

A house appears on the site of Meudon (though it is not so-named) on the 1760 Map of County Dublin by John Rocque, with gardens laid out on its southern side and the neighbouring Lissen Hall house and grounds to the east. The building shown is significantly smaller and less elaborate than Lissen Hall and may represent a large-farmhouse and outbuildings. It is possible that these buildings represent a farm manager's house, outbuildings and kitchen garden associated with Lissen Hall, rather than a separate property. That no second house is shown on the 1764 estate map makes this more likely (see section 5.2 below).

By the time of the first edition Ordnance Survey six-inch map (1843), the house is named Meudon; it is a sizeable building with curved bays along the south side (facing the river), suggesting that the earlier house may have been re-designed and enlarged or even entirely replaced. The garden to the south has been removed, replaced by open parkland, and a substantial arrangement of outbuildings are shown to the north. These are indicated as 'Mail & Stage Coach Stables' and occupy three sides of a very large courtyard, undoubtedly serving the mail coach road from Dublin to Drogheda to the west (formerly a turnpike road). Meudon may have operated as a boarding house or coaching inn, or simply a private residence, with the occupant managing the stables (and the profits funding the new or improved house).

Meudon is not a protected structure and is not listed in the NIAH Building Survey. The 19th century house ruins may contain fabric associated with an earlier building and it is also possible that remains of the late 18th or early 19th century stables survive within the overgrown area on the north side of the ruins. Both are of local historical and built heritage interest.



Figure 7 Remains of Meudon house in 1995 (top), 2011/2013 (left) and 2017 (right), showing progressive overgrowth of site

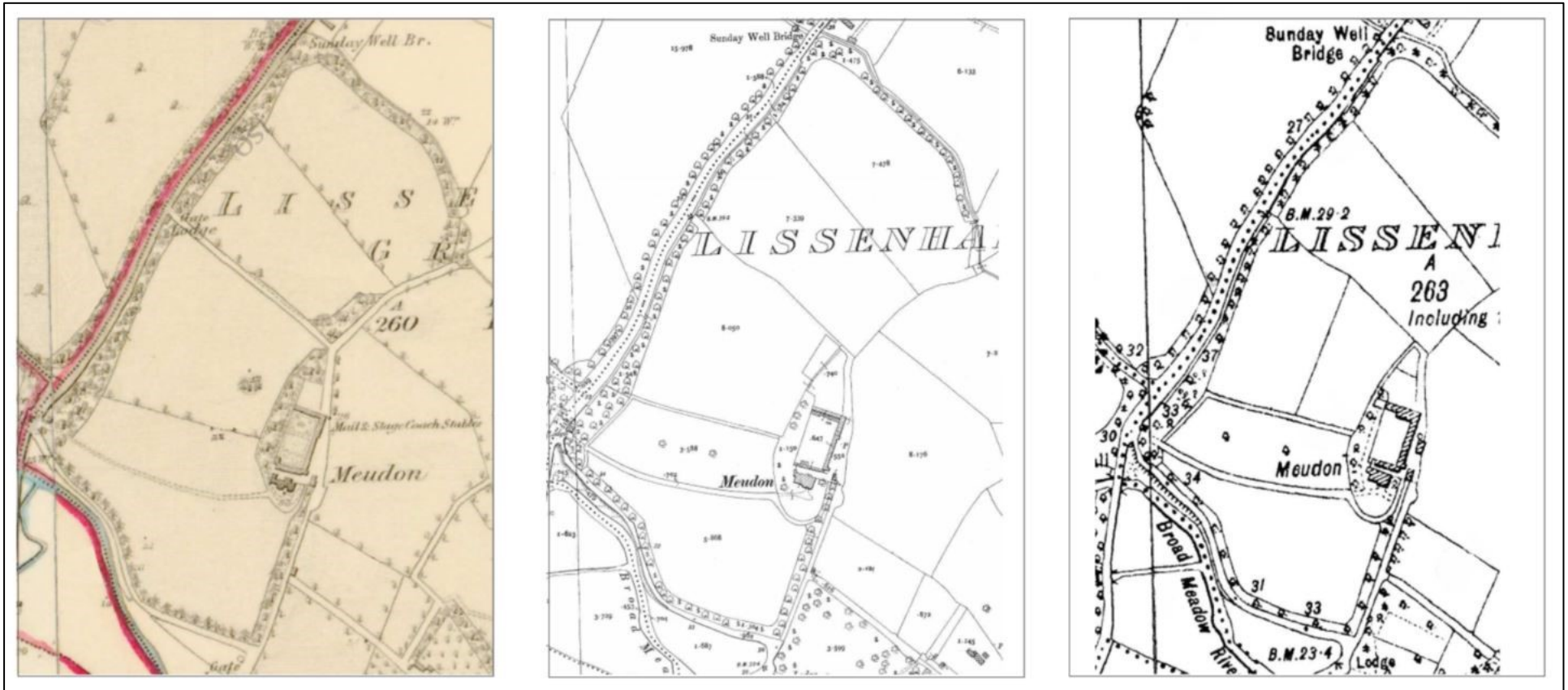


Figure 8 Meudon house and grounds as depicted on the historic Ordnance Survey maps, 1843 (left), 1906-9 (middle) and 1935-8 (right)



Figure 9 Aerial photograph c. 1950s, showing Meudon house and Lissen Hall (courtesy of Fingal County Library, Local History Dept)

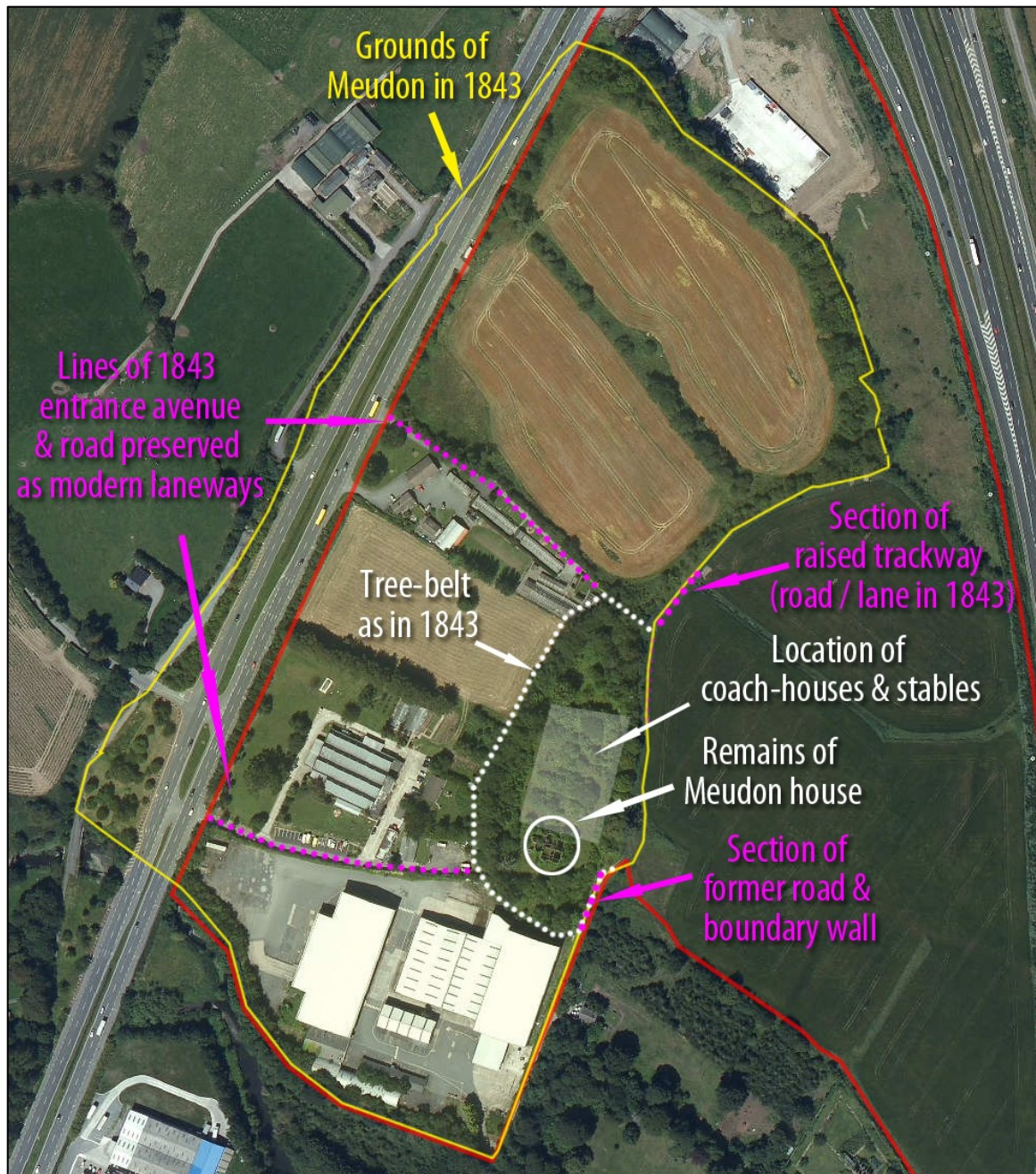


Figure 10 Original extent of Meudon grounds overlaid onto modern aerial image, showing associated features

5. CULTURAL HERITAGE

5.1. Townland Names and Boundaries

5.1.1. Townland Names

The townland names in this part of north Dublin provide reference to the historical heritage of the area. They are an invaluable source of information not only on the topography, land ownership, and land use within the landscape, but also on its history, the archaeological monuments and the

folklore. Where a monument has been forgotten or destroyed, a place name may still refer to it, and may therefore indicate the possibility that remains may survive below the ground surface.

Townland names were recorded by the Ordnance Survey surveyors in the 1830s and 1840s, when the entire country was mapped for the first time. The mapmakers, soldiers and antiquarians who collected the place names and local history varied in their interests and abilities. While most place names were anglicised or translated relatively accurately, some were corrupted virtually beyond recognition. Nonetheless, a variety of place names, whether of Irish, Viking, Anglo-Norman, and English origin, appears throughout Dublin, and the appearance of the different languages is often a good indicator of the cultural heritage, and therefore the archaeological record of the area.

The townland names of this area are largely dominated by English language-derived names, although there are some names with Irish elements. Lissenhall (Great and Little) – the only townlands within the LAP – is an example of the latter, with *an leasáin* meaning an earthen fort (Joyce 1995, Vol I, 273-4). This is of particular interest given the two recorded enclosure sites in the townland (DU012-012 & DU012-015), one of which lies within the LAP lands, and the newly identified enclosure that is also within the LAP.

5.1.2. Townland Boundaries

A small section of the Lissenhall Great / Balheary Demesne townland boundary coincides with the LAP boundary at its southwestern corner. The townland boundary is formed by the Broadmeadow river and is separated from the LAP lands by the mature trees along its northern bank.

5.2. Cartographic Sources

5.2.1. Down Survey, Barony Map of Nethercross, 1656

The study area is clearly indicated on the Barony map of Nethercross (Figure 11). The Broadmeadow river is shown to the south of the LAP lands and a bridge crossing is depicted in a similar location to Lissenhall Bridge (RMP DU011-081), crossing this river. The northern part of this bridge is situated in *Littlelesnehall* (Lissenhall Little) and connects to *Parke of Blackhall* in the south. *Biglesnehall* (Lissenhall Great) is shown to the east of *Littlelesnehall*. No structures or features are shown within the townland. *Newtowne* (Newtown) is depicted to the west of *Littlelesnehall*. The townland of *Balhaire* (Balheary) is shown to the north of *Newtowne*. A road extends in a north-northeast/south-southwest direction from Swords town to the east of the study area and takes a similar alignment to the modern R132. The parish map notes that ownership of Lissenhall Great was '*late the Bishp of Dublin's now ye Colledge*'. No additional detail is provided on the Down Survey parish map or its accompanying terrier.

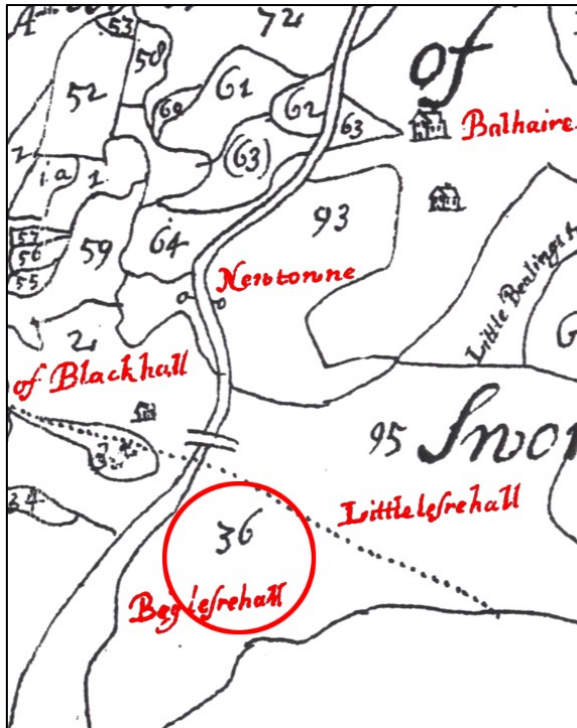


Figure 11 Down Survey map of the Barony of Nethercross, c. 1656

5.2.2. 18th century cartographic sources

Rocque's Map of the County of Dublin in 1760 depicts the LAP lands clearly. A road in a similar location and alignment to the modern R132 road was in existence by this time and forms the western boundary of the study area. This is indicated as a *Turn Pike* road and a milestone indicating that it is 7 miles from Dublin is also shown. It formed part of the 18th century turn-pike (or tolled) road from Dublin to Drogheda. The Dublin to Drogheda road had been maintained by the parish labour system since 1612 and was later assisted by the grand jury of Dublin. After the Battle of the Boyne in 1690 and during the first quarter of the 18th century, traffic on this, a main road, began to increase. The practice of charging tolls on roads in order to maintain them was in operation in England at the time and this system was adopted in Ireland in 1729. In 1731, the road northward from Dublin to Drogheda was made a toll road under local trust. The tolls were collected at gates placed across the road and such toll-gates were called turnpike gates (Broderick 1999). A turnpike was located at Lissenhall Bridge and is probably indicated by one of the several small structures on the west and east sides of the road that are depicted on Rocque's map.

The Broadmeadow River, which forms part of the southern boundary of the LAP lands, is depicted but not named on the map. A road runs east/southeast along the north bank of the river estuary to Prospect Point (this road survives in part along the southwestern LAP boundary). A local access road heads north from this road (through the LAP lands), terminating at a stream that flows east/southeast through the study area. Two apparently separate properties are depicted on the map, set on either side of this access road, on the north bank of the Broadmeadow. Given the placement of the name 'Lissen Hall', it is possible that the buildings and gardens all formed part of the Lissen Hall estate, with the principal house to the southeast immediately outside of the LAP lands, and perhaps a farm manager's house, outbuildings and kitchen garden to the northwest (within the LAP lands).

Lissen Hall house is depicted as a large L-shaped house on the site of the present house, with outbuildings and gardens to the west, east and northeast. Gardens in the late 17th and earlier 18th century were often given their characteristic geometry and vertical structure by the creation of straight walks and allées bordered by trees and shrubs (Costello 2016). This can be seen at Lissen Hall, where the garden is laid out in a geometrical form, with paths radiating from the house to either side of the avenue; on the north side are four paths lined with planting, with one path mirroring the angle on the south side, leading to the river.

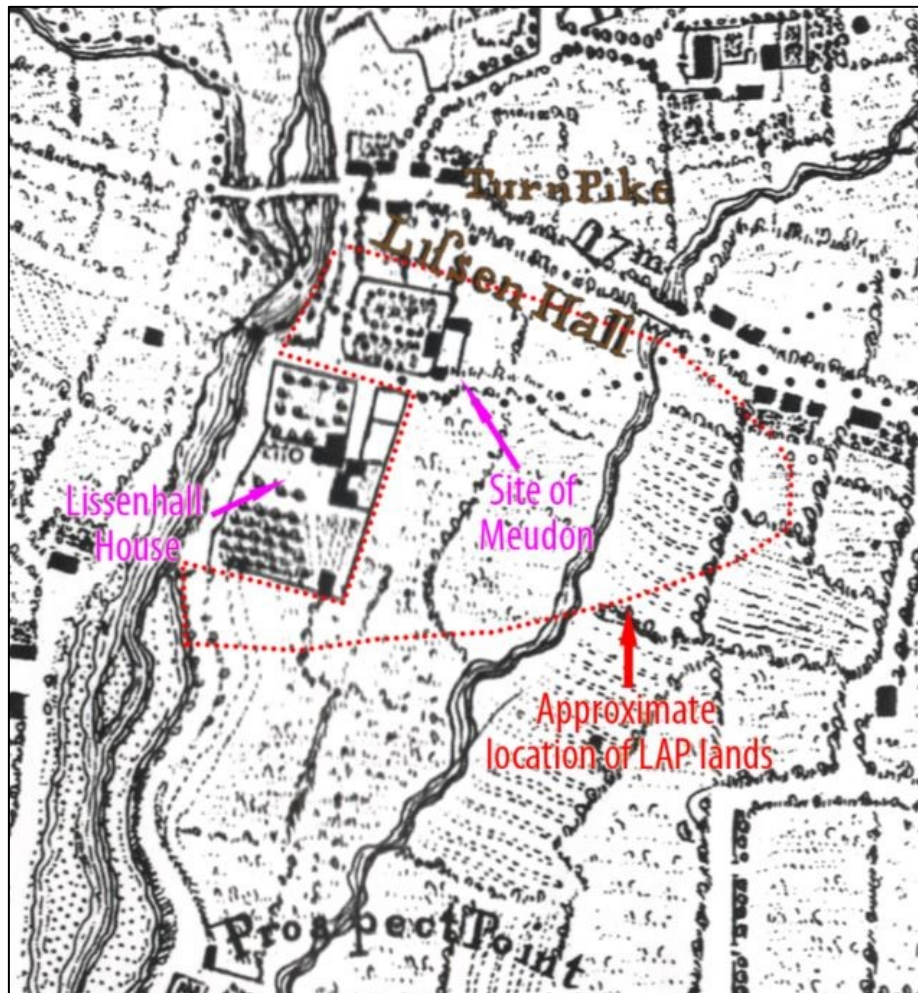


Figure 12 Rocque's map of County Dublin, 1760

An estate map of 1764 shows part of the lands of 'Big Lissen Hall' that were let by the representatives of the Late John Hatch, Esquire. It shows a large country house, Lissen Hall, with the land parcel bounded by the Dublin to Drogheda road to the west, the Broadmeadow river to the south and a stream to the north. The land parcel has been subdivided, with a boundary enclosing a smaller area in the southwestern corner, roughly the size of the later grounds of Lissen Hall and Meudon combined. That no other dwelling is shown within the land parcel suggests that Meudon was either not yet built or that it was not distinguished as a separate property. By the time of Taylor and Skinner's road map of 1777, however, two separate houses in relative proximity are shown on the east side of the turnpike road. These presumably represent Lissen Hall and Meudon, with the latter perhaps newly built.



Figure 13 Lissenhall estate map of 1764



Figure 14 Taylor and Skinners Map of the Roads of Ireland, 1777

5.2.3. First edition Ordnance Survey map, 1837-43

The first edition Ordnance Survey (OS) map of 1843 is the earliest accurate and detailed cartographic source for the LAP lands (Figures 15 & 16). The road network is much the same as that depicted on Rocque's 1760 map and both the turnpike and Lissenhall Bridge are still named. Lissenhall House is named (*Lissen Hall*) and both house and grounds are similar in layout to those shown by Rocque, with the principal elements and majority of the estate lying outside the LAP. The additional detail of the OS map reveals a large T-shaped house, with a semi-circular area at

the front of the house providing a carriage-turn, and an array of outbuildings, kitchen garden and orchard to the rear (north / northeast). A broad band of trees provide a screen along the east / northeast (where the boundary to the estate is today), with fields and a footpath associated with the house beyond it to the east. The 'site of fort' is marked at this tree-boundary, at the boundary to the LAP lands, but there is no other indication of the monument (RMP DU012-015). The *Site of Sunday Well* and *Sunday Well Bridge* are indicated at the northern end of the LAP lands, with the well site located outside the boundary to the northwest.

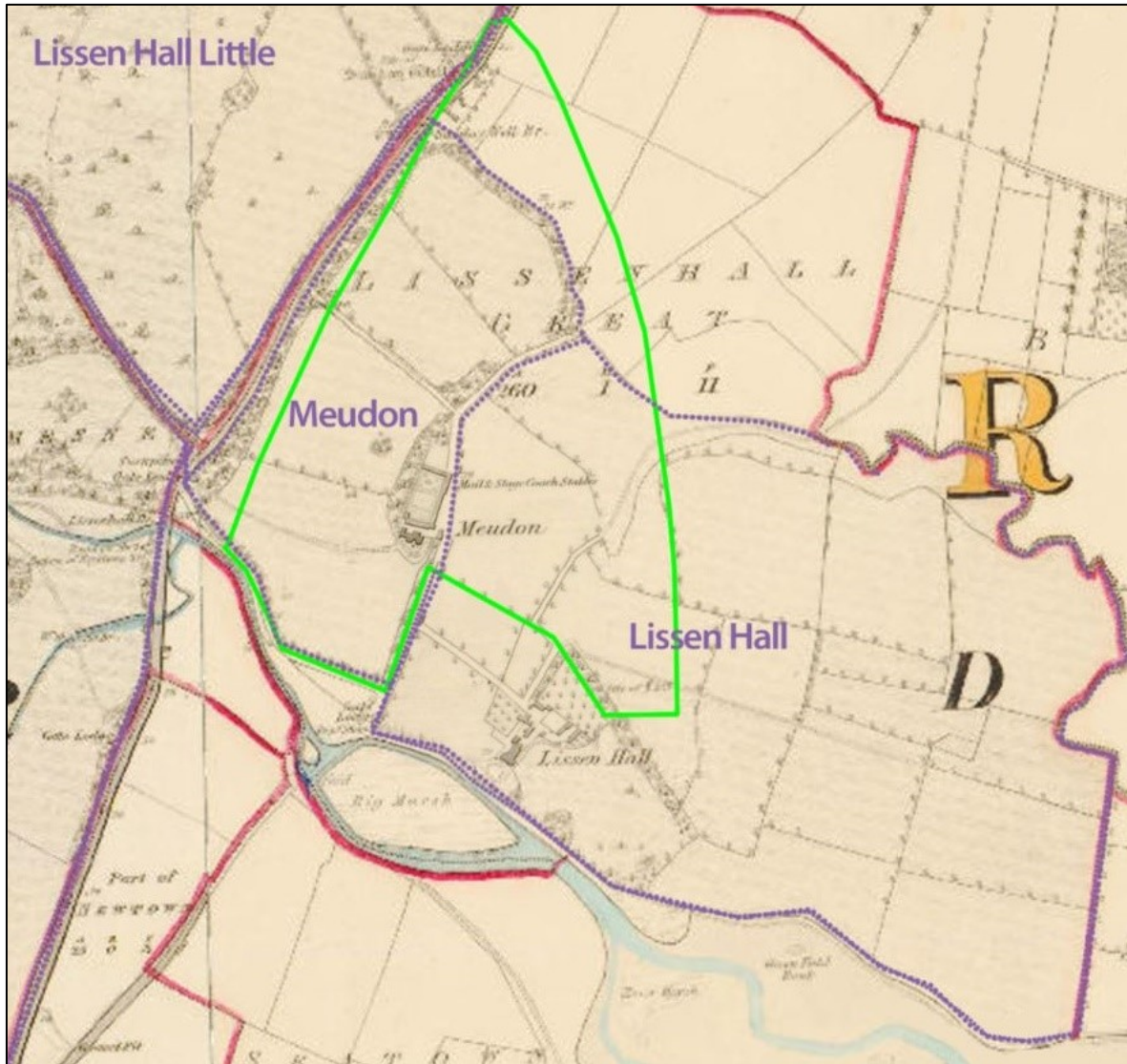


Figure 15 First edition Ordnance Survey map, 1843, showing demesne boundaries

Meudon house and grounds lie within the LAP lands and are separated from Lissen Hall demesne by a north-south lane / roadway. The house has curved bays along the south side (facing the river), suggesting that the earlier dwelling may have been redesigned and enlarged or even entirely replaced. The formal garden to the south has been removed, replaced by open parkland, and a substantial arrangement of outbuildings are shown to the north. These are indicated as 'Mail & Stage Coach Stables' and occupy three sides of a very large courtyard, undoubtedly serving the mail coach road from Dublin to Drogheda to the west (formerly a turnpike road).

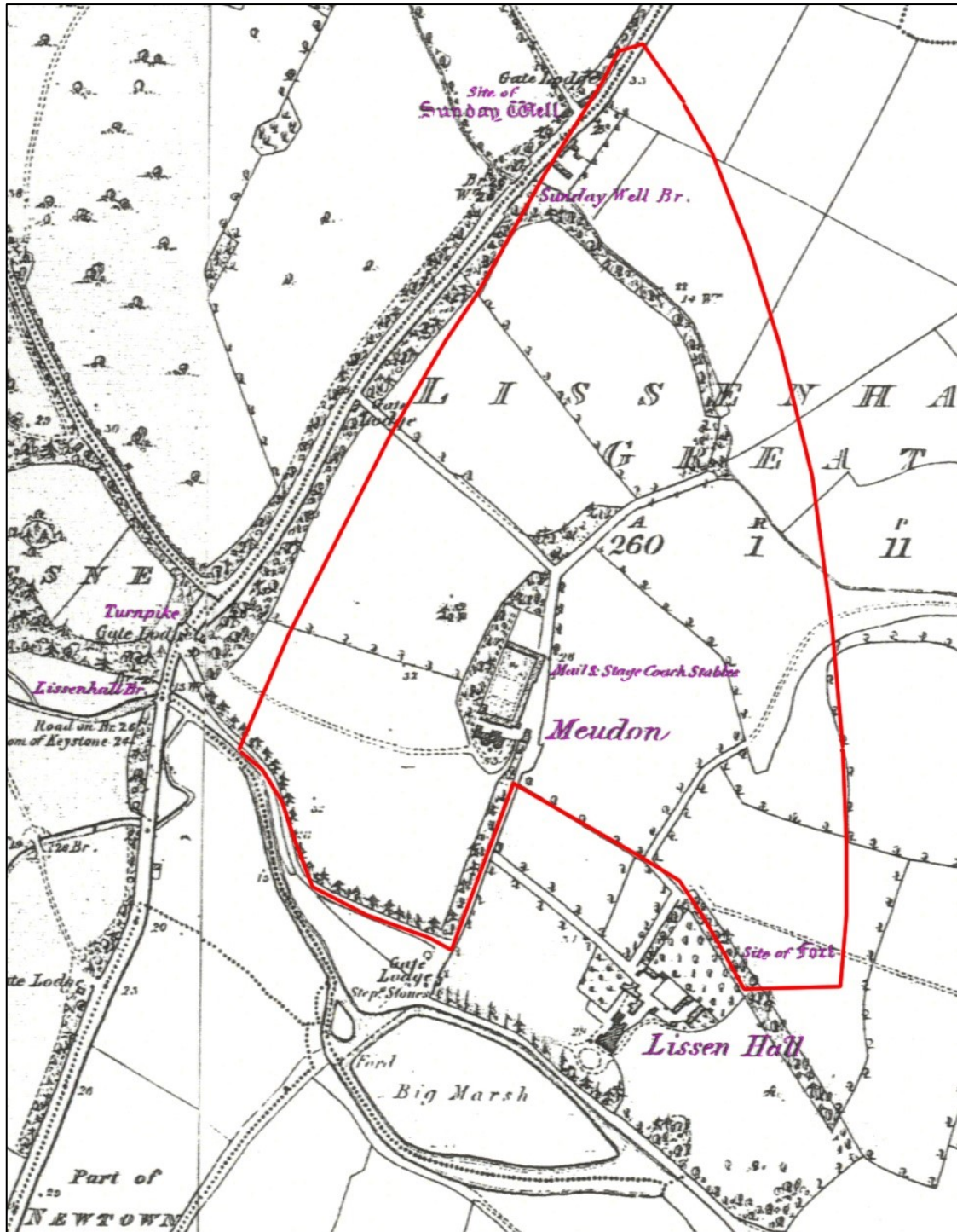


Figure 16 First edition Ordnance Survey map, 1843

5.2.4. Revised Edition Ordnance Survey 25-inch map (1906) & six-inch map (1935-38)

By the time of the revised edition OS 25-inch map, Lissen Hall has lost many of its more formal landscape elements: the circular carriage-turn at the front of the house has been removed and replaced by a broad swathe of woodland along the north bank of the river; both kitchen garden and orchard are no longer depicted; the band of trees along the east / northeast are gone, as are the laneway and path to the north and east; and there is an expanse of open parkland to the north and east. Meudon, on the other hand, is relatively unchanged. A small area of trees have been

cleared on the north side of the stables and the former laneway curving northwards now terminates at this point. The ‘Lissenhall Bridges’ are named on this map, where they cross the River Broadmeadow at the ‘Big Marsh’ to the south of Meudon and Lissen Hall. The site of the fort is no longer indicated. There are no significant changes on the revised edition OS six-inch map of 1935-38 (not shown).

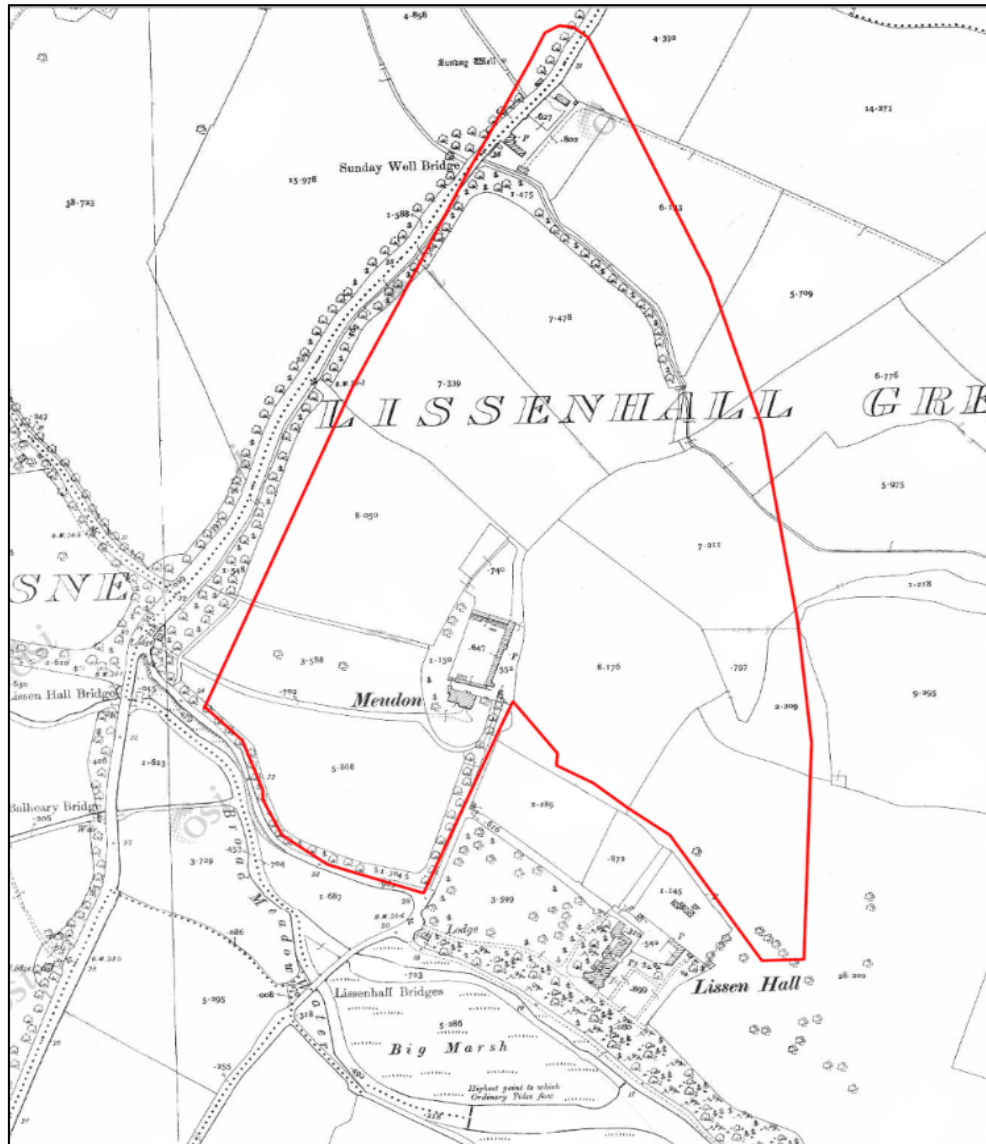


Figure 17 Revised edition Ordnance Survey 25-inch map, 1906

6. FIELD INSPECTION

A field inspection took place on 19th September 2017, on a dry bright day. The field survey numbers assigned are annotated on Figure 18, which also shows the location of cultural heritage features identified during the inspection.

The site is bounded along its western side by the R132 dual-carriageway road and along the east by the M1 motorway, with Lissen Hall and the Broadmeadow river on the south side. The land is relatively level and from the southern section the land slopes to the south towards the flood plain of the Broadmeadow. There was no access to the long narrow field along the northeastern side of the LAP lands, an area that was previously in use as a compound during the construction of the

motorway in the early 2000s; the disturbed nature of the land is evident in aerial imagery and the most recent (Google Earth 2022) shows a large concrete pad, hard-core / tarmac surfaces and two barns in the northern half with an overgrown scrubby field in the southern half (the same was evident in aerial imagery at the time of inspection (Google Earth 2017)).

The LAP lands are still primarily agricultural, comprising four arable fields and one pasture field (Fields 1-5), with the exception of three plots on the western side, each accessed off the R132 road. These plots house business / industrial premises, with a narrow plot between fields 2 and 3 containing the Lissenhall Veterinary Hospital, the Swords National Ambulance Base on the south side of field 3, and Swords Food Park immediately south again.

6.1. Fields 1-3

Fields 1 and 2 are relatively level and both were under crop stubble at the time of inspection (Plates 1 & 2). The field boundaries of both are dense hedgerow and mature trees, with a stream flowing along the northern side of Field 1. This stream marks former boundary to the grounds of Meudon house. It is set within a band of mature trees that are depicted on the historic OS maps. An unusually high earthen bank (c. 2.5m high) sits on the northern stream bank, with mature deciduous trees spaced along its length (Plate 3). This is a formal property boundary, possibly originally constructed to mark the boundary of the Lissen Hall estate (as depicted on the 1764 estate map, Figure 13) and later the Meudon estate. A lower earthen bank, almost obscured by undergrowth, is set c. 5m back from the southern stream bank and runs parallel to it (Plate 4). The level ground between the low bank and the stream may once have formed a path or road that ran along the boundary, perhaps a continuation of the north/south road depicted from Rocque's map onwards, which otherwise terminates at the stream.

Field 3 is a small, level rectangular field that was under short pasture at the time of inspection, with dense tree-lined boundaries and one mature deciduous tree just northeast of centre (Plate 5). The tree-planting around Meudon house and stables forms the eastern boundary.



Plate 1 Field 1 facing southeast



Plate 2 Field 2 facing south



Plate 3 High earthen bank on north side of stream, Field 1, facing east / southeast



Plate 4 Low earthen bank to south of stream, Field 1



Plate 5 Field 3 facing east / southeast

6.2. Fields 4 & 5

Fields 4 and 5 are large open arable fields, with the land sloping gently down to the Broadmeadow river in the south (Plate 6). The field boundary separating the two fields survives only as a ditch, with some low scrub growing in it. The boundaries along the north and west/northwest are

mature tree and hedgerow, with newer planting screening the motorway along the east side, and the mature trees of Meudon and Lissen Hall along the east/southeast. There was no visible surface trace of the recorded enclosure site (RMP DU012-015), which is located in a level area at the south end of field 5 (Plate 7). Similarly, there was no visible surface trace of the enclosure site identified by geophysical survey (SMR DU012-102) in the level ground of field 5 (Plate 6).



Plate 6 View south from field 4 of enclosure site SMR DU012-102



Plate 7 Location of recorded enclosure site RMP DU012-015, Field 5, facing south

A raised trackway survives for c. 45m along the northwestern edge of field 5, a remnant of the road that once ran northwards between Meudon and Lissen Hall and that is depicted on Rocque's map of 1760. Although now grass-covered, a slight camber was evident and ditches line both sides of the c. 4m wide track (Plate 7). There was no trace of the former road in field 4. A track continues southwards around the edge of field 5 and while this does not follow the line of the former road (which ran within the tree-line of Meudon), it reconnects with the former road along the western boundary of Lissen Hall. The stone wall c. 1.8m high, marking the boundary of Meudon's grounds, survives along this section of track (Plate 8). The continuation of the roadway to the south is visible on aerial imagery, between Lissen Hall and the Swords Food Park, but access to it is blocked by a solid metal gate.



Plate 8 Remnant of 18th century roadway, Field 5



Plate 9 Remnant of 18th century roadway and boundary wall to Meudon

As noted above in section 3.7.4, the remains of Meudon house are located within an area of dense and very overgrown vegetation, on the western side of Field 5. Survey of the remains was not possible due to the overgrowth.

The boundary wall of the walled garden at Lissen Hall coincides with the LAP boundary on the southwest side of Field 5 (Figure 18). It is largely obscured by an overgrowth of vegetation, but sections of it were visible (Plates 10-12). The wall is c. 3m high and the original rubble stone facing has come away at the south end, exposing the red-brick internal facing. There was evidence of modern cement repairs at the north end of the wall. Only the roofline and chimney tops of the rear block of Lissen Hall were visible from within the LAP lands; the front of the house faces southeast, originally placed to enjoy views of the River Broadmeadow, though these have been screened by trees since the 19th century. No windows were visible at attic height in the gable end that faces the LAP lands.



Plate 10 View of Lissen Hall from Field 5, facing southwest



Plate 11 Boundary to walled garden with rubble-stone facing intact



Plate 12 Boundary to walled garden with red-brick internal facing exposed

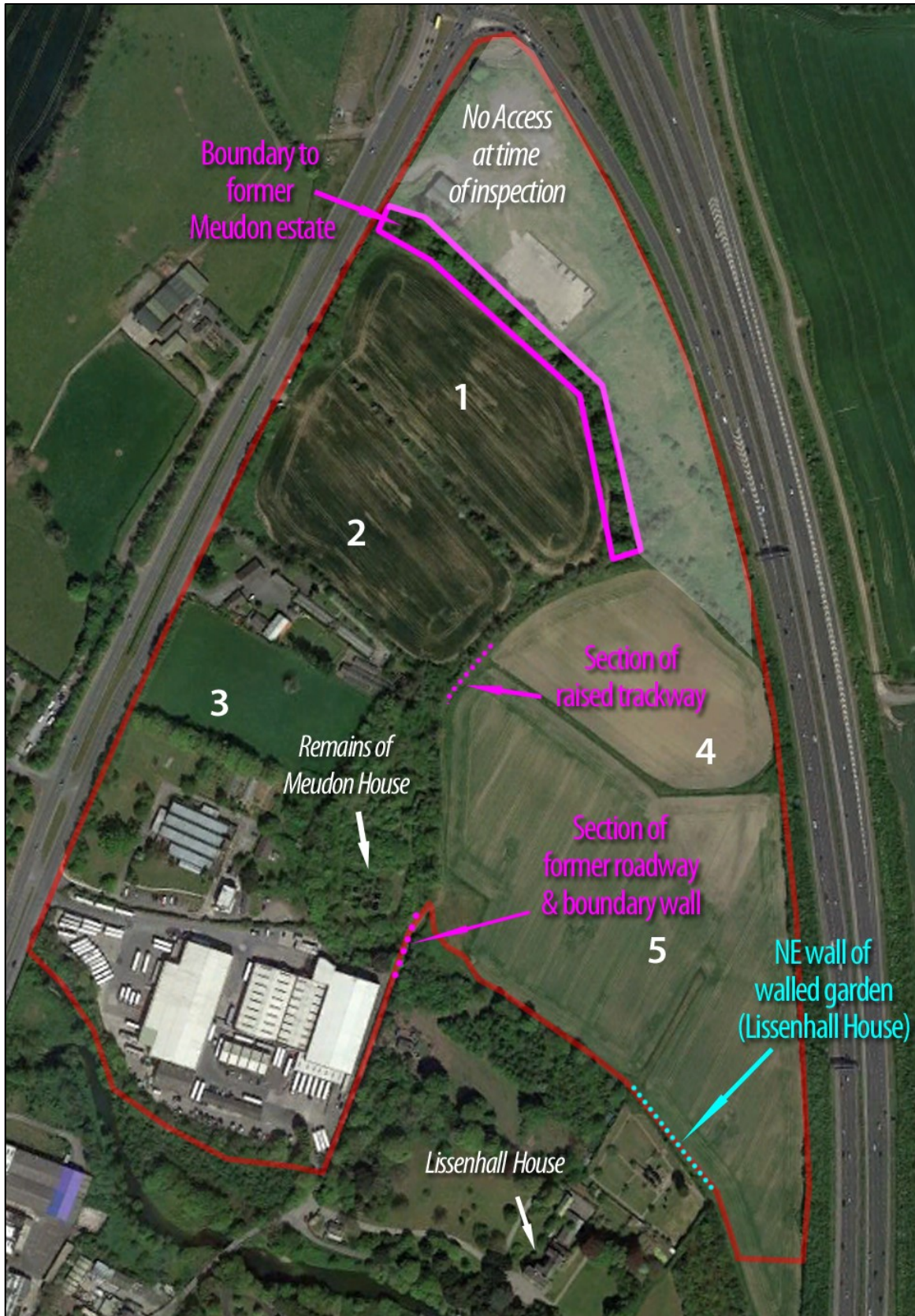


Figure 18 Aerial photo showing cultural heritage features identified during field inspection

7. CONCLUSIONS

7.1. Introduction

This baseline archaeological, architectural and cultural heritage appraisal looks at a mixed area of farmland and business / industrial premises located c. 1.2km to the north of Swords town, flanked by the R132 road to the west and the M1 motorway to the east, with the Broadmeadow river to the south. The LAP lands incorporate one previously known archaeological site (RMP) and a newly identified enclosure site, now added to the SMR (No. DU012-102). It also includes the remains of a 18th / 19th century house (Meudon) and its grounds, which are now given over to agriculture and existing development, as well as two agricultural fields that once formed part of the former demesne of Lissen Hall.

7.2. Archaeological Heritage

7.2.1. Recorded Archaeological Sites (RMP / SMR)

The geophysical survey undertaken within the LAP lands identified an irregular rectilinear ditched enclosure in Field 5, with possible internal features and field system and other potential features in its vicinity (Figure 6). The enclosure was subsequently added to the SMR for inclusion in the next revision of the RMP and has been designated SMR No. DU012-102.

The archaeological constraints area of a recorded enclosure site extends partly into the LAP lands in Field 5, straddling the boundary of the Lissen Hall estate (RMP DU012-015, Figures 2 & 3). It is marked as '*Site of fort*' on the first edition OS map, but is not visible at ground level nor on aerial imagery, and the geophysical survey did not identify any responses at this location. The rectilinear enclosure identified by the geophysical survey is located c. 185m northwest of the RMP location. The possibility that the early 19th century annotation was an approximate rather than accurate location cannot be discounted (if, for example, it was based on local folklore or memory of a monument being in the vicinity of Lissen Hall). As such, it is possible that the newly identified enclosure (SMR DU012-102) corresponds to the one indicated on the first edition map. It is equally possible that there was more than one enclosure in the immediate area, with the RMP site representing one and a second revealed by the geophysical survey.

An enclosure and field system are also recorded c. 65m east of the LAP lands, on the east side of the M1 motorway (RMP DU012-012001 & 012002; aerial imagery demonstrates that the sites are located on the opposite side of the motorway to the LAP lands). It is possible that associated features may be uncovered within the proposed LAP lands (e.g. pit-type responses were identified by the geophysical survey c. 125m southwest of the recorded enclosure).

7.2.2. Newly Identified Sites

With the exception of the enclosure now designated SMR DU012-102, no other definite archaeological sites were identified. The geophysical survey did however note discrete features of archaeological potential in Fields 1-3 (Figure 5).

7.2.3. Riverine Potential

The Broadmeadow River forms part of the southern boundary of the LAP lands. It is known that riverine environments have attracted settlement from earliest times. They are regarded as highly sensitive and are considered to have an intrinsically significant archaeological potential unless proved otherwise by archaeological investigation. The section of the LAP lands closest to the river,

at the southwest end, is already developed (occupied by the Swords Food Park) and it is highly unlikely that anything survives beneath the large warehouses and concrete surfaces. However, the southeastern corner of the LAP lands is relatively close to the river and it is possible that subsurface settlement activity (prehistoric or otherwise) may come to light in this area (e.g. the isolated pit-type features identified by geophysical survey in this area may prove to be archaeological in nature).

7.2.4. Greenfield Potential

No items of archaeological potential were noted during the field inspection, however, this does not mean the study area is void of archaeology. Centuries of arable cultivation and land improvement processes have created a modern agricultural landscape. Agricultural development tends to obscure any surviving surface archaeology, as is the case with the enclosure (DU012-102) and possible associated field system identified by the geophysical survey in Field 5; this site was previously unknown and had no above-ground expression. It is possible that additional subsurface archaeological features not detected by the geophysical survey survive below the present ground level within the LAP lands. The level of previous disturbance within the unsurveyed area at the northern end of the LAP lands is also unknown.

7.2.5. Recommendations

Future plans for development within the LAP lands should be cognisant of the following recommendations in relation to archaeological heritage:

- Given the size of the LAP lands, a programme of archaeological testing should be undertaken across the area, including the unsurveyed field at the northern end. This would be carried out under licence to the National Monuments Service (NMS) of the Department of Housing, Local Government and Heritage (DHLGH). The testing would seek to determine the significance, nature and extent of the potential archaeological sites and features found during the geophysical survey (including the rectilinear enclosure, to confirm the archaeological nature of the site) and to identify any additional isolated or ephemeral features. The testing should be carried out well in advance of any proposed development. On the basis of the test excavation results, further mitigation may be sought by the NMS in the form of additional test excavation, preservation *in situ* (by avoidance or design) or preservation by record by archaeological excavation;
- Recorded archaeological sites are protected by the National Monuments legislation (1930-2004; Appendix 1). It is the policy of the NMS to avoid any impact to RMP sites by preserving them *in situ* and not permitting development to take place in those areas. Given the uncertainty regarding the exact location of recorded enclosure site RMP DU012-015 and the absence of any geophysical responses within the RMP constraints area in the LAP lands, it is recommended that further archaeological investigation in the form of targeted test-trenching should be undertaken at this location;
- Protection under the National Monuments legislation should be understood to extend to the newly identified rectilinear enclosure site identified by geophysical survey in Field 5, which has been added to the SMR for inclusion in the next revision of the RMP (designated SMR No. DU012-102). It is the policy of the NMS to avoid any impact to known archaeological sites by preserving them *in situ* and not permitting development to take place in those areas. It is recommended, however, that archaeological testing be undertaken to confirm the archaeological nature of the site;
- It should be noted that preservation *in situ* of known archaeological sites is the preferred form of mitigation of the NMS. Where it can be demonstrated that preservation *in situ* is not possible, however, the NMS may consider preservation by record (full hand-

excavation). Consultation with the DHLGH should be sought to discuss any further mitigation measures following the results of the archaeological testing of the sites.

7.3. Architectural Heritage

7.3.1. Protected Structures & NIAH Sites

There are no protected structures or sites listed in the NIAH located within the LAP lands, however, the present grounds of Lissen Hall abut the southern boundary of the LAP. The house, out-offices and entrance gates are listed in the Record of Protected structures (RPS 342). The adjoining boundary is, for the most part, well screened by dense hedgerow and mature trees, with the exception of the walled garden which is located to the rear (northeast) of the house and its out-offices. The walled garden backs onto the southeastern LAP boundary and sections of the rear wall were visible in places through the vegetation overgrowth. Lissen Hall itself is located c. 100m southwest of the boundary and faces southeast, looking towards the Broadmeadow river and estuary. Only the roofline of the house's rear gable could be seen from within the LAP lands, with no windows visible at attic height.

The former demesne associated with Lissen Hall once extended over much of the LAP lands. It originally incorporated the later Meudon estate, becoming two distinct properties possibly by the late 18th century. No designed landscape elements associated with the late 18th / early 19th century Lissen Hall demesne are depicted within the LAP lands on the historic mapping, with the fields apparently in use for agricultural purposes (as they are today). The main features, which are concentrated in the area around the house, are mostly extant and are contained within the grounds that abut the LAP lands to the south. The former demesne became increasingly fragmented and reduced in size over time, culminating with the construction of the M1 motorway in the early 2000s.

7.3.2. Undesignated Sites

The ruined remains of the 18th / 19th century Meudon house survive within an area of overgrown trees and shrubs in the southwestern quadrant of the LAP lands, just north of the Swords Food Park and west of the Swords National Ambulance Base. The ruined building sits at the south end of an area that will be highlighted in the LAP for the protection and preservation of woodland and hedgerows; this area is enclosed by planting shown on the first edition OS six-inch map (1843).

Meudon is not a protected structure and is not listed in the NIAH Building Survey. The house ruins may contain fabric associated with an earlier building and it is also possible that remains of the late 18th or early 19th century stables survive within the overgrown area on the north side of the ruins. Both are of local historical and built heritage interest. The house remains and stable site could not be surveyed due to the overgrowth of vegetation, which has become progressively worse since the 1990s (see Figure 7). If the vegetation is left unchecked, the condition of the house remains will continue to deteriorate and eventually collapse.

7.3.3. Recommendations

Lissen Hall and its grounds lie outside the LAP lands, however, any future development in the environs of the Lissen Hall estate should be cognisant of its setting and visual amenity. If development is to occur, It is also recommended that consultation with the Architectural Heritage Unit of the DHLGH be sought in order to discuss any necessary mitigation strategies, which may include additional screening using native tree species along the northeastern boundary to the grounds, at the walled garden.

The ruins of Meudon house are located within the woodland preserve at the centre of the LAP lands. As part of the preservation of this area, it is recommended that vegetation overgrowth be cleared to enable the recording of the remains (and of any above-ground foundations of the stables to the north), to establish their significance and to inform future protection strategies if required.

7.4. Cultural Heritage

Several features of cultural heritage were identified within the LAP lands during field inspection (see Figure 18):

- Two parallel earthen banks set either side of a stream along the northeast side of Field 1, possibly marking the 18th century boundary to the Lissenhall (and later Meudon) estate, with the low bank perhaps acting as boundary ditch for a former roadway;
- Section of raised trackway at northwestern boundary of Field 5, remnant of 18th century road;
- Section of former 18th century road and boundary wall to Meudon, to south of woodland preserve.

Information relating to detailed design would be required in order for specific mitigation measures to be implemented regarding the features of cultural heritage listed above. Should future development necessitate their removal, it is likely that the features would require recording in advance, by means of photographic and written record.

7.5. General

All recommendations in this report are subject to approval by the National Monuments Service and the Architectural Heritage Unit of the DHLGH and the National Museum of Ireland.

Attention is drawn to the relevant portions of the National Monuments legislation (Appendix 1), which outlines the developer's obligation to facilitate and fund all archaeological works that may be considered necessary by the National Monuments Section or the National Museum in respect of development proposals.

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APPENDIX 1 SUMMARY OF RELEVANT LEGISLATION

National Monuments Legislation (1930-2004)

The National Monument Act, 1930 (as amended) provides the formal legal mechanism to protect monuments in Ireland. Protection of a monument is provided via:

Record of Monuments and Places (RMP);

National Monument in the ownership or guardianship of the Minister for Arts, Heritage, Regional, Rural & Gaeltacht Affairs or a Local Authority;

National Monument subject to a Preservation Order (or temporary Preservation Order);

Register of Historic Monuments (RHM).

The definition of a monument is specified as:

any artificial or partly artificial building, structure or erection or group of such buildings, structures or erections;

any artificial cave, stone or natural product, whether forming part of the ground, that has been artificially carved, sculptured or worked upon or which (where it does not form part of the place where it is) appears to have been purposely put or arranged in position;

any, or any part of any, prehistoric or ancient tomb, grave or burial deposit, or (ii) ritual, industrial or habitation site; and

any place comprising the remains or traces of any such building, structure or erection, any cave, stone or natural product or any such tomb, grave, burial deposit or ritual, industrial or habitation site.

Under Section 14 of the Principal Act (1930):

It shall be unlawful...

to demolish or remove wholly or in part or to disfigure, deface, alter, or in any manner injure or interfere with any such national monument without or otherwise than in accordance with the consent hereinafter mentioned (a licence issued by the Office of Public Works National Monuments Branch),

or

to excavate, dig, plough or otherwise disturb the ground within, around, or in the proximity to any such national monument without or otherwise than in accordance...

Under Amendment to Section 23 of the Principal Act (1930):

A person who finds an archaeological object shall, within four days after the finding, make a report of it to a member of the Garda Síochána...or the Director of the National Museum...

The latter is of relevance to any finds made during a watching brief.

In the 1994 Amendment of Section 12 of the Principal Act (1930), all the sites and 'places' recorded by the Sites and Monuments Record of the Office of Public Works are provided with a new status in law. This new status provides a level of protection to the listed sites that is equivalent to that accorded to 'registered' sites [Section 8(1), National Monuments Amendment Act 1954] as follows:

The Commissioners shall establish and maintain a record of monuments and places where they believe there are monuments and the record shall be comprised of a list of monuments and such places and a map or maps showing each monument and such place in respect of each county in the State.

The Commissioners shall cause to be exhibited in a prescribed manner in each county the list and map or maps of the county drawn up and publish in a prescribed manner information about when and where the lists and maps may be consulted.

In addition, when the owner or occupier (not being the Commissioners) of a monument or place which has been recorded, or any person proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such monument or place, he shall give notice in writing of his proposal to carry out the work to the Commissioners and shall not, except in the case of urgent necessity and with the consent of the Commissioners, commence the work for a period of two months after having given the notice.

The National Monuments Amendment Act enacted in 2004 provides clarification in relation to the division of responsibilities between the Minister of Environment, Heritage and Local Government, Finance and Arts, Sports and Tourism together with the Commissioners of Public Works. The Minister of Environment, Heritage and Local Government will issue directions relating to archaeological works and will be advised by the National Monuments Section and the National Museum of Ireland. The Act gives discretion to the Minister of Environment, Heritage and Local Government to grant consent or issue directions in relation to road developments (Section 49 and 51) approved by An Bord Pleanála and/or in relation to the discovery of National Monuments.

14A. (1) The consent of the Minister under section 14 of this Act and any further consent or licence under any other provision of the National Monuments Acts 1930 to 2004 shall not be required where the works involved are connected with an approved road development.

14A. (2) Any works of an archaeological nature that are carried out in respect of an approved road development shall be carried out in accordance with the directions of the Minister, which directions shall be issued following consultation by the minister with the Director of the National Museum of Ireland.

Subsection 14A (4) Where a national monument has been discovered to which subsection (3) of this section relates, then the road authority carrying out the road development shall report the discovery to the Minister subject to subsection (7) of this section, and pending any directions by the Minister under paragraph (d) of this subsection, no works which would interfere with the monument shall be carried out, except works urgently required to secure its preservation carried out in accordance with such measures as may be specified by the Minister.

The Minister will consult with the Director of the National Museum of Ireland for a period not longer than 14 days before issuing further directions in relation to the national monument.

The Minister will not be restricted to archaeological considerations alone, but will also consider the wider public interest.

Local Government (Planning and Development) Act 2000

Structures of architectural, cultural, scientific, historical or archaeological interest are also protected under the Planning and Development Act, 2000.

This act provides for the inclusion of protected structures into the planning authorities' development plans and sets out statutory regulations regarding works affecting such structures. Under the new legislation, no distinction is made between buildings formerly classified under development plans as List 1 and List 2. Such buildings are now all regarded as 'protected structures'.

The act defines a 'protected structure' as follows:

- (a) a structure, or
- (b) a specified part of a structure,

which is included in a record of protected structures, and, where that record so indicates, includes any specified feature which is within the attendant grounds of the structure and which would not otherwise be included in this definition.

'Protection', in relation to a structure or part of a structure, includes conservation, preservation, and improvement compatible with maintaining the character and interest of the structure or part;

Part IV of the act deals with architectural heritage, and Section 57 deals specifically with works affecting the character of protected structures or proposed protected structures.

...the carrying out of works to a protected structure, or a proposed protected structure, shall be exempted development only if those works would not materially affect the character of—

- (a) the structure, or
- (b) any element of the structure which contributes to its special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest.

Section 58, subsection 4 states that:

Any person who, without lawful authority, causes damage to a protected structure or a proposed protected structure shall be guilty of an offence.

Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 1999

This Act provides for the establishment of a national inventory of architectural heritage and historic monuments.

Section 1 of the act defines "architectural heritage" as:

- (a) all structures and buildings together with their settings and attendant grounds, fixtures and fittings,
- (b) groups of such structures and buildings, and,
- (c) sites

which are of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest.

Section 2 of the Act states that the Minister (for Arts, Heritage, Gaeltacht and the Islands) shall establish the NIAH, determining its form and content, defining the categories of architectural heritage, and specifying to which category each entry belongs. The information contained within the inventory will be made available to planning authorities, having regard to the security and privacy of both property and persons involved.

Section 3 of the Act states that the Minister may appoint officers, who may in turn request access to premises listed in the inventory from the occupiers of these buildings. The officer is required to inform the occupier of the building why entry is necessary, and in the event of a refusal, can apply for a warrant to enter the premises.

Section 4 of the Act states that obstruction of an officer or a refusal to comply with requirements of entry will result in the owner or occupier being guilty of an offence.

Section 5 of the Act states that sanitary authorities who carry out works on a monument covered by this Act will as far as possible preserve the monument with the proviso that its condition is not a danger to any person or property, and that the sanitation authority will inform the Minister that the works have been carried out.

The provisions in the Act are in addition to and not a substitution for provisions of the National Monument Act (1930–94), and the protection of monuments in the National Monuments Act is extended to the monuments covered by the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act (1999).

APPENDIX 2 Geophysical Survey Report

GEOPHYSICAL SURVEY

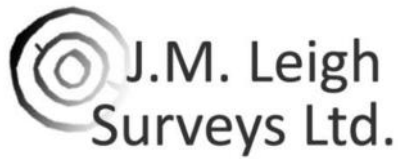
REPORT

Lissenhall East,
County Dublin

Date:
26/06/2018

Licence: **17R0185**

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Leixlip
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GEOPHYSICAL SURVEY SUMMARY SHEET
LISSENHALL EAST, COUNTY DUBLIN

Site Name	Lissenhall East, Dublin	Ref No.	18015
Townland	Lissenhall Great	Licence No.	17-R-0185
County	Dublin	Licence Holder	Joanna Leigh
ITM (centre)	E719076, N748543	Purpose	Pre-planning investigation
Client	Courtney Deery Archaeology & Cultural Heritage Consultants	Reference No.	N/A

Ground Conditions	Fieldwork was conducted over several months due to variations in ground cover. Fields 1, 2 and 3 were surveyed in February and comprised of harvested crop and short grass. Fields 4 and 5 were surveyed in June and comprised of young crop.
Survey Type	Detailed gradiometer survey totalling c.16 hectares

Summary of Results

The geophysical survey has identified responses indicative of an irregular rectilinear ditched enclosure, measuring c. 40m x 28m (located E719149 N74826). Further responses within the enclosure suggest internal features.

Possible further, plough damaged features have been identified in the vicinity of the enclosure, possibly representing clusters of pit-type features, although interpretation is tentative.

In one of the fields along the western extent of the application area, an isolated response indicative of a short curvilinear archaeological ditch has been recorded (E718895 N748421). Although no further responses indicative of archaeology was recorded here, the response has a shape and form of interest and is considered to be of archaeological potential.

Report Date	26/06/2018	Report Author	Joanna Leigh
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5. Survey Results	4
6. Conclusion	6

Geophysical Survey Report

Lissenhall East, County Dublin

1 Introduction

- 1.1 A geophysical survey has been conducted by J. M. Leigh Surveys Ltd. at a site in the townland of Lissenhall Great, to the north of Swords, Co. Dublin.
- 1.2 The survey forms part of a wider, pre-planning archaeological investigation by Courtney Deery Heritage Archaeology & Cultural Heritage Consultants.
- 1.3 Several fields (Fields 1-5) have been highlighted for geophysical survey as part of the archaeological investigation for the Local Area Plan for the proposed Luas extension to facilitate Dublin Airport. The fields are contained within a parcel of land between the M1 motorway and the R132 in Seatown, north of Swords. The location of the geophysical survey is presented in Figure 1 at a scale of 1:5,000.
- 1.4 There are no recorded monuments within the proposed application area, however, recorded monuments in the vicinity include an enclosure (DU012:012001), located to the immediate east, and a recorded Ritual Site (DU012:011) located to the immediate north. Further monuments of potential interest are listed below.

RMP No.	Monument	Townland	ITM (E)	ITM (N)
DU011-130	Ring-ditch	LISSENHALL LITTLE	718510	749013
DU011-131	Enclosure	LISSENHALL LITTLE	718518	748741
DU012-011	Ritual site - holy well	LISSENHALL LITTLE	719019	748890
DU012-012001	Enclosure	LISSENHALL GREAT	719313	748459
DU012-012002	Field system	LISSENHALL GREAT	719428	748458
DU012-015	Enclosure	LISSENHALL GREAT	719207	748086

- 1.5 The main aim of the survey was to locate any geophysical responses that may represent the remains of unknown archaeological features within the pre-defined geophysical survey areas. Detailed gradiometer survey was conducted in available areas, under licence 17R0185 issued by the Department of Culture, Heritage and the Gaeltacht.

2 Survey ground conditions (Figure 1)

- 2.1 Ground conditions were varied across the site. Fieldwork was conducted over a period of several months to facilitate the fieldwork. Fields 1-3 were surveyed in February 2018 and Fields 3 and 4 were surveyed in June 2018.
- 2.2 Fields 1 and 2 comprised of harvested crop at the time of survey. Field 3 comprised of short grass. Fields 4 and 5 comprised of young crop.
- 2.3 An area to the north of the survey areas, adjacent to the motorway roundabout, was not suitable for survey. This was inaccessible with overgrown vegetation and modern material and debris. No geophysical survey could be undertaken in this area.

3 Survey Methodology

- 3.1 A detailed gradiometer survey detects subtle variations in the local magnetic field and measurements are recorded in nano-Tesla (nT). Some archaeological features such as ditches, large pits and fired features have an enhanced magnetic signal and can be detected through recorded survey.
- 3.2 Data was collected with a Bartington Grad 601-2 instrument. This is a specifically designed gradiometer for use in archaeological prospection. The gradiometer operates with a dual sensor capacity making survey fast and effective.
- 3.3 The instrument is calibrated in the field to ensure a constant high quality of data. Extremely sensitive, these instruments can detect variations in soil magnetism to 0.01nT, affording diverse application throughout a variety of archaeological, soil morphological and geological conditions.
- 3.4 All data was collected in 'zigzag' traverses. Grid orientation was varied throughout the application area to facilitate data collection.
- 3.5 Data was collected with a sample interval of 0.25m and a traverse interval of 1m, providing 6400 readings per 40m x 40m grid. The survey grid was set-out using a GPS VRS unit. Survey tie-in information is available upon request.
- 3.6 The survey methodology, data presentation and report content adheres to the European Archaeological Council (EAC) (2015) '*Guidelines for the use of Geophysics in Archaeology*'.

4 Data display

- 4.1 Figures 2 and 3 present an overall summary greyscale image and accompanying interpretation diagram at a scale of 1:2,500 @A3. Larger scale greyscale images and interpretation drawings are presented in Figures 4-7, all at a scale of 1:1,500.
- 4.2 Isolated ferrous responses highlighted in the interpretation diagram most likely represent modern ferrous litter and debris and are not of archaeological interest. These are not discussed in the text unless considered relevant.
- 4.3 Letters in parenthesis in the text refer to specific responses highlighted in the interpretation diagrams.
- 4.4 The raw gradiometer data is presented in archive format in Appendix A1.01 and A1.02. The raw data is displayed as a greyscale image and xy-trace plot, both at a scale of 1:750@A0. The archive plots are used to aid interpretation of the results and are for reference only. The archive plots are available as PDF images upon request.
- 4.5 The display formats referred to above and the interpretation categories are discussed in the summary technical information section at the end of this report.

5 Survey Results

Fields 1-3 (Figures 4 & 5)

- 5.1 Fields 1-3 have a general low level of background variation ($\pm 1\text{nT}$). Some responses of potential interest were recorded.
- 5.2 In Field 1 broad responses (A) in the north-west of the field were recorded. These have a magnetic signature similar to large pit-type responses. However, interpretation is cautious. The responses are at the edge of the field where modern ground disturbance was noted. It is possible that (A) represents more recent activity.
- 5.3 As with Field 1, Field 2 comprised of numerous modern ferrous responses. A fragmented series of responses (B) in the east of the field may be of interest. This may represent the remains of an archaeological ditch feature. However, no clear pattern is evident and interpretation is tentative. It is equally possible that this represents more recent agricultural activity in the field.
- 5.4 Field 3 comprised of significant magnetic disturbance along the northern and eastern extents of the field. However, a clear response (C) was recorded. Although no clear pattern is evident, the shape and form of the response is considered to be of archaeological potential. It is possible that the remains of a short curvilinear ditched feature have been recorded.

Fields 4 and 5 (Figures 6 & 7)

- 5.5 Field 4 has a low level of background variation ($\pm 0.5\text{nT}$) with few responses of interest to note. A cluster of amorphous responses (D) were recorded in the east of the data set. The responses have no clear form and may represent modern ground disturbance. Nevertheless, an archaeological interpretation must also be considered. It is possible that large pit-type features are represented here.
- 5.6 Field 5 has numerous modern ferrous responses and areas of modern magnetic disturbance. Nevertheless, clear responses of interest have been identified.
- 5.7 A series of responses (E) form a clear pattern indicative of archaeology. The responses suggest the location of an irregular rectilinear enclosure. Magnetic disturbance from an electricity pole to the immediate south of the probable enclosure obscures some of the responses, however the extents have been identified and measure c.40m east to west and c.28m north to south.
- 5.8 Responses within the enclosure (E) suggest internal archaeological features are present.

- 5.9 To the north of (E) there is a cluster of responses (F). Although no clear pattern is evident, it is possible that a cluster of pit-type features, perhaps associated with (E) have been recorded.
- 5.10 Extending from (E) are faint linear responses (G) and trends. It is possible that the remains of an associated field system have been recorded. This is speculative but must be considered.
- 5.11 To the south-east of (E), another cluster of responses (H) have been identified. These may represent more recent activity. However, an archaeological interpretation must be considered and it is possible that fragmented plough damaged remains of features associated with (E) have been recorded.
- 5.12 Further isolated responses (I) are located along the eastern extent of Field 5. The archaeological interpretation of these is less clear. The responses are located in close proximity to the adjacent field boundary and may represent modern disturbance. Nevertheless, it is possible that isolated pit-type features are represented here. This interpretation is tentative but must be considered.

6 Conclusion

- 6.1 The geophysical survey has identified responses indicative of an irregular rectilinear ditched enclosure, measuring c. 40m x 28m (located E719149 N74826). Further responses within the enclosure suggest internal features.
- 6.2 Possible further, plough damaged features have been identified in the vicinity of the enclosure, possibly representing clusters of pit-type features, although interpretation is tentative.
- 6.3 In one of the fields along the western extent of the application area, an isolated response indicative of a short curvilinear archaeological ditch has been recorded (E718895 N748421). Although no further responses indicative of archaeology was recorded here, the response has a shape and form of interest and is considered to be of archaeological potential.
- 6.4 Consultation with a licensed archaeologist and with the Department of Culture, Heritage and the Gaeltacht is recommended to establish if any additional archaeological works are required.

Technical Information Section

Instrumentation & Methodology

Detailed Gradiometer Survey

This is conducted to clearly define any responses detected during scanning, or can be applied as a stand-alone methodology. Detailed survey is often applied with a sample interval of 0.25m and a traverse interval of 1m. This allows detection of potential archaeological responses. Data is collected in grids 40m x 40m, and data is displayed accordingly. A more detailed survey methodology may be applied where archaeological remains are thought likely. A survey with a grid size of 10m x 10m and a traverse interval of 0.5m will provide a data set with high resolution.



Bartington GRAD 601-2

The Bartington Grad 601-2 instrument is a specifically designed gradiometer for use in archaeological prospection. The gradiometer operates with a dual sensor capacity making survey very fast and effective. The sensors have a separation of 1m allowing greater sensitivity.

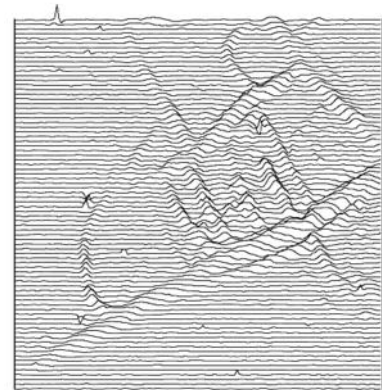
Frequent realignment of the instruments and zero drift correction; ensure a constant high quality of data. Extremely sensitive, these instruments can detect variations in soil magnetism to 0.1nT, affording diverse application throughout a variety of archaeological, soil morphological and geological conditions.



Gradiometer Data Display & Presentation

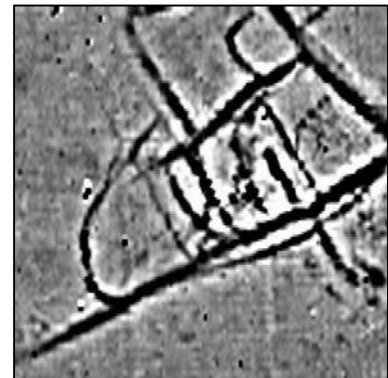
XY Trace

The data are presented as a series of linear traces, enabling a semi-profile display of the respective anomalies along the X and Y-axes. This display option is essential for distinguishing between modern ferrous materials (buried metal debris) and potential archaeological responses. The XY trace plot provides a linear display of the magnitude of the response within a given data set.



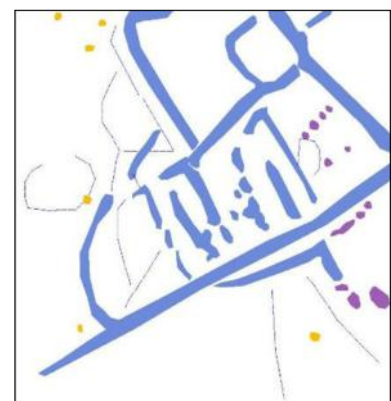
Greyscale*

As with dot density plots, the greyscale format assigns a cell to each datum according to its location on the grid. The display of each data point is conducted at very fine increments, allowing the full range of values to be displayed within the given data set. This display method also enables the identification of discrete responses that may be at the limits of instrument detection. In the summary diagrams processed, interpolated data is presented. Raw un-interpolated data is presented in the archive drawings along with the xy-trace plots.



Interpretation

An interpretation of the data is made using many of the plots presented in the final report, in addition to examination of the raw and processed data. The project managers' knowledge and experience allows a detailed interpretation of the survey results with respect to archaeological potential.



**XY Trace and raw greyscale plots are presented in archive form for display of the raw survey data. Summary greyscale images of the interpolated data are included for presentation purposes and to assist interpretation.*

Glossary of Interpretation Terms

Archaeology

This category refers to responses which are interpreted as of clear archaeological potential, and are supported by further archaeological evidence such as aerial photography or excavation. The term is generally associated with significant concentrations of former settlement, such as ditched enclosures, storage pits and associated features.

? Archaeology

This term corresponds to anomalies that display typical archaeological patterns where no record of comparative archaeological evidence is available. In some cases, it may prove difficult to distinguish between these and evidence of more recent activity also visible in the data.

? Industrial

Such anomalies generally possess a strong magnetic response and may equate with archaeological features such as kilns, furnaces, concentrations of fired debris and associated industrial material.

Area of Increased Magnetic Response

These responses often lack any distinctive archaeological form, and it is therefore difficult to assign any specific interpretation. The resulting responses are site specific, possibly associated with concentrations of archaeological debris or more recent disturbance to underlying archaeological features.

Trend

This category refers to low-level magnetic responses barely visible above the magnetic background of the soil. Interpretation is tentative, as these anomalies are often at the limits of instrument detection.

Ploughing/Ridge & Furrow

Visible as a series of linear responses, these anomalies equate with recent or archaeological cultivation activity.

? Natural

A broad response resulting from localised natural variations in the magnetic background of the subsoil; presenting as broad amorphous responses most likely resulting from geological features.

Ferrous Response

These anomalies exhibit a typically strong magnetic response, often referred to as 'iron spikes,' and are the result of modern metal debris located within the topsoil.

Area of Magnetic Disturbance

This term refers to large-scale magnetic interference from existing services or structures. The extent of this interference may in some cases obscure anomalies of potential archaeological interest.

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National Soil Survey of Ireland (1980) *General soil map second edition (1:575,000)*. An Foras Taluntais.


List of Figures


Figure	Description	Paper Size	Scale
Figure 1	Site & Survey Location Diagram	A3P	1:5,000
Figure 2	Overall summary greyscale image	A3P	1:2,500
Figure 3	Overall summary interpretation image	A3P	1:2,500
Figure 4	Fields 1-3: Greyscale image	A3P	1:1,500
Figure 5	Fields 1-3: Interpretation image	A3P	1:1,500
Figure 6	Fields 4-5: Greyscale image	A3P	1:1,500
Figure 7	Fields 4-5: Interpretation image	A3P	1:1,500

Archive Data Supplied as a PDF Upon Request

A1.01	Raw data XY-Trace Plot	A0	1:750
A1.02	Raw data Greyscale Image	A0	1:750



 Detailed gradiometer survey

 Not suitable for survey
Modern disturbance

0 metres 200

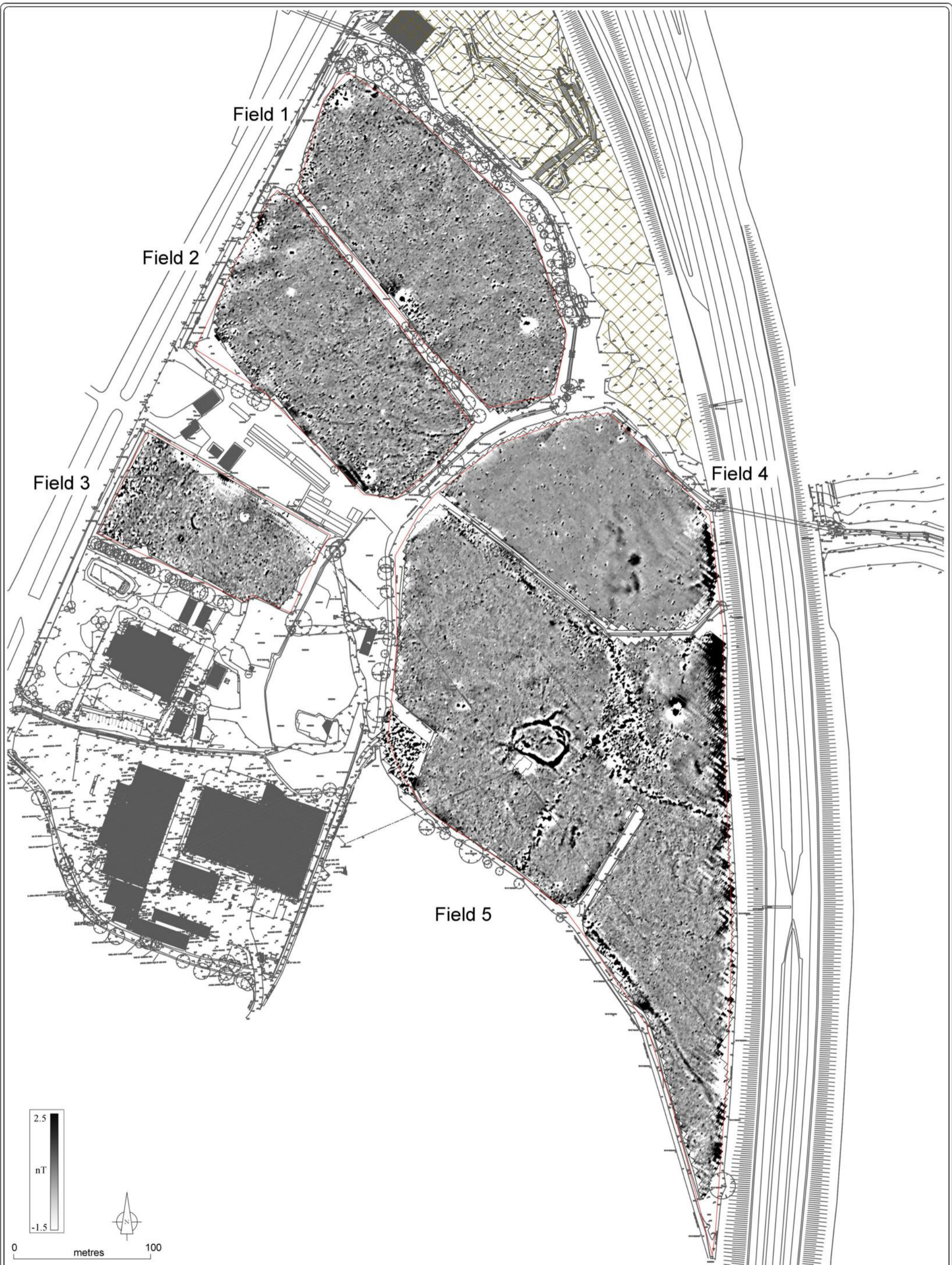
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Killeen Group Holdings

Project:
Geophysical Survey
Lissenhall East,
County Dublin

Title:
Site & Survey Location

J.M.Leigh
surveys
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Scale @ A4: 1:5,000
Figure: 1
Licence No.: 17R0185
Issue Date: 26.06.2018



Client:
Killeen Group Holdings

Project:
Geophysical Survey
Lissenhall East,
County Dublin

Title:
Overall Summary
Greyscale Image

J.M. Leigh
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Scale @ A3: 1:2,500
Figure: 2
Licence No.: 17R0185
Issue Date: 26.06.2018



- ?Archaeology - Enclosure ditches
- ?Archaeology
- Trend
- Magnetic disturbance
- Modern Ferrous response

0 metres 100

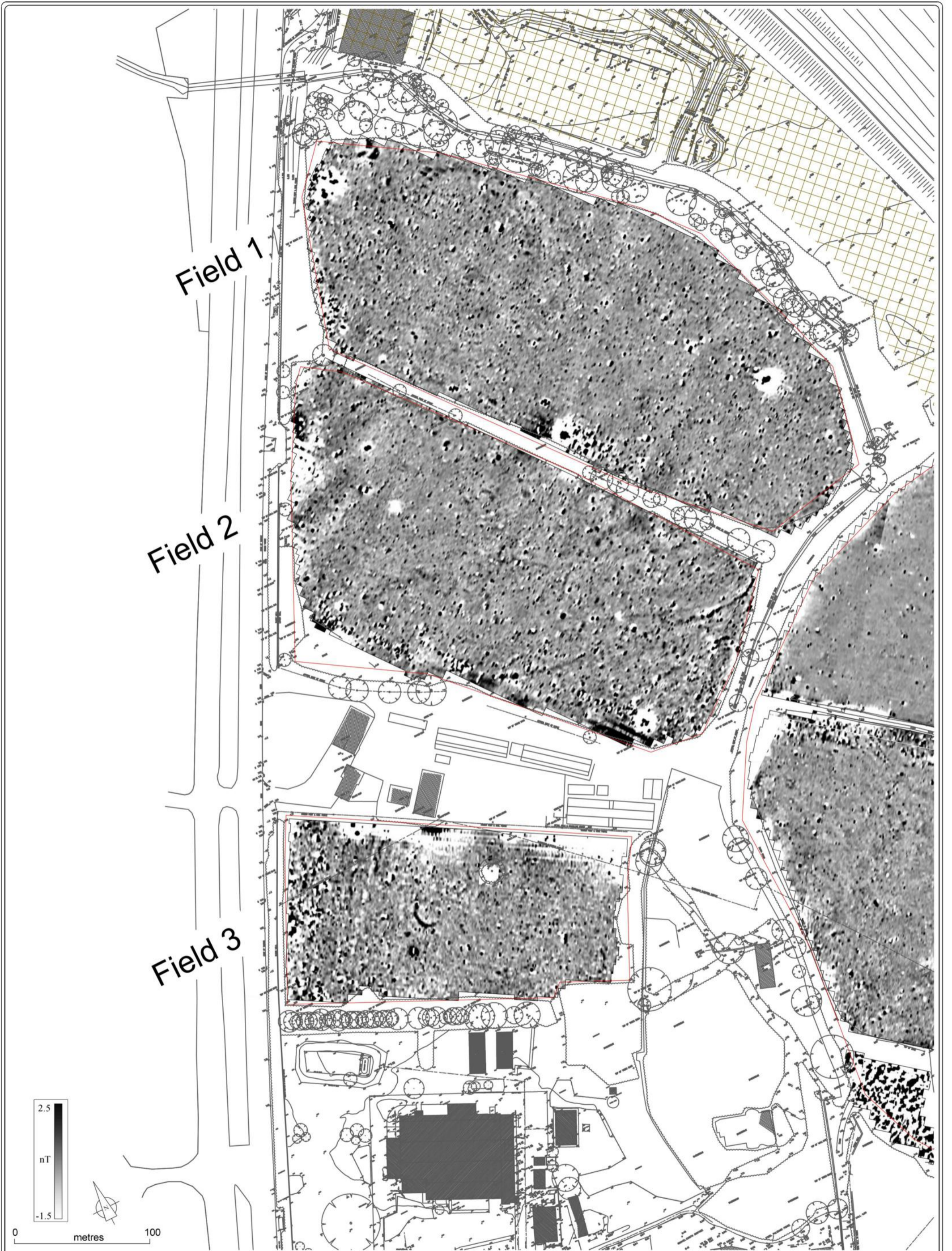
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Project:
Geophysical Survey
Lissenhall East,
County Dublin

Title:
Overall Summary
Interpretation

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Figure: 3
Licence No.: 17R0185
Issue Date: 26.06.2018



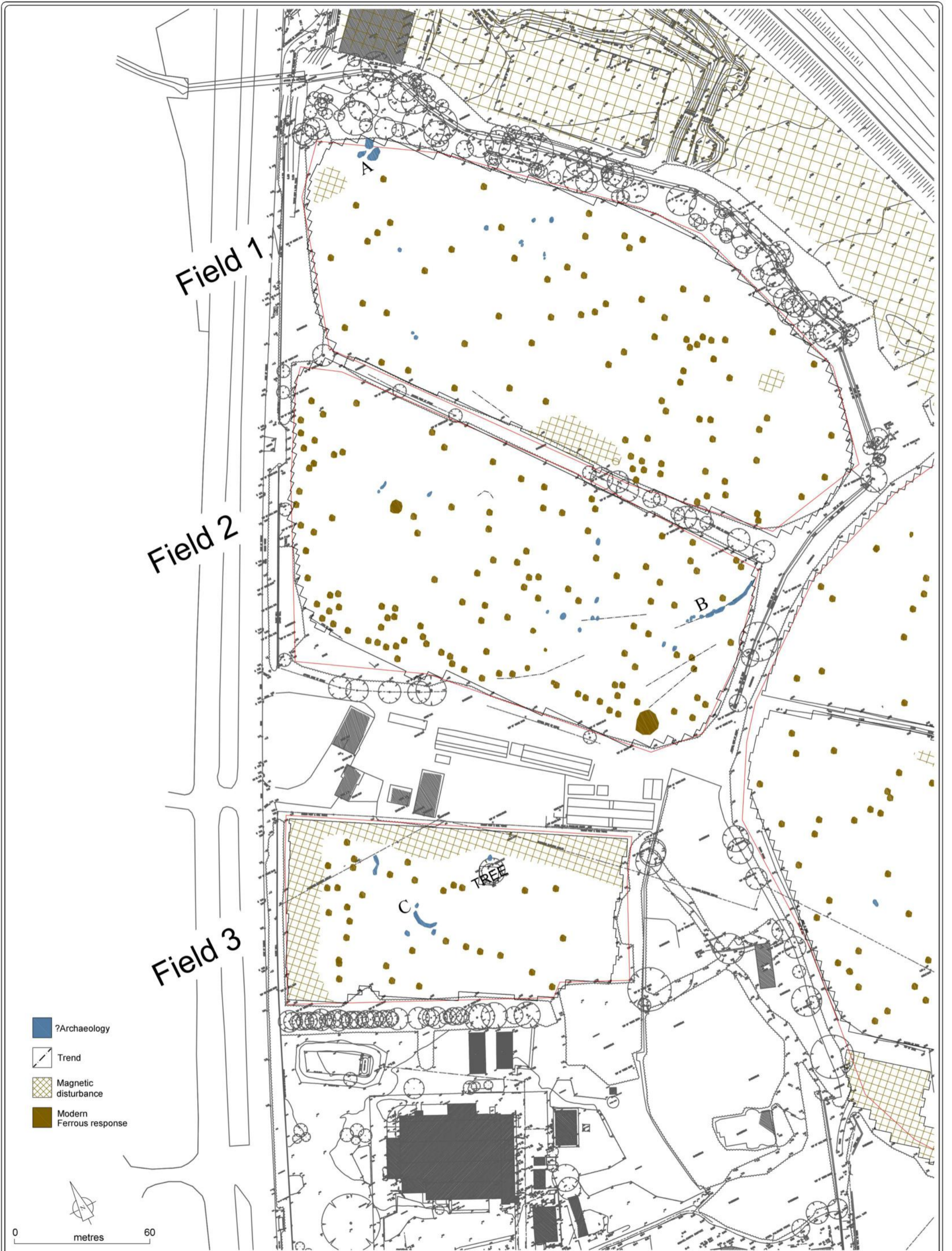
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Project:
Geophysical Survey
Lissenhall East,
County Dublin

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Summary Greyscale

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Scale @ A3: 1:1,500
Figure: 4
Licence No.: 17R0185
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Project:
Geophysical Survey
Lissenhall East,
County Dublin

Title:
Fields 1, 2 and 3:
Summary Interpretation

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Issue Date: 26.06.2018



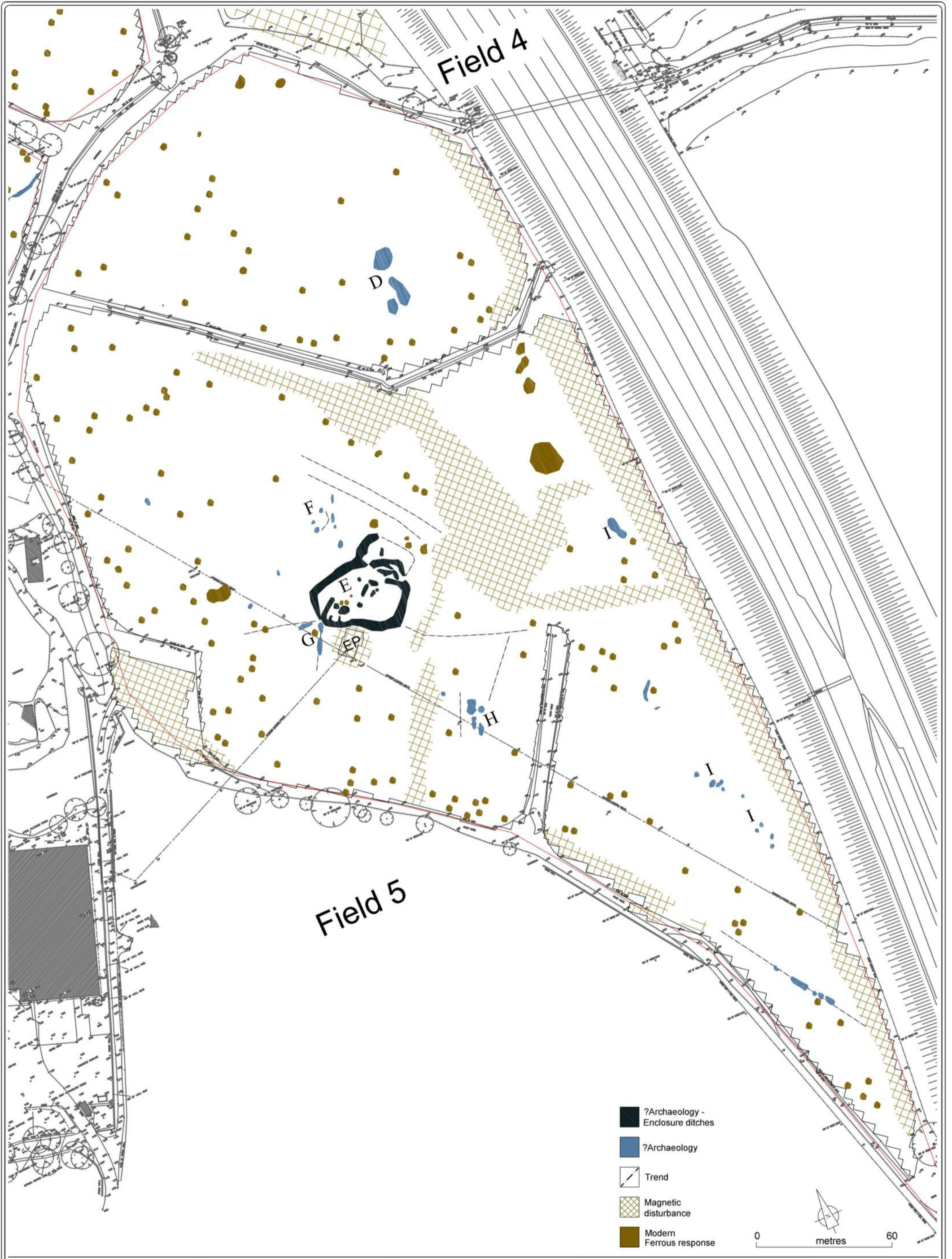
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Geophysical Survey
Lissenhall East,
County Dublin

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Issue Date: 26.06.2018



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Killeen Group Holdings

Project:
Geophysical Survey
Lissenhall East,
County Dublin

Title:
Fields 4 and 5:
Summary Interpretation

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Appendices

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