N9/N10 KILCULLEN TO WATERFORD SCHEME, PHASE 4 – KNOCKTOPHER TO POWERSTOWN

Ministerial Direction Scheme Reference No.	A032
Registration No.	E3468
Site Name	AR086, Danesfort 9
Townland	Danesfort
County	Kilkenny
Excavation Director	Richard Jennings
NGR	253089 148345
Chainage	36903

FINAL REPORT

ON BEHALF OF KILKENNY COUNTY COUNCIL

FEBRUARY 2011

IAC Irish Archaeological Consultancy

PROJECT DETAILS

Project	N9/N10 Kilcullen to Waterford Scheme, Phase 4 – Knocktopher to Powerstown
Ministerial Direction Reference No.	A032
Excavation Registration Number	E3468
Excavation Director	Richard Jennings
Senior Archaeologist	Tim Coughlan
Consultant	Irish Archaeological Consultancy Ltd, 120b Greenpark Road, Bray, Co. Wicklow
Client	Kilkenny County Council
Site Name	AR086, Danesfort 9
Site Type	Prehistoric structure
Townland(s)	Danesfort
Parish	Danesfort
County	Kilkenny
NGR (easting)	253089
NGR (northing)	148345
Chainage	36903
Height OD (m)	64.878
RMP No.	N/A
Excavation Start Date	5–12 June 2007
Project Duration	20 March 2007–18 April 2008
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This final report has been prepared by Irish Archaeological Consultancy Ltd in compliance with the directions issued to Kilkenny County Council by the Minister for Environment, Heritage and Local Government under Section 14A (2) of the National Monuments Acts 1930–2004 and the terms of the Contract between Kilkenny County Council and Irish Archaeological Consultancy Ltd.

CONSULTING ENGINEERS – N9/N10 KILKENNY CONSULT

James Eogan (NRA Senior Archaeologist), Ed Danaher (NRA Archaeologist) and Bernice Kelly (NRA Assistant Archaeologist)

Project Liaison Officer, Kilkenny Co. Council – Joe Gannon and Lisa Mulcahy

NATIONAL MONUMENTS, DOEHLG

Archaeologist – Martin Reid

IRISH ANTIQUITIES DIVISION, NATIONAL MUSEUM OF IRELAND

Assistant Keeper – Nessa O'Connor

ABSTRACT

Irish Archaeological Consultancy Ltd (IAC), funded by the National Roads Authority (NRA) through Kilkenny County Council, undertook an excavation at the site of AR086, Danesfort 9 along the proposed N9/N10 Kilcullen to Waterford Scheme, Phase 4 – Knocktopher to Powerstown (Figure 1). The following report describes the results of archaeological excavation at that site. The area was fully excavated by Richard Jennings under Ministerial Direction A032 and Excavation Registration Number E3468 issued by the DOEHLG in consultation with the National Museum of Ireland for IAC. The fieldwork took place between 5 and 11 June 2007.

The site consisted of a temporary prehistoric shelter or the ephemeral remains of a domestic dwelling. The extant structural features comprised a short curvilinear slot-trench that may have held upright timbers and two postholes that may have supported posts for a possible lean-to-type structure. A single pit was discovered 2.5m to the north-east of the structure. No finds were recovered.

Charcoal was examined from the site and the results from the slot trench and postholes are both dominated by oak, which indicates that this was the species used for construction. A sample of oak charcoal from posthole fill C12 was sent for radiocarbon dating and returned a 2 sigma calibrated date of 2874–2632BC (UBA 11002) placing the site in the late Neolithic period.

Danesfort 9 is an important site locally and although the archaeological remains are small they are significant in assisting our understanding of a developing landscape from the Neolithic to the Bronze Age. This is particularly relevant given the presence of middle and late Neolithic, Beaker, middle and late Bronze Age, and Iron Age evidence in the immediate vicinity of the site. The Danesfort area is also rich in early medieval and medieval settlement and the Neolithic activity at Danesfort 9, Danesfort 7 and Rathclogh 2 thus represents the foundation for all later activity. It is likely that the area was not intensively settled or farmed in the Neolithic, possibly due to heavy soils, and the temporary structure at Danesfort 9 is evidence of this.

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1 INTRODUCTION

1.1 General

This report presents the results of the archaeological excavation of Danesfort 9, AR086 (Figure 1), in the townland of Danesfort undertaken by Richard Jennings of IAC, on behalf of Kilkenny County Council and the NRA, in accordance with the Code of Practice between the NRA and the Minister for Arts, Heritage, Gaeltacht and the Islands. It was carried out as part of the archaeological mitigation programme of the N9/N10 Kilcullen to Waterford Road Scheme, Phase 4, which extends between Knocktopher in Co. Kilkenny to Powerstown in Co. Carlow. The excavation was undertaken to offset the adverse impact of road construction on known and potential subsoil archaeological remains in order to preserve the site by record.

The site measured 253m^2 and was first identified during testing carried out between 30 January and 03 March 2006 by Melanie McQuade (E3882) for Margaret Gowen & Co. Ltd. on behalf of the National Roads Authority. Danesfort 9 was excavated between 5 and 11 June 2007 with a team of one director and four assistant archaeologists.

1.2 The Development

For the purposes of construction, the N9/N10 Kilcullen to Waterford Road Scheme has been divided into separate sections, known as Phases 1–4. Phase 2 of the scheme extends from the tie-in to the Waterford City Bypass at Dunkitt, to Knocktopher in Co. Kilkenny (Ch. 2+000–Ch. 25+400). Phase 4 continues from Knocktopher to Powerstown in Co. Carlow (Ch. 25+400–Ch. 76+000) and includes the Kilkenny Link Road.

The roadway of the entire scheme includes approximately 64km of mainline high quality dual carriageway and 6.2km of the Kilkenny Link Road, which will connect the road development to the Kilkenny Ring Road Extension. The road development requires the realignment and modification of existing national, regional and local roads where the mainline intersects them. It requires the acquisition of 305 hectares of land for its construction. A further link road will connect the scheme to Paulstown in County Kilkenny, while six new grade separated junctions and three roundabouts are part of the road development.

1.3 Archaeological Requirements

The archaeological requirements for the N9/N10 Kilcullen to Waterford Road Scheme, Phase 4: Knocktopher to Powerstown, are outlined in the Archaeological Directions issued to Kilkenny County Council by the Minister for Environment, Heritage and Local Government under Section 14A (2) of the National Monuments Acts 1930–2004 and in the terms of the contract between Kilkenny County Council and Irish Archaeological Consultancy Ltd. These instructions form the basis of all archaeological works undertaken for this development. The archaeological excavation works under this contract are located between the townlands of Knocktopher, Co. Kilkenny, and Powerstown, Co. Carlow.

The proposed N9/N10 was subjected to an Environmental Impact Assessment, the archaeology and cultural history section of which was carried out by Valerie J. Keeley Ltd and published in February 2005. The Record of Monuments and Places, the Site Monument Record, Topographical files, aerial photography, the Kilkenny and Carlow County Archaeological Urban Survey, and literary sources were all consulted. Two phases of geophysical survey were also conducted by Target (post-EIS geophysics carried out by ArchaeoPhysica) and an aerial survey was carried out by Margaret Gowen & Co. Ltd. As a result of the paper survey, field inspections and geophysical

survey, 35 sites were recorded in proximity to this section of the overall route alignment.

A previous archaeological assessment of Phase 2 of the scheme (test trenching conducted by Margaret Gowen & Co. Ltd. in 2006) extended into the lands acquired for Phase 4 to a point at Ch. 37+100 in the townland of Rathclogh, Co. Kilkenny. Thirty-four archaeological sites were identified within this area between Knocktopher and Rathclogh and subsequently excavated by Irish Archaeological Consultancy Ltd. as part of this archaeological contract.

Advance archaeological testing of the area between Rathclogh (Ch. 37+100) and Powerstown (Ch. 76+000) was completed by IAC during March–May 2007 and excavation of the sites identified during this process was also conducted by IAC between August 2007 and April 2008.

1.4 Methodology

The methodology adopted was in accordance with the approved Method Statement. The topsoil was removed to the interface between natural and topsoil using a 20 tonne mechanical excavator equipped with a flat toothless bucket under strict archaeological supervision. The remaining topsoil was removed by the archaeological team with the use of shovels, hoes and trowels in order to expose and identify the archaeological remains. A site grid was set up at 10m intervals and was subsequently calibrated to the national grid using GPS survey equipment.

All archaeological features were fully excavated by hand and recorded on *pro forma* record sheets using a single context recording system best suited to rural environment, with multi context plans and sections being recorded at a scale of 1:50, 1:20 or 1:10 as appropriate.

A complete photographic record was maintained throughout the excavation. Digital photographs were taken of all features and of work in progress. An environmental strategy was devised at the beginning of the excavation based on IAC in-house post-excavation and site methodologies and guidelines. Features exhibiting large amounts of carbonised material were the primary targets. No artefacts were uncovered on site. All archive is currently stored in IAC's facility in Lismore, Co Waterford and will ultimately be deposited with the National Museum of Ireland.

All dating of samples from the site was carried out by means of AMS (Accelerator Mass Spectrometry) Radiocarbon Dating of identified and recommended wood charcoal samples. All calibrated radiocarbon dates in this report are quoted to two Sigma.

All excavation and post excavation works were carried out in accordance with the relevant approvals and in consultation and agreement with the National Roads Authority (NRA) Project Archaeologist, the National Monuments Section of the DoEHLG and the National Museum of Ireland. Where necessary licences to alter and export archaeological objects were sought from the National Museum of Ireland.

References to other sites excavated as part of the N9/N10 Phase 4: Knocktopher to Powerstown are referenced throughout this report only by their site name e.g. Paulstown 1. A list of these sites and details including director's name and National Monuments Excavation Reference Number can be referenced in Appendix 4.

Final Report Date Ranges

The following date ranges for Irish prehistory and medieval periods are used for all final reports for the N9/N10 Phase 4: Knocktopher to Powerstown excavations.

Mesolithic: 7000–4000 BC
Neolithic: 4000–2500 BC
Early Bronze Age: 2500–1700 BC
Middle Bronze Age: 1700–1200 BC
Late Bronze Age: 1200–800 BC
Iron Age: 800 BC–AD 500
Early medieval period: AD 500–1100
Medieval period: AD 1100–1600
Post-medieval: AD 1600–1800

Source:
Carlin, N., Clarke, L. & Walsh, F. 2008 *The M4 Kinnegad-Enfield-Kilcock Motorway: The Archaeology of Life and Death on the Boyne Floodplain.* NRA Monograph Series No. 2, Wordwell, Bray.

2 EXCAVATION RESULTS

The remnants of a prehistoric structure were found under pastureland in a field with a gentle southerly aspect (Plate 1). The field also dipped down to the north-east into a shallow basin where a natural pond and related prehistoric archaeological features were discovered (Danesfort 10 and 11). The low-lying nature of the surrounding landscape meant that the site had prominent views of the Blackstairs Mountains 30km to the east and Slievenamon 30km to the south-west. The pond probably represented the nearest water source to the site, although it is not known if the two areas were contemporary. However, during the excavations the basin regularly accumulated surface water after periods of rainfall and it was likely to have done so in the past. The site was located 2.2km due west of the River Nore, the major river in the region. It was 280m north-east of a group of Bronze Age pits at Danesfort 7, 480m north-east of further prehistoric activity at Danesfort 6 and 730m north-east of a Bronze Age settlement at Danesfort 5. It was also within 1km of three RMP sites but none of them are thought to be prehistoric (Figure 2).

2.1 Phase 1 Natural Drift Geology

Context	Fill of	L(m)	W(m)	D(m)	Basic Description	Interpretation
C2	N/A				Light greyish yellow, compact sandy clay.	Subsoil

2.2 Phase 2 Late Neolithic Activity

2.2.1 Possible Small Structure

2.2.1.1 Slot-trench

Context	Fill of	L(m)	W(m)	D(m)	Basic Description	Interpretation
C6	C7	3.20	0.40	0.27	Greyish brown sandy silt	Fill of slot-trench
C7	N/A	3.20	0.40	0.27	Linear cut	Cut of slot-trench

Finds: None

2.2.1.2 Three postholes

Context	Fill of	L(m)	W(m)	D(m)	Basic Description	Interpretation
C3	C4	0.18	0.17	0.05	Greyish brown silty sand	Fill of poss. posthole
C4	N/A	0.18	0.17	0.05	Oval shaped cut	Cut of poss. posthole
C11	C14	0.35	0.30	0.17	Light brown silty sand	Fill of poss. posthole
C12	C13	0.38	0.20	0.20	Light greyish brown silty sand	Fill of poss. posthole
C13	N/A	0.35	0.30	0.17	Sub-oval cut	Cut of poss. posthole
C14	N/A	0.35	0.30	0.17	Oval shaped cut	Cut of poss. posthole

Finds: None

2.2.1.3 Discussion

The main components of the structure were a curvilinear slot-trench and three possible postholes (Plate 2; Figure 4). The slot-trench, C7, contained four depressions which may have served as footings for wooden posts. Of the three associated postholes, C13 and C14 were probably part of the construction as they were found within the arc of the curving slot-trench and may have held timber supports. C4 was shallower and located to the south-east of the slot-trench. No hearth was found within the structure.

Charcoal was retrieved from slot trench fill C6 and possible posthole fill C12 during post-excavation soil flotation. This was subsequently identified to species. Fragments of hazel charcoal (*Corylus avellana*) and oak charcoal (*Quercus* sp.) were identified from fill C6 (O' Donnell, Appendix 2.1). Fragments of oak charcoal (*Quercus* sp.)

were also identified from fill C12. Both fills were dominated by oak, which indicates that this was the species may have been used for construction. Oak is a very tough and durable wood, and was favoured in prehistoric Ireland for posts (O' Donnell, Appendix 2.1).

A small fragment (0.1g) of oak was chosen from fill C12 for AMS dating and returned a result of 4149±26 (UBA 11002). The 2 Sigma calibrated result for this was 2874–2631BC (QUB, Appendix 2.3) dating this feature to the late Neolithic period.

2.2.2 Pit

Context	Fill of	L(m)	W(m)	D(m)	Basic Description	Interpretation
C5	C10	0.53	1.2	0.14	Yellowish brown silty sand	Upper fill
C8	C10	1.28	1.60	0.33	Greyish brown sandy silt, charcoal rich	Middle fill
C9	C10	1.98	1.70	0.36	Reddish light brown silty sand	Lower fill
C10	N/A	1.72	1.40	0.36	Irregular cut	Cut of pit

Finds: None

This pit, C10, was found 2.5m north-east of the structure and contained a layer rich in charcoal (Figure 5). Its exact relationship with the structure is unknown, but it may have functioned as an external hearth as its primary fill had evidence for scorching.

Charcoal was retrieved from pit fill C8 during post-excavation soil flotation. This was subsequently identified to species. Fragments of oak charcoal (*Quercus* sp.) were identified (O' Donnell, Appendix 2.1).

2.3 Phase 3 Topsoil and Ploughsoil

Context	Fill of	L(m)	W(m)	D(m)	Basic Description	Interpretation
C1	N/A				Dark grey, blackish, loose silty sand.	Topsoil

Finds: None

The topsoil consisted of a loose, silty sand.

3 SYNTHESIS

The synthesis presents the combined results of all of the archaeological analysis carried out at Danesfort 9. This includes the analysis of the physical and archaeological landscape, the compilation of information gathered during research into the site type, date, and function, and the results of the excavation and specialist analysis of samples taken during the course of on-site works.

3.1 Landscape Setting – compiled by Michelle Brick

3.1.1 The General Landscape

The topography of the region through which the route passes is generally flat with an average height of 70m O.D. The southern periphery of the route is bordered by Kilmacoliver (261m) and Carricktriss Gorse (314m), with Slevenamon (721m) further west. The Slieveardagh hills (340m) are visible on the western horizon in the south of the route and with the exception of Knockadrina Hill (140m), the enclosed landscape is made up of minor undulations. In the centre of the route Freestone Hill (130m) and Knocknagappoge (334m) further north are the significant uplands. A number of hills and mountains are visible in the distance to the east and west of this area of the landscape but the topography remains generally flat. To the north the Castlecomer Plateau influences a rise in the overall topography of the region. This expanse of terrain stretches along the north-east margins of Kilkenny, crosses the county border into Carlow and stretches northwards into Laois. This plateau consists of a variety of hills and peaks including Mountnugent Upper (334m), Baunreagh (310m), Knockbaun (296m), Brennan's Hill (326m) and Fossy Mountain (330m). These hills contain seams of anthracite coal as a result of millions of years of compression, and consequently Shales and Sandstones were formed which are evident throughout the plateau. Mining in the region began in the 17th century, continued for over 300 years and it is for what Castlecomer is best known. According to the Environmental Protection Agency soil maps of Ireland, the underlying bedrock of the entire region primarily consists of Carboniferous Limestone. However there is also a small amount of surface bedrock, sands, gravels, shales and sandstone Tills present along the route. The soil cover of the region is primarily composed of Grey Brown Podzolics, Renzinas and Lithosols. Additional soil types also present along the route include Brown Earths, surface Water Gleys and Ground Water Gleys.

The prevailing water courses within the landscape of the N9/N10 Phase 4 are the Rivers Nore and Barrow. The River Nore rises on the east slopes of the Devil's Bit in Co. Tipperary and flows eastwards through Borris-in-Ossory and then south through Co. Kilkenny, passing through the towns of Durrow (Laois), Ballyragget, Kilkenny, Bennettsbridge and Thomastown to join the River Barrow upstream of New Ross, Co. Wexford. It is 140 kilometres long and drains a total catchment of 1572 square kilometers and runs through the central and southern sections of the route. In the south of the route three main tributaries of the River Nore are evident. The Kings River flows east through Callan and Kells. It is joined by the River Glory which meanders on a north-south axis towards the western margins of the route landscape and the Little Arrigle River flows along the southern fringes. These rivers are flanked by low-lying valleys that are characterised by wet, marshy land. The condition of the soil improves further north beyond the King's River where the influence of these waterways declines. In the northern area of the route the River Dinin is a tributary of the River Nore flowing south-west from Brennan's Hill through the Castlecomer Plateau. The Plateau is the tableland that is the watershed between the Rivers Nore and Barrow (Lyng 1984). The River Barrow is the second longest river (193 kilometres) in Ireland after the River Shannon. It rises in the Slieve Bloom Mountains in Co Laois and flows east across bogs and lowlands and then turns south into the lowland immediately east of the Castlecomer Plateau. It passes through

Portarlington, Athy, Carlow, and Graiguenamanagh and runs through northern section of the route. It is joined by the River Nore at New Ross. The Maudlin River is the notable tributary of the River Barrow within the landscape of the route and flows east from Old Leighlin, with minor tributaries of it flowing through Banagagole. There are also streams and minor watercourses present throughout the entire landscape and these waterways would have been a valuable resource to past communities and would also have had a major influence on settlement and the surrounding land use.

The physical landscape through which the N9/N10 Phase 4 passes can be divided into three principal areas defined by the main rivers and their catchments. The southern area is located in the undulating landscape on the western flanks of the Nore Valley. The central area is dominated by the fertile watershed between the Barrow and Nore systems in the hinterland of Kilkenny City. The northern area is located on the western flanks of the Barrow Valley overlooked by uplands to the north and west. Danesfort 9 is located in the central landscape area.

3.1.2 The Central Landscape

The central landscape of the route encompasses the environs of the Nore Valley and the hinterland of Kilkenny City. It includes 35 sites discovered during the Phase 4 excavations stretching from Danesfort 1 north-east to Dunbell Big 1 and along the Kilkenny Link Road from Rathgarvan or Clifden 1 west to Leggetsrath East 1. The underlying bedrock of the region is made up of Carboniferous Limestone sands and gravels, Carboniferous Limestone Tills, Shale's and Sandstone Tills. According to the EPA the natural soils of the region consist of Renzinas and Lithosols in areas dominated by underlying bedrock of Carboniferous Limestone sands and gravels. Soil cover consisting of Grey Brown Podzolics and Brown Earths is present in areas of underlying Carboniferous Limestone Tills and Surface Water Gleys and Ground Water Gleys are the soils present where the underlying bedrock is made up of Shale's and Sandstone Tills. This landscape is underlain not only by the Butlersgrove geological formation but also by the Ballyadams formation (thick-bedded calcarenitic wackestone on erosional surfaces). A large number of quarries in the area, some of which produced the distinctive blue 'Kilkenny limestone' that was used to construct the medieval and later city, occur around the city itself and extend southward into the dolomite formations along the Nore around Dunbell (Tietzsch-Tyler, 1994).

The glacial drift around the Kilkenny City hinterland, along the Kilkenny Link Road, comprises sandy (50–60%), gravely clay with a noticeably higher sand content than along the southern plain of the River Nore. As this section crosses existing watercourses, areas of granular deposits and several isolated sand and gravel lenses were noted. The floodplain of the Nore extends *c.* 80m on the western side and *c.* 50m on the eastern side, creating marsh and wet grassland within the immediate area. The nature of the glacial drift and geology, combined with the water sources and floodplains in the area, has resulted in the high quality of the local pastoral and arable agricultural landscape. The topography in this section remains between 50m and 80m OD creating open and expansive views over the confluence of the Nore and Kings Rivers. Mountains are visible on the horizon to the north, east and south–east. Freestone Hill (130m) is located directly to the North and Knocknaguppoge beyond this rises to 334m. Outside the parameters of this landscape lies Brandon Hill (513m) to the south–east and further to the east are the Blackstairs Mountains (735m) and Mount Leinster (795m). The River Nore is the prevailing water course of the region and the River Barrow flows along the margins to the east. The Kings River is located to the south and would have influenced activity in and around this area.

3.1.3 Site Specific Landscape

The site was situated in a field of pasture that had a gentle southerly aspect (Plate 1). The field also dipped down to the north-east into a shallow basin where a natural pond and related prehistoric archaeological features were discovered (Danesfort 10 and 11). The low-lying nature of the surrounding landscape meant that the site had prominent views of the Blackstairs Mountains 30km to the east and Slievenamon 30km to the south-west. The pond probably represented the nearest water source to the site, although it is not known if the two areas were contemporary. However, during the excavations the basin regularly accumulated surface water after periods of rainfall and it is likely to have done so in the past. The site was located 2.2km due west of the River Nore, the major river in the region. It was 280m north-east of a group of Bronze Age pits at Danesfort 7, 480m north-east of further prehistoric activity at Danesfort 6 and 730m north-east of a Bronze Age settlement at Danesfort 5. It was also within 1km of three RMP sites but none of them are thought to be prehistoric (Figure 2).

3.2 The Archaeological Landscape

As part of the general research relating to sites along the scheme and the specific research relating to Danesfort 9, the known archaeology within the surrounding landscape was assessed in order to establish the level and type of activity in the surrounding area in the past. This included a review of information from the Record of Monuments and Places, previous excavations and other relevant documentary sources including mapping and other sites excavated as part of the N9/N10 Phase 4 scheme. The excavated archaeology at Danesfort 9 has been identified as being Neolithic in date.

3.2.1 The General Neolithic landscape of the Scheme – compiled by Michelle Brick

The Neolithic period in Ireland is generally understood to have occurred between 4000BC–2500BC. Archaeological evidence directly associated with settlement during this period had - prior to the upsurge in development-led excavations - been rather sparse in Kilkenny and Carlow as the soils in these areas may have been too heavy for Neolithic farming technology (Grogan 2004). However, recent excavations on the Waterford to Knocktopher portion of the N9/N10 Kilcullen to Waterford Road Scheme in south Kilkenny, as well as the rectangular houses discovered on the Kilcullen to Powerstown portion of the same road scheme in Co. Carlow, have added further insight into the Neolithic settlement of the region. Prior to the N9/N10 excavations archaeological activity in the Kilkenny/Carlow region was predominantly represented by a limited number of burials or tombs, most of which are Neolithic in date, such as the middle Neolithic megalithic tombs at the eponymous site of Linkardstown and at Baunogenasraid, Co. Carlow and Jerpoint West, Co. Kilkenny (Raftery, 1944; Raftery, 1972; 1974; Ryan 1974;).

The Central Neolithic Landscape

In contrast there is a relative absence of Neolithic monument types in the flatter fertile plains of central Kilkenny. Here the soils consist of grey brown podzols interwoven with smaller areas of gley which would have been less amenable to early farmers. A possible late Neolithic embanked enclosure (or henge) is located in Carran (Gibbons 1990, 6), to the east of the present region, and further east close to the Carlow border there is an unclassified megalithic tomb in Barrowmount (KK021-029). A similar enclosure occurred in Annamult (Gibbons 1990, 6; Prendergast 1954) to the south. Henges are one indication of increased ceremonial activity from the late Neolithic period onwards (Gibbons 1990) and further evidence of the late Neolithic is apparent to the north-east, beyond this region in Rathbeagh, where an enclosure is located on the banks of the Nore (Condit and Simpson 1998, 50–51).

The N9/N10 excavations within this central landscape revealed direct evidence for settlement although this is represented mainly by artefacts, although one possible temporary shelter was recorded at Danesfort 12, while a second possible structure was identified at Danesfort 9. At Danesfot 12, six postholes and two stakeholes formed a semi-circular shape, arced around a central posthole, which perhaps supported an internal post. The Danesfort 9 structure comprised a curvilinear slot-trench in which four depressions were noted that may have served as footings for wooden posts and three possible postholes; it has been dated to the late Neolithic period. Neolithic domestic settlement activity was also noted at Holdenstown 2, in the form of a series of isolated pits, postholes, hearths and a circular series of pits which contained flint and a broken polished stone axe. One of the postholes excavated has returned a date of 3791–3656BC (UBA 13112). The multi-period site of Danesfort 5 also uncovered evidence of early prehistoric activity in the form of an isolated pit containing a single piece of Neolithic pottery. The lithic assemblage from Rathclogh 2, while containing small early and final Neolithic elements, dates predominantly to the middle Neolithic. Contemporary activity, probably associated with a domestic site, is represented at Danesfort 7, Danesfort 12 and Danesfort 13 by small quantities of globular bowls. Two pits from Templemartin 5 contained cremated remains encased in pottery vessels. Both vessels from the cremation pits are thought to date to the late Neolithic. These are plain Grooved Ware pots and represent some of the first evidence for funerary contexts of this period in Ireland (Grogan and Roche 2009h). Evidence of the late Neolithic/Beaker period was recovered in this landscape in the form of pottery sherds. Beaker pottery was recovered from a domestic context at Danesfort 8 which is typical of this material, and the evidence at Danesfort, consisting of pits and postholes without any indication of a structural plan, is consistent with the record elsewhere in the country.

Conclusion

The broad regional pattern during the Neolithic in all three of the landscapes in Phase 4 indicates two core areas of settlement. In the north-east there is a concentration of activity along the upper Barrow Valley extending from the Goresbridge area northwards along the Barrow and the valley of the Burren River. This continued to be an important area into the middle and late Neolithic and the activity at Ballynolan 1 is on the southern edge of this landscape. To the south-west, on the upland fringes between the Nore and Suir Valleys, a second settlement concentration may reflect route-ways along the lower Nore/Barrow and Suir extending southwards towards the coast at Waterford. The central areas within the current scheme, consisting of lower lying terrain, appear not to have been attractive in this early period possibly a reflection of the heavier, and perhaps more thickly afforested, soils. Expansion into this landscape is, however, indicated by the Grooved Ware and Beaker contexts at Templemartin 5, Paulstown 2 and Danesfort and this heralds more intensive settlement in the Bronze Age.

3.2.2 The Site Specific Archaeological Landscape of Danesfort 9

There were a number of recorded monuments located in close proximity to Danesfort 9. An enclosure site (KK023-062) is recorded to the NNW, *c*. 150m away, and located *c*. 200m to the east, an enclosure site and a possible ridge and furrow site (KK023-062001–2) are recorded. Further to the north-east, another enclosure site (KK023-063) is located *c*. 750m away, and *c*. 900m to the north-east, three enclosures (KK023-049001–3) are recorded at Kilree. Located *c*. 1.1km to the south-east, a further enclosure site is situated (KK023-082). To the south-west of Danesfort 9, a field system and linear earthwork (KK023-06001–2) are recorded, *c*. 550m away, and *c.* 1.2km to the west, two ringforts (KK023-056–57) and a dovecote (KK023-059) recorded.

At Danesfort 9, a late Neolithic temporary shelter or the ephemeral remains of a domestic dwelling and a single pit were excavated. There were a number of sites excavated in the immediate vicinity of Danesfort 9, as part of the N9/N10 Phase 4: Knocktopher to Powerstown works. At Danesfort 10, located *c*. 120m to the north-east, prehistoric hearths and pits were excavated. Beyond these sites, at Danesfort 11, located *c*. 150m to the north-east of Danesfort 9, features associated with burnt mound activity were excavated and at Rathclogh 1, located *c*. 300m to the north-east, post medieval activity in the form of field drains and a field boundary were excavated. Rathclogh 2 was located *c*. 750m to the north-east and a number of pits and a single stakehole dating to the middle/late Neolithic period were excavated at this site.

A number of sites were also excavated to the south of Danesfort 9, as part of the N9/N10 Phase 4: Knocktopher to Powerstown works. At Danesfort 8, located *c*. 100m to the south-west, two ditch alignments of an ancient field system were excavated, as well as a number of pits, postholes and stakeholes. At Danesfort 7, located *c*. 300m to the south-west, Neolithic activity in the form of eight scattered circular pits, two stakeholes and one post pit were recorded. Middle Neolithic pottery sherds were also recovered at this site. At Danesfort 6, located *c*. 450m to the south-west, an early Bronze Age phase of activity comprising of a deep, flat-bottomed, straight-sided circular pit containing sherds of a least three different funerary urns, and a cremation pit with marker post were excavated. A later phase of occupation was defined by a concentration of postholes, stakeholes, pits, and boundaries clustered together on the western edge of a natural pool. At Danesfort 5, *c.* 650m further to the south-west, a Bronze Age settlement that comprised three post and beam roundhouses with internal hearths and southeast-facing porches were excavated. Some later activity was also identified in the form of a keyhole-shaped kiln, a bowl furnace and other pits containing heat-cracked stone and metalworking debris at the site.

The immediate landscape of the site is one that has been the focus of settlement from the middle Neolithic through to the early medieval period and medieval evidence was identified from outside the immediate environs of the site. This shows a strong continuity of settlement in the area.

3.3 Typological Background of Temporary Prehistoric Structures

The rise in development lead archaeological excavations in recent years has resulted in the identification of many smaller and ephemeral features which now make up a substantial portion of the archaeological record in addition to the larger, well documented site types. This is also true on the N9/N10 Phase 4: Knocktopher to Powerstown where a number of sites have been interpreted as Temporary Structures. These structures generally present as small slot trenches, alignments of small numbers of postholes, clusters of stakeholes or combinations of all three elements. There are usually not enough definitive elements such as formal entrances and roof supports to identify a specific building type - as with Neolithic or Bronze Age houses. Temporary structures are more likely to represent transient settlement and would probably have been in use for a very short time as there is often no evidence of domestic habitation in the form of artefacts or waste material. Along the N9/N10 these structures have been dated to the Neolithic and Bronze Age periods. To date no definitive study has been carried out to assimilate the results from the many excavations across the country over the past 2 decades so there is no detailed research into variances between periods and typology.

3.4 Summary of the Excavation Results

The excavation identified the remains of a small slot trench and 3 possible postholes. It is likely that these were part of a small temporary structure. A nearby pit may or may not be associated. Scorching of the lower fills may suggest it was a hearth.

3.5 Summary of the Specialist Analysis

A number of specialists provided analysis of samples and artefacts recovered from the site as part of the post-excavation works. This work in part formed the basis for the dating evidence for the site. The detailed reports on the results of all analysis are in Appendix 2

Charcoal and Wood Species identification

Charcoal was examined from three contexts at Danesfort 9, from a slot trench, posthole and pit fill. Five wood taxa only were identified; the results are dominated by oak. The charcoal results from the slot trench and postholes are both dominated by oak, which indicates that this was the species used for construction

Radiocarbon Dating

A single sample was sent for AMS radiocarbon dating.

A sample of oak charcoal from posthole fill C12 was sent for radiocarbon dating and returned a 2 sigma calibrated date of 2874–2631BC (UBA 11002)

4 DISCUSSION AND CONCLUSIONS

4.1 Discussion

Danesfort 9 is located in well drained flat land that is currently extensively used for tillage and pasture. The nature of the physical landscape was obviously attractive to settlers in this area given the large number of archaeological sites excavated as part of the N9/N10 Phase 4: Knocktopher to Powerstown.

The site has been dated to the late Neolithic period, but this is not the first evidence of human activity in the area. The nearby site of Danesfort 7 produced a middle Neolithic date and sherds of pottery from a series of pits although no definitive structure was identified. Late Neolithic evidence was identified at Rathclogh 2 which produced radiocarbon dates indicating that it is broadly contemporary with the activity at Danesfort 9. Rathclogh 2 also had evidence of pits with lithics, possibly deliberately deposited. As with the earlier Danesfort 7, no definitive structure or plan could be identified.

Danefort 9 has been interpreted as a temporary structure/shelter. It is likely that this represents a transient activity on site and is not related to a longer term settlement. This is evident in the nature of the remains which are not substantial enough to be considered as a formal Neolithic house. The slot-trench may have held vertical timbers, or scrub effectively acting as a windbreak. This structure could have been supported by the two adjacent postholes. This could have been similar to a *bivouac* - a shelter constructed of natural materials such as a structure of branches to form a frame which is then covered with leaves, ferns and similar for waterproofing and duff (also known as *leaflitter*) for insulation (Wikipedia). Until comparative examples are researched this interpretation must be considered speculative.

The area was subsequently more intensively settled in the Bronze Age and into the early medieval and medieval periods. This follows a general pattern identified across the country. It is possible that there are more definitive settlements dating to the Neolithic that have yet to be discovered in the area of Danesfort and that the excavated evidence represents activity ephemeral to this. It is also possible that as suggested by Grogan the soils in these areas may have been too heavy for Neolithic farming technology (2004). In this instance the Neolithic activity would have been transient and temporary with the area being used by hunters in the Neolithic rather than settled and farmed. This interpretation compliments the archaeological results, particularly those from Danesfort 9.

4.2 Conclusions

Danesfort 9 is an important site locally and although the archaeological remains are small they are significant in assisting our understanding of a developing landscape from the Neolithic to the Bronze Age. This is particularly relevant given the presence of middle and late Neolithic, Beaker, middle and late Bronze Age, and Iron Age evidence in the immediate vicinity of the site. The Danesfort area is also rich in early medieval and medieval settlement and the Neolithic activity at Danesfort 9 and 7 and Rathclogh 2 thus represents the foundation for all later activity. It is likely that the area was not intensively settled or farmed in the Neolithic and the temporary structure at Danesfort 9 is evidence of this.

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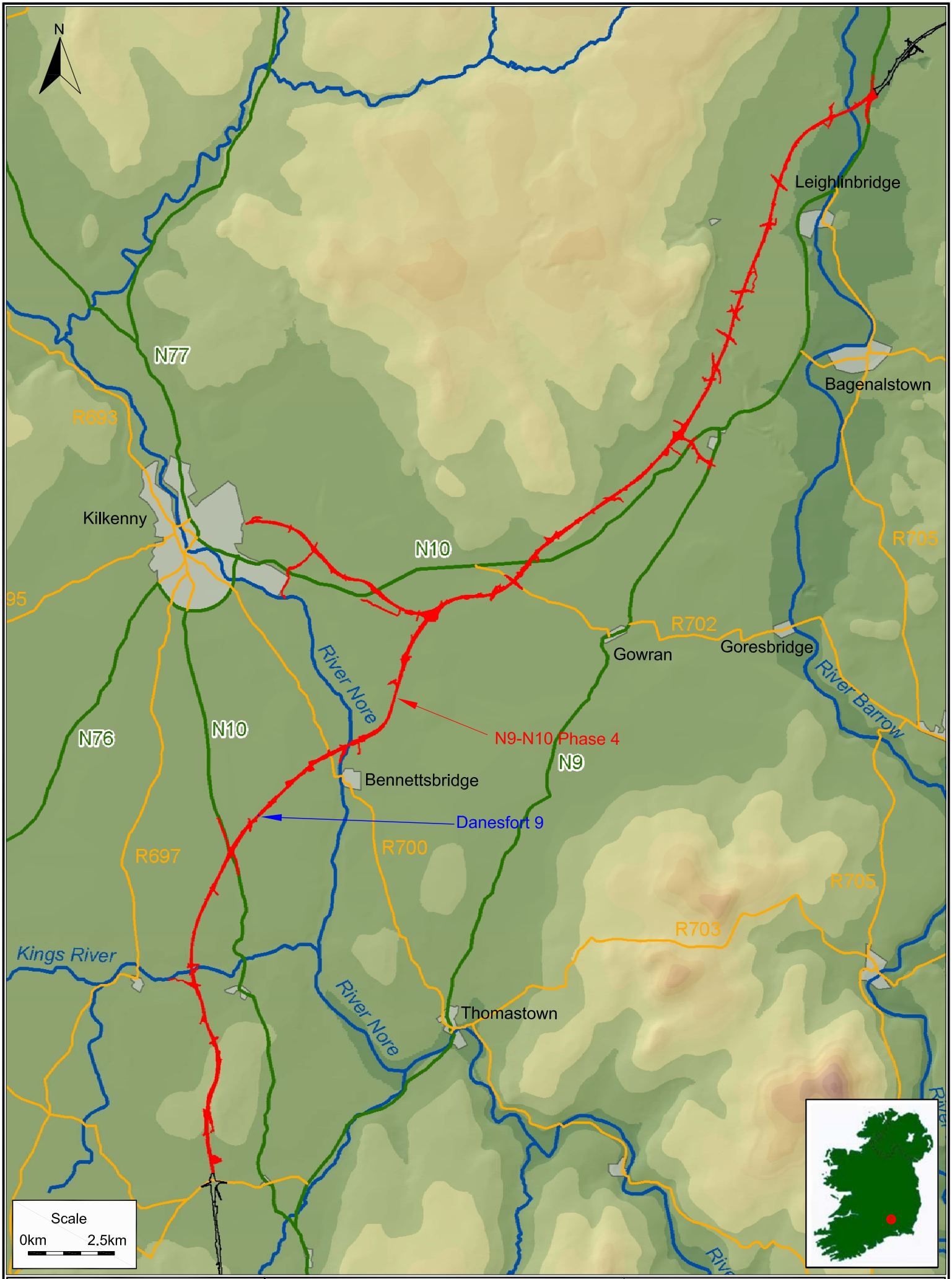
http://en.wikipedia.org/wiki/Bivouac_shelter



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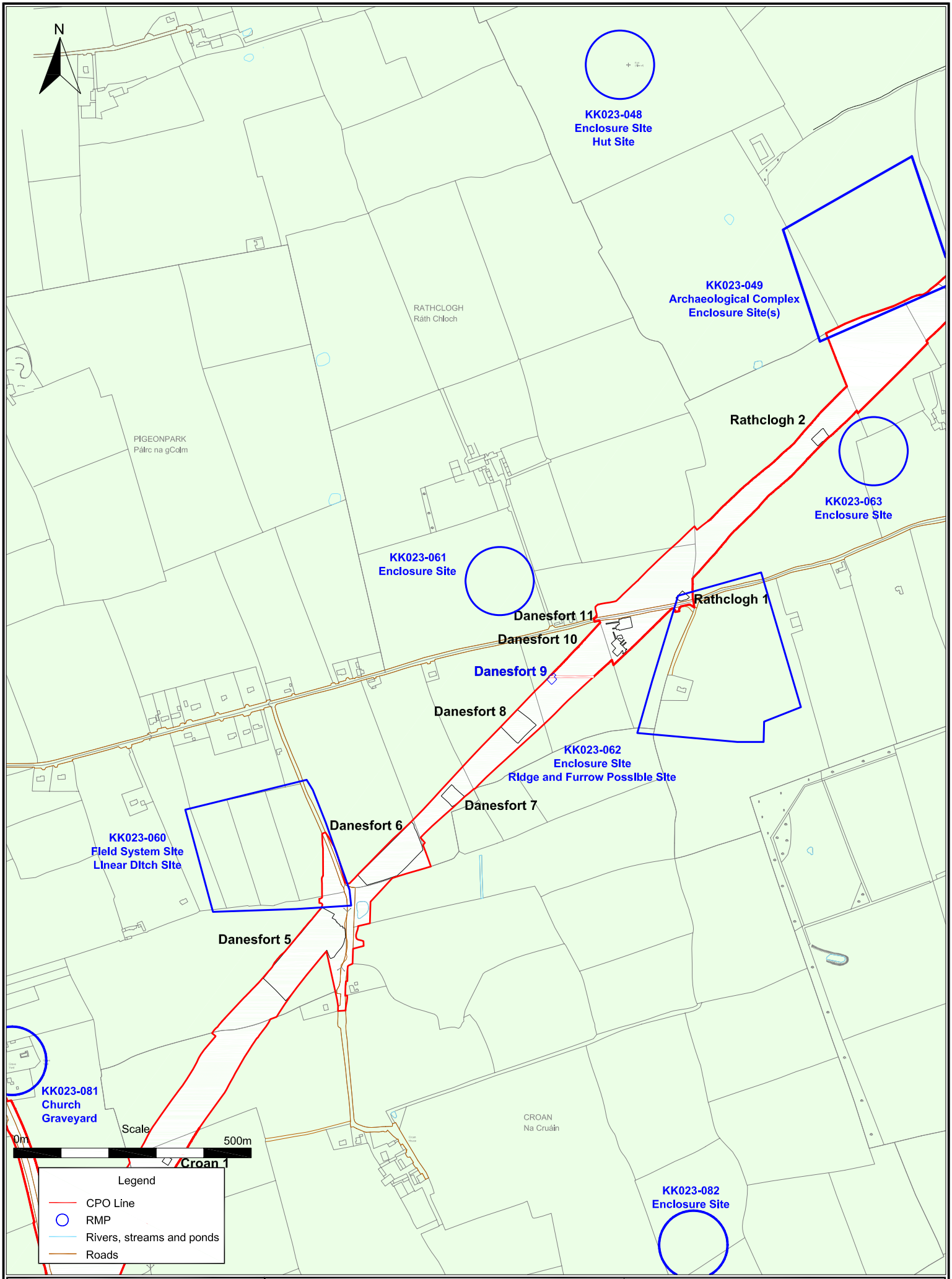
	Client:	Kilkenny County Council	Produced by: P Higgins
			Job No: J2432
			Figure No: 1



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Project:	N9-N10 Phase 4: Knocktopher to Powerstown
Client:	Kilkenny County Council

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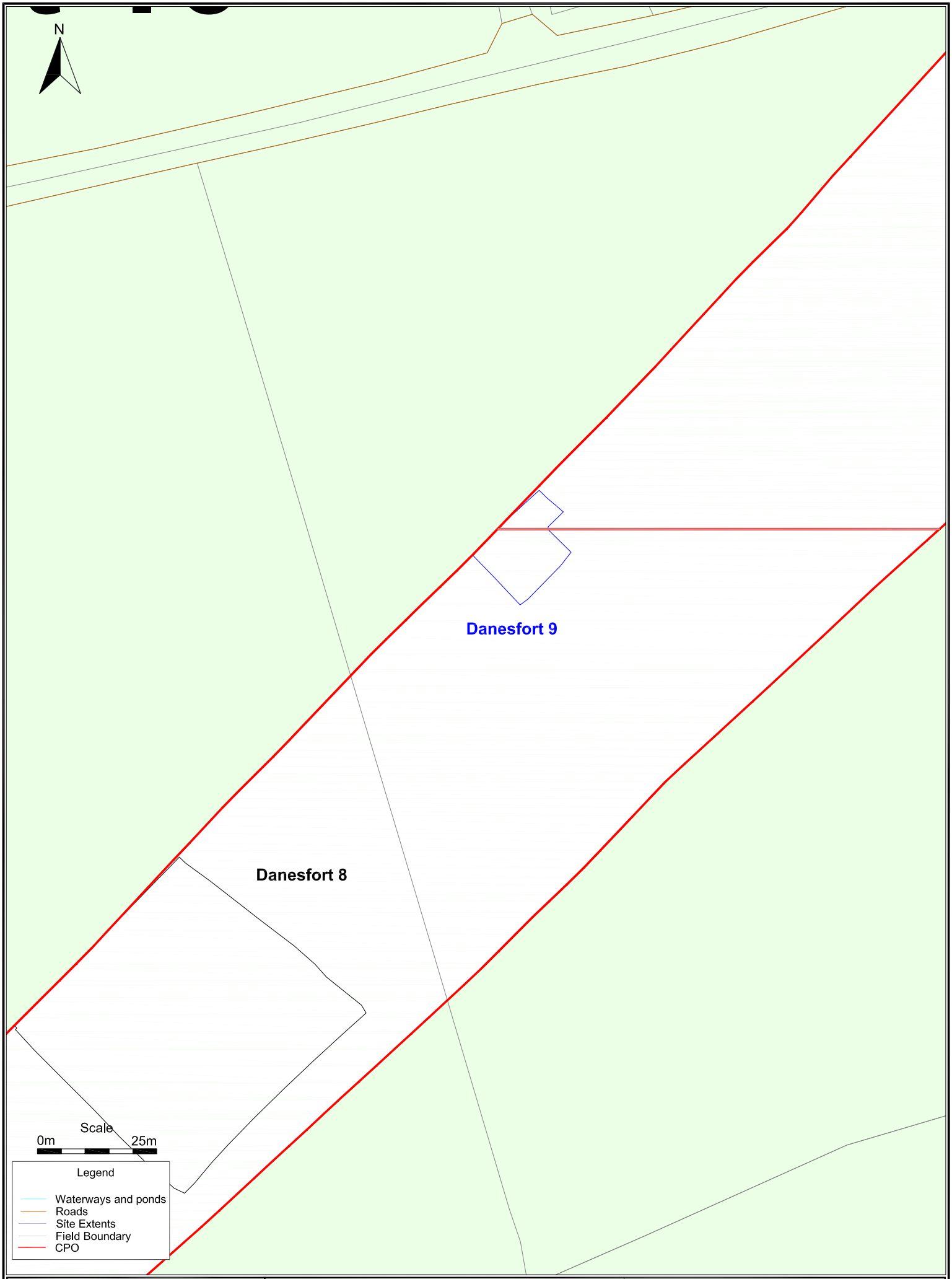
Produced by:	P Higgins
Job No:	J2432
Figure No:	2



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Client:	Kilkenny County Council

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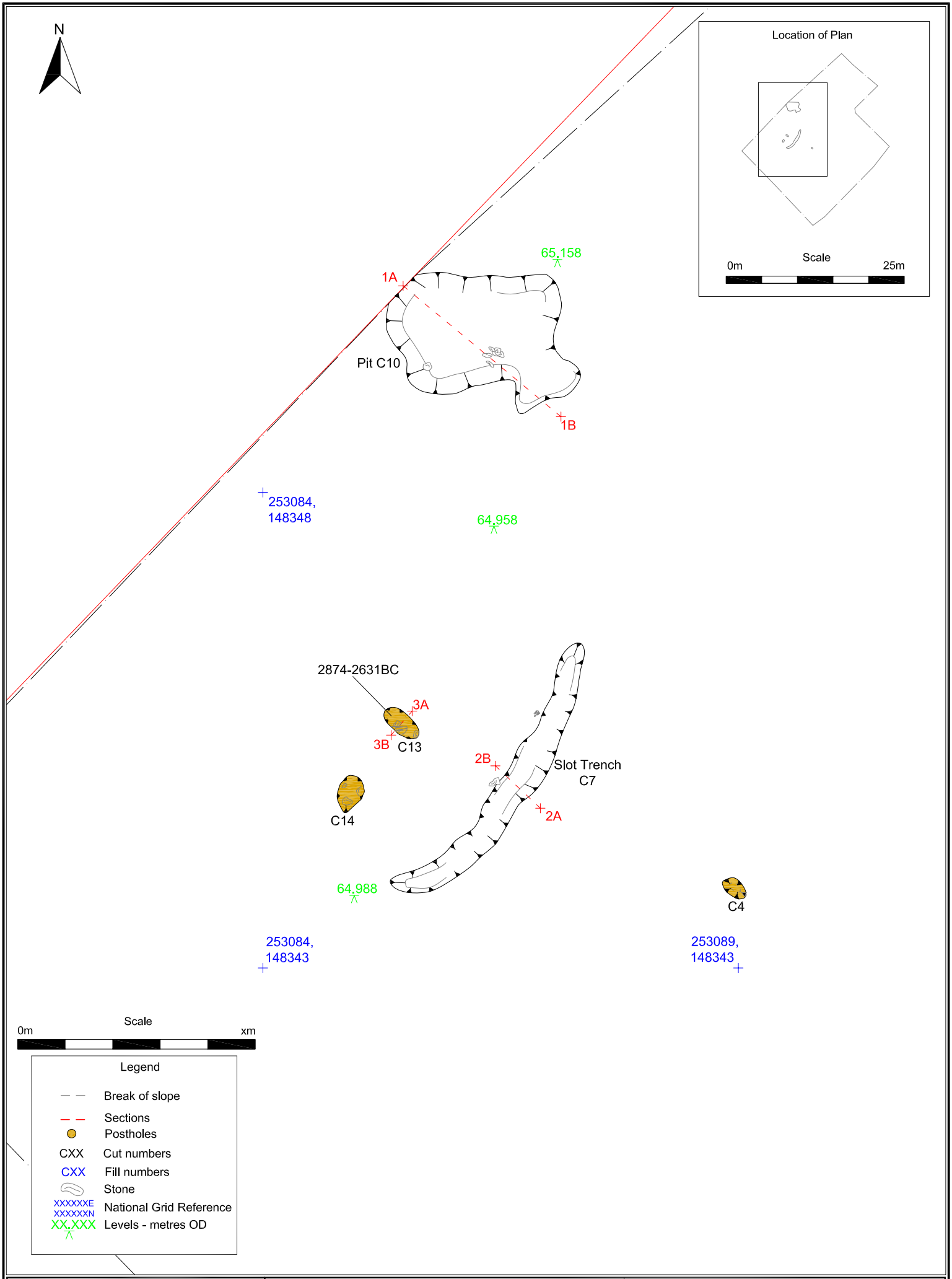

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Project:	N9-N10 Phase 4 Knoctopher to Powerstown
Client:	Kilkenny County Council
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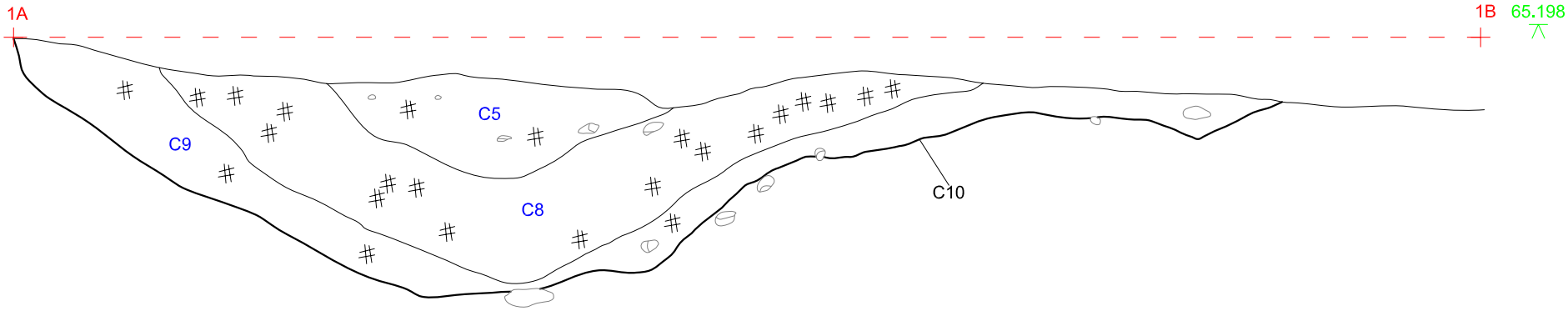
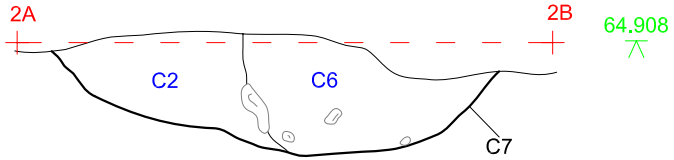
Date:	07/05/10
Produced by:	P Higgins
Job No:	J2432
Figure No:	4

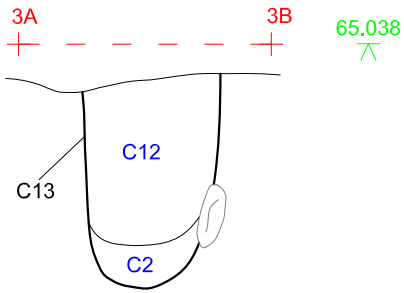
Southwest facing section of C10



Northeast facing section of C7



Northwest facing section of C13



Scale

0m 1m

Legend

CXX	Cut Numbers
CXX	Fill Numbers
	Stone
#	Charcoal
XX.XXX	Levels - metres OD

IAC Irish Archaeological Consultancy

Title:	Danesfort 9 section
Project:	N9-N10 Phase 4: Knocktopher to Powerstown
Client:	Kilkenny County Council

Scale:	1:10 @ A4
Date:	07/05/10
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Figure No:	5

PLATES

Plate 1: Danesfort 9, mid-excavation, from the south-west

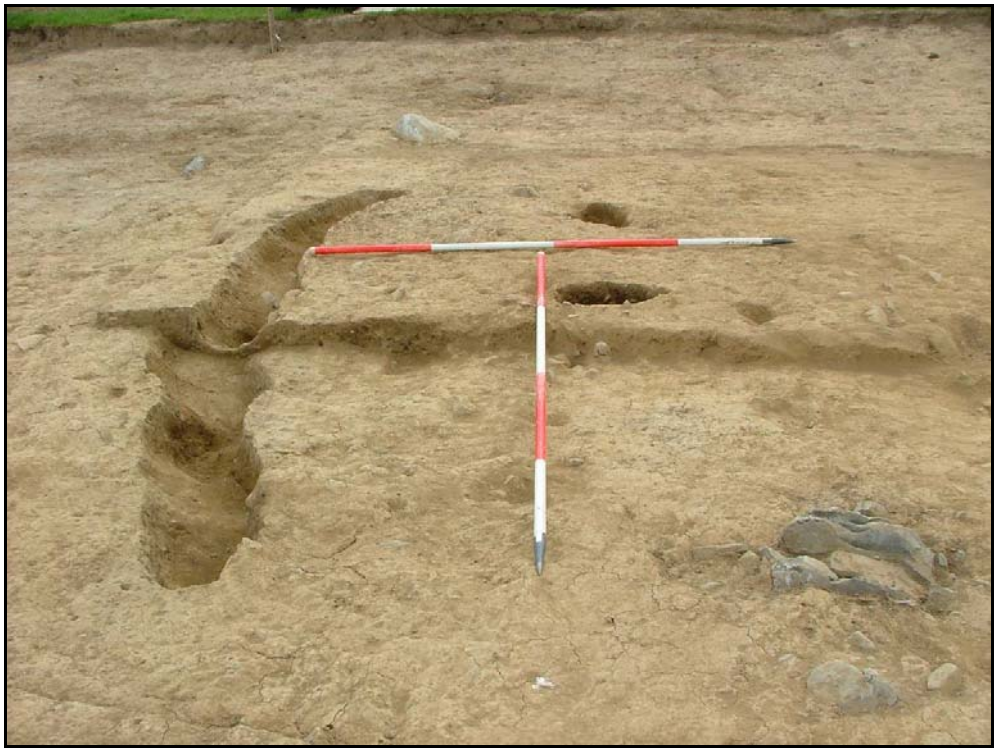

Plate 2: Prehistoric structure and its associated pit, post-excavation, facing west (The ridge running across the picture is the edge of the original test-excavation trench)

APPENDIX 1 CATALOGUE OF PRIMARY DATA

Appendix 1.1 Context Register

Context	Fill of	L(m)	W(m)	D(m)	Interpretation	Description	Context Above	Context Below
1	N/A					Dark grey, blackish, loose silty sand.		
2	N/A					Light greyish yellow, compact sandy clay.		
3	C4	0.18	0.17	0.05	Fill of poss. posthole	Oval in shape, loosely compacted greyish brown silty sand with charcoal inclusions.	C1	C4
4	N/A	0.18	0.17	0.05	Cut of poss. posthole	Oval in shape, break of slope not perceptible, concave sides with a concave base.	C3	C2
5	C10	0.53	1.20	0.14	Upper fill of slot-trench	Friable, yellowish brown silty sand with occasional charcoal and pebbles.	C1	C8
6	C7	3.20	0.40	0.27	Fill of ditch	Linear in shape, loosely compacted greyish brown sandy silt with stones and charcoal.	C1	C7
7	N/A	3.00	0.40	0.27	Cut of ditch	Linear ditch with sharp break of slope- top, gradual break of slope-base, vertical sides and an uneven base.	C6	C2
8	C10	1.28	1.60	0.33	Fill of slot-trench	Loosely compacted greyish brown sandy silt with lots of charcoal and occasional pebbles.	C5	C9
9	C10	1.98	1.70	0.36	Fill of slot-trench	Friable reddish light brown silty sand with occasional charcoal, oval in shape	C8	C10
10	N/A	1.72	1.40	0.36	Cut of poss. slot-trench	Irregularly shaped in plan, sharp from N break of slope, gradual from other sides with an uneven base and sloping sides	C9	C2
11	C14	0.35	0.30	0.17	Fill of poss. posthole	Friable light brown silty sand with charcoal inclusions.	C1	C14
12	C13	0.38	0.20	0.20	Fill of poss. posthole	Loosely compacted light greyish brown silty sand with occasional charcoal. Sub-oval in shape	C1	C13
13	N/A	0.38	0.20	0.20	Cut of poss. posthole	Suboval in plan, sharp break of slope- top, gradual break of slope-base with a slightly tapered rounded base and convex sides	C12	C2
14	N/A	0.35	0.30	0.17	Cut of poss. posthole	Oval in shape, sharp break of slope-top, from WS - gradual and gradual as well break of slope-base with a concave base .Sides - vertical, from S and WS - sloping	C11	C2

Appendix 1.2 Catalogue of Artefacts

There were no artefacts recovered from the site

Appendix 1.3 Catalogue of Ecofacts

During post excavation works specific samples were processed with a view to further analysis. A total of 7 soil samples were taken from features at Danesfort 9 and all samples were processed by flotation and sieving through a 250µm mesh. The following are the ecofacts recovered from these samples:

Context #	Sample #	Feature type i.e. Structure A, hearth C45	charcoal	Seeds and charcoal	Burnt animal bone	animal bone	human bone	metallurgical waste	Other
C3	1	Fill of poss. posthole	4.7g						
C5	3	Upper fill of slot-trench	0.2g						
C6	2	Fill of ditch	5.3g						
C8	4	Fill of slot-trench	45.5g						
C9	5	Fill of slot-trench	1.2g						
C12	6	Fill of poss. posthole	1.1g						
C11	7	Fill of poss. posthole	1.2g						

Appendix 1.4 Archive Index

Project: N9/N10 Phase 4 Knocktopher to Powerstown		
Site Name: Danesfort 9 AR086		
Excavation Registration Number: E3468		
Site director: Richard Jennings		
Date: July 2010		
Field Records	**Items (quantity)**	**Comments**
Site drawings (plans)	3 plans	2 pre-ex, 1 post-ex and 1 section
Site sections, profiles, elevations	1 section	
Other plans, sketches, etc.	0	
Timber drawings	0	
Stone structural drawings	0	
Site diary/note books	1	
Site registers (folders)	1	
Survey/levels data (origin information)	72	
Context sheets	14	
Wood Sheets	0	
Skeleton Sheets	0	
Worked stone sheets	0	
Digital photographs	39	
Photographs (print)	0	
Photographs (slide)	0	
Security copy of archive	Yes	Digitised

APPENDIX 2 SPECIALIST REPORTS

Appendix 2.1 Charcoal and Wood Report – Lorna O' Donnell

Appendix 2.2 Radiocarbon Dating Results – QUB Laboratory

Appendix 2.1 Charcoal and Wood Species Identification Report

CLIENT – IRISH ARCHAEOLOGICAL CONSULTANCY LTD
SITE NAME- DANESFORT 9
EXCAVATION NUMBER –E3468 AR086
COUNTY – KILKENNY
AUTHOR- LORNA O'DONNELL

DATE –17/7/09

Illustrations

Figures

Tables

Introduction

This report describes the charcoal analysis of samples from a possible prehistoric shelter, excavated by Richard Jennings at Danesfort 9, Co. Kilkenny. The site was excavated as part of along the N9/N10 Kilcullen to Waterford Scheme, Phase 4 – Knocktopher to Powerstown (Jennings 2008). Charcoal was examined from three contexts, including a slot trench, pit fill and posthole fill. The aim of the work is to identify enough suitable material for radiocarbon dating, and to provide a floristic background to the site. It can also give us information about species selected for building at Danesfort 9. This report is summary in nature only, further analysis, discussions and comparisons of results will be incorporated into a final integrated charcoal and wood report for all sites along the N9/N10 ((Lyons *et al* forthcoming).

Methodology (After IAC Ltd)

Processing

A mechanical flotation tank using a pump and water recycling system is used for soil flotation

The soil is washed using a 1mm mesh in the flotation tank and a 300 micron and 1mm sieve is used to catch floated material.

The volume of all soil samples are recorded in litres using a measuring jug.

The sample is then placed into the 1mm mesh in the flotation tank, the tank is then filled with water and the sample washed. Any large lumps of soil can be carefully broken down by hand, but the jets of water in the flotation tank gently clean the rest of the sample.

Once the sample is clean (just stones, charcoal, artefacts remaining in the mesh) the tank is fill up with water and at this stage any floating material (charcoal, seeds etc) should flow over the spout and into the sieves.

The retent is then gently poured into a labelled tray (containing site code, site name, sample number and context number) and place on a shelf to dry.

The flots are securely packaged in tissue, labelled and hung up to dry. This prevents any loss of light material (seeds) which could result once the flots are dry and being moved (if they are dried on trays).

Before washing a new sample all equipment used (measuring jugs, 1mm mesh, sieves etc) are thoroughly washed using clean water.

The large black settling tanks (and water) are cleaned between every site, or if a large site is being processed, every 1-2 weeks.

Any samples containing a high clay content will be soaked in water for 1-2 days to aid the sieving process.

Charcoal identification

Each piece of charcoal was examined and orientated first under low magnification (10x-40x). They were then broken to reveal their transverse, tangential and longitudinal surfaces. Pieces were mounted in plasticine, and examined under a binocular microscope with dark ground light and magnifications generally of 200x and 400x. Each taxon or species will have anatomical characteristics that are particular to them, and these are identified by comparing their relevant characteristics to keys (Schweingruber 1978; Hather 2000 and Wheeler *et al* 1989) and a reference collection supplied by the National Botanical Gardens of Ireland, Glasnevin. It was aimed to identify fifty fragments per sample.

Details of charcoal recording

The general age group of each taxa per sample was recorded, and the growth rates were classified as slow, medium, fast or mixed. It was not within the scope of this project to measure all the ring widths from the charcoal, however, some measurements were taken with a graticule in the microscope in order to make the scale of slow, medium and fast growth less subjective. Slow growth within the

charcoal from this site was considered to be approximately 0.4mm per annum, medium approximately 1mm per annum and fast approximately 2.2mm per annum.

The ring curvature of the pieces was also noted – for example weakly curved annual rings suggest the use of trunks or larger branches, while strongly curved annual rings indicate the burning of smaller branches or trees (Fig. 1). Tyloses in vessels in species such as oak can denote the presence of heartwood. These occur when adjacent parenchyma cells penetrate the vessel walls (via the pitting) effectively blocking the vessels (Gale 2003, 37). Insect infestation is usually recognised by round holes, and is considered to be caused by burrowing insects. Their presence normally suggests the use of decayed degraded wood, which may have been gathered from the woodland floor or may have been stockpiled.

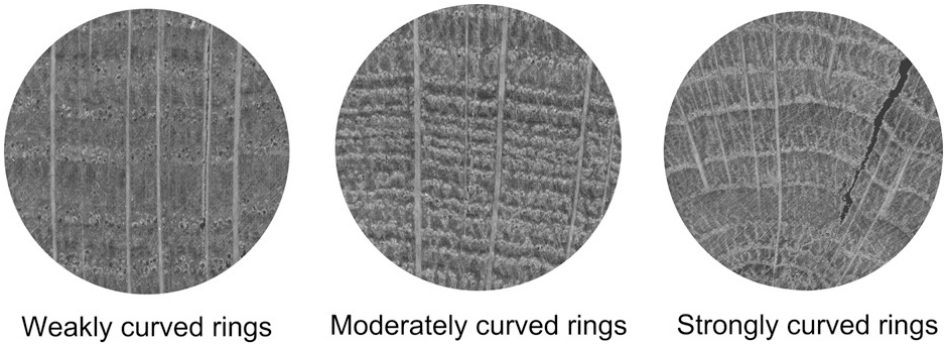

Fig. 1 Ring curvature. Weakly curved rings indicate the use of trunks or large branches. (After Marguerie and Hunot 2007 1421, Fig. 3).

Results

Two wood taxa or trees only were identified from Danesfort 9, oak (*Quercus* sp.) and hazel (*Corylus avellana*). The results are dominated by oak (Fig. 2).

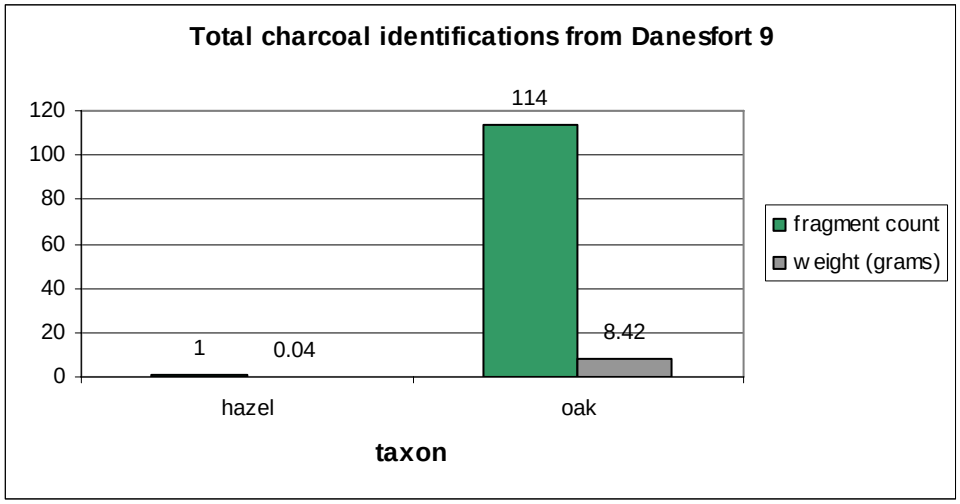

Fig. 1

The charcoal results from the slot trench (Cut 7 Context 6) and postholes (Cut 13 Context 12) are both dominated by oak, which indicates that this was the species used for construction. Oak is a very tough and durable wood, and was favoured in prehistoric Ireland for posts. In comparison, the pit fill (Context 8) is also dominated by oak.

Discussion

The oak present could be either our native pedunculate (*Quercus robur*) which prefers more wet, heavier clays than the sessile oak (*Quercus petraea*) (Beckett 1979, 40–41).Hazel is a very tolerant tree, it can grow from wet to dry conditions (but not waterlogged ones (Orme and Coles 1985, 9). It was once very common in Ireland, Mc Cracken writes that it was once widespread to an extent that is hard to imagine today (1971, 19). It can grow as a tree or can form hazel scrub.

Summary

Charcoal was examined from three contexts at Danesfort 9, from a slot trench, posthole and pit fill. Five wood taxa only were identified; the results are dominated by oak.

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Table 1 Charcoal identification details from Danesfort 9

Context number	Cut number	Sample number	Flot weight (g)	Context description	Wood taxon	No. of fragments	Charcoal weight (grams)	Size of fragments (mm)	No. of growth rings	Growth	Weakly or strongly curved rings	Insect holes	Tyloses
6	7	2	5.3	slot trench	*Corylus avellana* (hazel)	1	0.04						
					Quercus sp. (oak)	49	1.7	5-8	3-8	slow	weakly curved		20%
8	10	4	45.5	pit fill	*Quercus* sp. (oak)	50	5.62	5-20	5-8	slow	weakly curved		50%
12	13	6	1.1	posthole fill	*Quercus* sp. (oak)	15	1.1	2-3					

Appendix 2.2 Radiocarbon Dating Results – QUB Laboratory

The "Measured radiocarbon age" is quoted in conventional years BP (before AD 1950). The error is expressed at the one-sigma level of confidence.

The "Calibrated date range" is equivalent to the probable calendrical age of the sample material and is expressed at the two-sigma (95.4% probability) level of confidence

Calibration data set: intcal04.14c

Context	Sample No	Material	Species id/ Weight	Lab	Lab Code	Date Type	Calibrated date ranges	Measured radiocarbon age (BP)	13C/12C Ratio ‰
C12, Fill of a posthole	6	Charcoal	*Quercus sp.* / 0.1g	QUB	UBA 11002	AMS (Std)	2866–2670BC (1 sigma), 2874–2632BC (2 sigma)	4149±26	-26.6

References for calibration datasets:
PJ Reimer, MGL Baillie, E Bard, A Bayliss, JW Beck, PG Blackwell, C Bronk Ramsey, CE Buck, GS Burr, RL Edwards, M Friedrich, PM Grootes, TP Guilderson, I Hajdas, TJ Heaton, AG Hogg, KA Hughen, KF Kaiser, B Kromer, FG McCormac, SW Manning, RW Reimer, DA Richards, JR Southon, S Talamo, CSM Turney, J van der Plicht, CE Weyhenmeyer (2009) Radiocarbon 51:1111–1150.

Comments:
* This standard deviation (error) includes a lab error multiplier.
** 1 sigma = square root of (sample std. dev.^2 + curve std. dev.^2)
** 2 sigma = 2 x square root of (sample std. dev.^2 + curve std. dev.^2)
where ^2 = quantity squared.
[ ] = calibrated range impinges on end of calibration data set
0* represents a "negative" age BP
1955* or 1960* denote influence of nuclear testing C-14

Note: cal ages and ranges are rounded to the nearest year which may be too precise in many instances. Users are advised to round results to the nearest 10 yr for samples with standard deviation in the radiocarbon age greater than 50 yr.

APPENDIX 3 LIST OF RMP IN AREA

RMP No	Description
KK023-048001	Enclosure
KK023-048002	Hut
KK023-049001	Enclosure
KK023-049002	Enclosure
KK023-049003	Enclosure
KK023-063	Enclosure
KK023-061	Enclosure
KK023-062001	Enclosure
KK023-062002	Cultivation Ridge
KK023-060001	Field System
KK023-060002	Linear Earthwork
KK023-082	Enclosure
KK023-081001	Church
KK023-081002	Graveyard
KK023-081003	Graveslab

See Figure 2 for location.

APPENDIX 4 LIST OF SITE NAMES

Site Name	Site Code	E Number	Director	NGR
Baysrath 2	AR055	E3627	Fintan Walsh	251593/137855
Baysrath 3	AR056	E3628	Fintan Walsh	251672/138000
Baysrath 4	AR057	E3629	Fintan Walsh	251515/138280
Danganbeg 1	AR058	E3606	Emma Devine	251462/138754
Danganbeg 2	AR059	E3607	Emma Devine	251397/138939
Danganbeg 3	AR060	E3671	Emma Devine	251430/139245
Danganbeg 4	AR061	E3676	Emma Devine	251401/139372
Knockadrina 1	AR062	E3677	Ed Lyne	251422/139420
Tinvaun 1	AR063	E3678	Ed Lyne	251482/139625
Tinvaun 2	AR064	E3680	James Kyle	251445/139736
Tinvaun 3	AR065	E3608	James Kyle	251501/139832
Tinvaun 4	AR066	E3609	James Kyle	251508/139917
Stonecarthy West 1	AR067	E3610	James Kyle	251538/140023
Knockadrina 2	AR068	E3611	James Kyle	251647/140237
Rathduff 1	AR069	E3612	Ed Lyne	251286/142167
Rathduff Upper 1	AR070	E3613	Ed Lyne	251280/142559
Kellsgrange 1	AR071	E3575	James Kyle	250911/143732
Kellsgrange 2	AR072	E3577	James Kyle	250967/143861
Kellsgrange 3	AR073	E3576	James Kyle	250948/144003
Ennisnag 1	AR074	E3614	Richard Jennings	251416/145690
Ennisnag 2	AR075	E3615	Richard Jennings	251638/146068
Danesfort 12	AR076	E3616	Richard Jennings	251669/146186
Danesfort 13	AR077	E3617	Richard Jennings	251765/146384
Danesfort 2	AR078	E3540	Richard Jennings	251953/146745
Danesfort 4	AR079	E3539	Richard Jennings	251880/147579
Danesfort 3	AR080A	E3542	Richard Jennings	252221/146845
Danesfort 1	AR080B	E3541	Richard Jennings	252267/146707
Croan 1	AR081	E3543	Emma Devine	252280/147332
Danesfort 5	AR082	E3546	Emma Devine	252567/147767
Danesfort 6	AR083	E3538	Emma Devine	252764/147995
Danesfort 7	AR084	E3537	Emma Devine	252878/148099
Danesfort 8	AR085	E3461	Richard Jennings	253020/148246
Danesfort 9	AR086	E3468	Richard Jennings	253089/148345
Danesfort 10	AR087	E3459	Richard Jennings	253229/148414
Danesfort 11	AR088	E3460	Richard Jennings	253245/148462
Rathclogh 1	AR089	E3726	Patricia Lynch	253365/145515
Rathclogh 2	AR090	E3727	Patricia Lynch	253650/148848
Kilree 1	AR091	E3728	Patricia Lynch	254088/149310
Kilree 2	AR092	E3729	Patricia Lynch	254320/149500
Kilree 3	AR093	E3643	Patricia Lynch	254449, 149639
Kilree 4	AR094	E3730	Patricia Lynch	255330/150084
Dunbell Big 2	AR095	E3853	Yvonne Whitty	256684/151066
Holdenstown 1	AR096	E3681	Yvonne Whitty	256737/151253
Holdenstown 2	AR097/98	E3630	Yvonne Whitty	256891/151781
Holdenstown 3	AR099	E3854	Yvonne Whitty	256990/152085
Holdenstown 4	AR100	E3682	Yvonne Whitty	256828/152048
Dunbell Big 1	AR101	E3855	Yvonne Whitty	257034/152315
Rathcash 1	AR102	E3859	Tim Coughlan	258178/154199
Rathcash 2	AR103	E3860	Tim Coughlan	258294/154293
Rathcash East 1	AR104	E3892	Tim Coughlan	259419/154546
Rathcash East 2	AR105	E3893	Tim Coughlan	259555/154566
Rathcash East 3	AR106	E3861	Tim Coughlan	259821/154653
Blanchvillespark 1	AR107	E3894	Richard Jennings	260535/155212
Blanchvillespark 2	AR108	E3895	Tim Coughlan	260637/155449

Site Name	Site Code	E Number	Director	NGR
Blanchvillespark 3	AR109	E3913	Tim Coughlan	260785/155653
Blanchvillespark 4	AR110	E3914	Tim Coughlan	261442/156269
Blanchvillespark / Ballyquirk 1	AR111	E3862	Ruth Elliott	261531/156323
Ballyquirk 1	AR112	E3863	Ruth Elliott	261531/156323
Ballyquirk 2	AR113	E3864	Ruth Elliott	261811/156508
Ballyquirk 3	AR114	E3865	Ruth Elliott	261875/156559
Ballinvally 1	AR115	E3836	Emma Devine	263258/157521
Garryduff 1	AR116	E3852	Emma Devine	263933/157991
Kilmacahill 1	AR117	E3915	Tim Coughlan	264267/158369
Kilmacahill 2	AR118	E3833	Tim Coughlan	264380/158453
Jordanstown 1	AR119	E3834	James Kyle	264546/158643
Jordanstown 2	AR120	E3851	James Kyle	264893/159038
Kellymount 6	AR121	E3758	Przemaslaw Wierbicki	265130,159277
Jordanstown 3	AR122	E3916	Przemaslaw Wierbicki	265103/159227
Kellymount 1	AR123	E3756	Przemaslaw Wierbicki	265250/159397
Kellymount 2	AR124	E3757	Przemaslaw Wierbicki	265164/159463
Kellymount 3	AR125	E3856	Przemaslaw Wierbicki	265338/159597
Kellymount 4	AR126	E3857	Przemaslaw Wierbicki	265412/159803
Kellymount 5	AR127	E3858	Przemaslaw Wierbicki	265530,159977
Shankill 2	AR128	E3738	Richard Jennings	265924/160651.
Shankill 3	AR129	E3737	Richard Jennings	266052/161141
Shankill 4	AR130	E3838	Richard Jennings	266286/161526
Shankill 5	AR131	E3850	Richard Jennings	266374/161730
Shankill 6	AR132	E3840	Richard Jennings	266403/161836
Moanmore 1	AR133	E3835	Richard Jennings	266476/162016
Moanmore 2	AR134	E3843	Sinead Phelan	266756/162866
Moanmore 3	AR135	E3837	Sinead Phelan	266856/163259
Bannagagole 1	AR136	E3844	Sinead Phelan	266942/163569
Moanduff 1	AR137	E3839	Robert Lynch	267261/164397
Coneykeare 1	AR138	E3683	Sinead Phelan	267836/166209
Coolnakisha 1	AR139	E3768	Ellen O'Carroll	268175/167274
Coolnakisha 2	AR140	E3767	Ellen O'Carroll	268306/167559
Cranavonane 1	AR141	E3842	Tim Coughlan	268554/167895
Cranavonane 2	AR142	E3732	Ellen O'Carroll	268830/168154
Cranavonane 3	AR143	E3731	Ellen O'Carroll	269123/168362
Tomard Lower 1	AR144	E3733	Ellen O'Carroll	269349/168496
Paulstown 1	AR145	E3642	Ruth Elliot	265889/158499
Paulstown 2	AR146	E3632	Ruth Elliot	265664/158651
Rathgarvan or Clifden 1	AR147	E3760	Przemaslaw Wierbicki	257026/154123
Maddockstown 1	AR148	E3759	Przemaslaw Wierbicki	256886/154199
Templemartin 3	AR149	E3845	Emma Devine	255095/155200
Templemartin 4	AR150	E3841	Emma Devine	254920/155427
Templemartin 5	AR151	E3846	Emma Devine	254706/155636
Templemartin 1	AR152	E3849	Emma Devine	254504/155826
Templemartin 2	AR153	E3847	Emma Devine	254173/156236
Leggetsrath East 1	AR154	E3734	Emma Devine	253793/156484
Moanduff 2	AR155	E3735	Sinead Phelan	267470/164887
Moanduff 3	AR156	E3736	Sinead Phelan	267515/164979
Ballyquirk 4	AR157	E3848	Richard Jennings	262596/157025
Shankill 1	AR158	E3766	Przemaslaw Wierbicki	265707/160269
Rathgarvan or Clifden 2	AR159	E3921	Tim Coughlan	257095/154119
Ballynolan 1	AR160	E3755	Sinead Phelan	267714/165597
Rathduff Upper 3	UA2	E3974	Tim Coughlan	250991/143565
Rathduff Bayley	UA4	E4011	Tim Coughlan	251005/143564