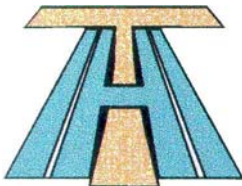
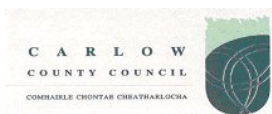


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N9/N10 KILCULLEN TO WATERFORD SCHEME, PHASE 4 – KNOCKTOPHER TO POWERSTOWN



Ministerial Scheme Reference No.	Direction	A032
Registration No.		E3737
Site Name		AR129, Shankill 3
Townland		Shankill
County		Kilkenny
Excavation Director		Richard Jennings
NGR		266052 161141
Chainage		66670

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	E3737
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	AR129, Shankill 3
Site Type	Charcoal pit
Townland(s)	Shankill
Parish	Shankill
County	Kilkenny
NGR (easting)	266052
NGR (northing)	161141
Chainage	66670
Height OD (m)	68.427
RMP No.	N/A
Excavation Dates	29 October–2 November 2007
Project Duration	20 March 2007–18 April 2008
Report Type	Final
Report Date	February 2011
Report By	Richard Jennings and Tim Coughlan
Report Reference	Jennings, R. and Coughlan, T. 2011 E3737 Shankill 3 Final Report. Unpublished Final Report. National Monuments Service, Department of the Environment, Heritage and Local Government, Dublin.

ACKNOWLEDGEMENTS

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.

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ABSTRACT

Irish Archaeological Consultancy Ltd (IAC), funded by the National Roads Authority (NRA) through Kilkenny County Council, undertook an excavation at the site of AR129, Shankill 3 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 E3737 issued by the DOEHLG in consultation with the National Museum of Ireland for IAC. The fieldwork took place between the 29 October and 2 November 2007.

Only one archaeological feature was discovered at site Shankill 3, a shallow pit/hearth containing three fills. No finds were recovered. The feature was possibly modern as the charcoal from the main fill appeared quite fresh. The site is undated.

The excavated archaeology at Shankill 3 is of minor significance at a local level. It adds some further evidence of past human activity to compliment the more significant sites excavated along the N9/N10 Phase 4 and may be indicative of further previously unknown archaeological features surviving outside the limits of the C.P.O.

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1 INTRODUCTION

1.1 General

This report presents the results of the archaeological excavation of Shankill 3, AR129 (Figure 1), in the townland of Shankill 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 218m² and was first identified during testing carried out between 27 March and 6 April 2007 by Richard Jennings (E3364) for IAC Ltd. on behalf of the National Roads Authority. Shankill 3 was excavated between 29 October and 2 November 2007 with a team of one director and five 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 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

This site was in a low lying field with a south-east aspect. The immediate terrain was well-drained pastureland. There were low lying hills in the distance to NNW, these continued down along to the west. The Blackstairs Mountains were visible on the horizon to the east and south-east. The most prominent peak of these is Mount Leinster. The peak of Brandon Hill was also quite prominent to the south. The Kilkenny-Carlow county border was immediately to the north of the site. A ringfort (KK016-004) is situated c. 320m to the south-east.

2.1 PHASE 1 Natural Drift Geology

Context	Fill of	L(m)	W(m)	D(m)	Basic Description	Interpretation
C2	N/A				Boulder Clay	Subsoil

The subsoil in this area was predominantly yellow boulder clay with few areas of gravel.

2.2 PHASE 2 Archaeological Activity

2.2.1 Pit/Hearth C6

Context	Fill of	L(m)	W(m)	D(m)	Basic Description	Interpretation
C3	C6	3.1	1.7	0.12	Dark brownish grey silty clay	Upper fill of pit C6
C4	C6	N/A	N/A	N/A	Reddish clay fill in the SW part of the feature	Burnt clay, burning
C5	C6	N/A	N/A	0.1	Soft mid grey clayey silt	Fire remains
C6	N/A	2.8	1.6	0.12	Oval cut with rounded corners	Pit / hearth

Finds: None

A sub-rectangular-shaped feature, C6 (Figure 4; Plates 1–2), was discovered in an isolated location in a field of pasture containing occasional rushes. It was a shallow feature with one vertical and three non-perceptible sides and a flat base. The base was scorched from a fire (C4) and its two fills (C3 and C5) represented fire debris. C5 was a mid-grey to black, silty clay which was extremely rich in fresh looking charcoal flecks and inclusions. C3, the upper fill, contained charcoal that was not well charred and almost root-like in some places.

The presence of *in situ* burning indicates this feature represents a fire pit or hearth. The presence of fresh charcoal raises the possibility that it was possibly modern.

Charcoal was retrieved from pit fill C5 during post-excavation soil flotation. This was subsequently identified to species. Fragments of oak charcoal (*Quercus* sp.) were identified (Lyons, Appendix 2.1). Oak was the only species recorded from C5 and is therefore likely to represent the wood burnt as fuel within this feature.

Given the isolated nature of the feature, and the possibility of a modern date it was decided not to send samples for radiocarbon dating.

2.3 PHASE 3 Topsoil and Plough Soil

Context	Fill of	L(m)	W(m)	D(m)	Basic Description	Interpretation
C1	N/A				Soft mid-dark-brown clayey silt	Topsoil

Finds: None

The topsoil was made up of dark-brown, clayey silt with occasional small stones.

3 SYNTHESIS

The synthesis presents the combined results of all of the archaeological analysis carried out at Shankill 3. 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

3.1.1 The General Landscape – compiled by Michelle Brick

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 Mounthugent 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 Durrrow (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

Portarlinton, 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. Shankill 3 is located in the northern landscape area.

3.1.2 The Northern Landscape

The northern landscape of the N9/N10 crosses the border from Kilkenny into Carlow and traverses the western side of the River Barrow; the Blackstairs Mountains, which are of granite formation, are located to the east of the Barrow. It includes 50 sites discovered during the Phase 4 excavations stretching from Rathcash 1 northwards to Tomard Lower 1. This northern landscape is overlooked to the west by the Castlecomer Plateau, and the excavated sites are all situated on contours of 50–100m OD. From the south-west of the Barrow, and encroaching into the northern landscape, the underlying limestone is dolomitized and consequently the permeability has been increased. The glacial drift comprises slightly sandy (20–60%) slightly gravely clays with a moisture content of 10–20%. There is therefore significantly less sand but higher moisture content than in the southern and central landscapes. This moisture occurs in the wetter deposits in the top 1–2m before ground level in localised areas with silty sand and gravel lenses indicating a high water table. To the east of the River Barrow, localised silty, laminated clays and peat occur. Soft ground was noted in the river's floodplain. The area is also classified as a minor aquifer in the Kilkenny Groundwater Protection Scheme (Buckley & Fitzsimmons, 2002) due to these thick sand and gravel deposits. Progressing northwards, the views become more expansive, and the rising high ground of the Castlecomer Plateau (50–300m OD) bounds the distant landscape. This plateau consists of a variety of hills and peaks, which contain seams of anthracite, the focus of coal mining in the region from the 17th century..The Blackstairs Mountains (735m) are visible on the horizon to the south-east, and most obvious of these is the peak of Mount Leinster (795m). There are impressive views from these plateaus and hills especially to the south, east and west over the Barrow and Nore Valleys.

The prevailing watercourse of this region is the River Barrow which travels north-south through the landscape. The Maudlin River is a tributary of the River Barrow and flows from the west through Old Leighlin; minor tributaries of this river flow through Bannagagole, directly north of Moanmore, and the River Dinin is a tributary of the River Nore which travels south-west from Brennan's Hill through the Castlecomer Plateau. The suffix 'comer' signifies a meeting of the rivers; it also signifies any deep gripe, such, for instance, as the channel formed by a mountain stream (Carrigan 1905). From the hinterland of Kilkenny and the confluence of the Nore and Barrow the Monefelim River contributes to the occurrence of wet grassland and broadleaf woodland. The narrow tributaries of the River Barrow, including the Monefelim River, as well as the Maudlin River, flow from the higher, steep, escarpment located to the west. Subsoils in this area consist of undifferentiated alluvium and soils of mineral alluvium. The route crosses into County Carlow where at Moanmore (meaning 'great

bog') a variety of archaeological features have been recorded. At the most northerly point of the N9/N10 the land is again characterised by its views; here they include the Barrow Valley, Mount Leinster, Brandon Hill, and the Blackstairs Mountains.

3.1.3 Site Specific Landscape

This site was in a low lying field with a south-east aspect. The immediate terrain was well-drained pastureland. There were low lying hills in the distance to NNW, these continued down along to the west. The Blackstairs Mountains were visible on the horizon to the east and south-east. The most prominent peak of these is Mount Leinster. The peak of Brandon Hill was also quite prominent to the south. The Kilkenny-Carlow county border was immediately to the north of the site.

3.2 The Archaeological Landscape

As part of the general research relating to sites along the scheme and the specific research relating to Shankill 3, 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 Shankill 3 is undated and has been identified as being of minor archaeological significance.

3.2.1 The Site Specific Archaeological Landscape of Shankill 3

There is evidence of prehistoric activity 300m to the west of the site in the form a *fulacht fiadh* (KK016-003). These monuments are generally dated to the Bronze Age. A settlement hearth site (KK016-002) is located 350 to the north-west of the site. The site is located 1km to the north of a linear earthwork (KK021-006), referred to as the Rathduff Dyke, which is reputed to be Iron Age in date. Early medieval evidence from the surrounding landscape can be seen from a ringfort (KK016-004) c. 350m to the east of Shankill 3.

There is little archaeological evidence from the N9/N10 Phase 4: Knocktopher to Powerstown excavations in the immediate vicinity. A medieval kiln was excavated at Shankill 2 c. 200m to the south. Shankill 1 was located c. 900m to the SSW and a small portion of the linear earthwork known as the Rathduff Dyke was excavated. An early Bronze Age temporary structure/shelter located c. 450m to the north was excavated at Shankill 4. Shankill 5 was situated c. 550m to the NNE where the possible remnants of a structure were excavated. The slot-trenches may have served as an entrance porch to a larger structure, no longer extant, or may have been part of a small platform unrelated to a habitation dwelling. A nearby group of four shallow postholes may have formed a similar structure. A large stone-filled pit and three other shallow pits, one of which has been dated to the early Iron Age period, four stakeholes and a pit filled with hearth waste which has dated to the medieval period were the only other features of note on the site. It is likely that this site had a number of occupation phases as a stone axe was recovered during the cleaning back of the site ahead of its excavation and one sherd of Beaker pottery was recovered from topsoil. Shankill 6 was located c. 750m to the NNE and four undated small spreads/deposits were excavated at this site. They were the remnants of burnt mound material but no features associated with this type of monument were found and the material appeared to have washed into the area and had silted up in naturally formed depressions.

3.3 Summary of the Excavation Results

The remains of a small isolated possible hearth were identified at Shankill 3. There were no other archaeological features in the immediate vicinity and it was felt that the feature may have been modern.

3.4 Summary of the Specialist Analysis

A number of specialists provided analysis of samples recovered from the scheme as part of the post-excavation works. The detailed reports on the results of all analysis are in Appendix 2

Charcoal and Wood Species identification

Oak was the only species recorded from C5 (fill of pit C6) and represents the wood burnt within this feature.

4 DISCUSSION AND CONCLUSIONS

4.1 Discussion

The nature of the possible archaeological material identified at Shankill is minor in terms of its local significance. The single archaeological hearth feature is isolated and not directly related to any other sites, and as it is undated it cannot be linked chronologically to other activity in the area.

The surrounding archaeological landscape indicates an area not intensively settled in the past with the nearest monuments over 300m away consisting of a fulacht fiadh and a ringfort. The other significant monument in the landscape is the large Iron Age linear earthwork (KK021-006) a section of which was excavated as part of the current scheme - Shankill 1. Excavated evidence from within the scheme is also sparse, again with the nearest sites over 450m away. All of this activity shows a continuity of settlement in the area from the early Bronze Age, although it is quite sparse and in this context further isolated archaeological deposits are to be expected within the landscape.

4.2 Conclusions

The excavated archaeology at Shankill 3 is of minor significance at a local level. It adds some further evidence of past human activity to compliment the more significant sites excavated along the N9/N10 Phase 4 and may be indicative of further previously unknown archaeological features surviving outside the limits of the CPO.

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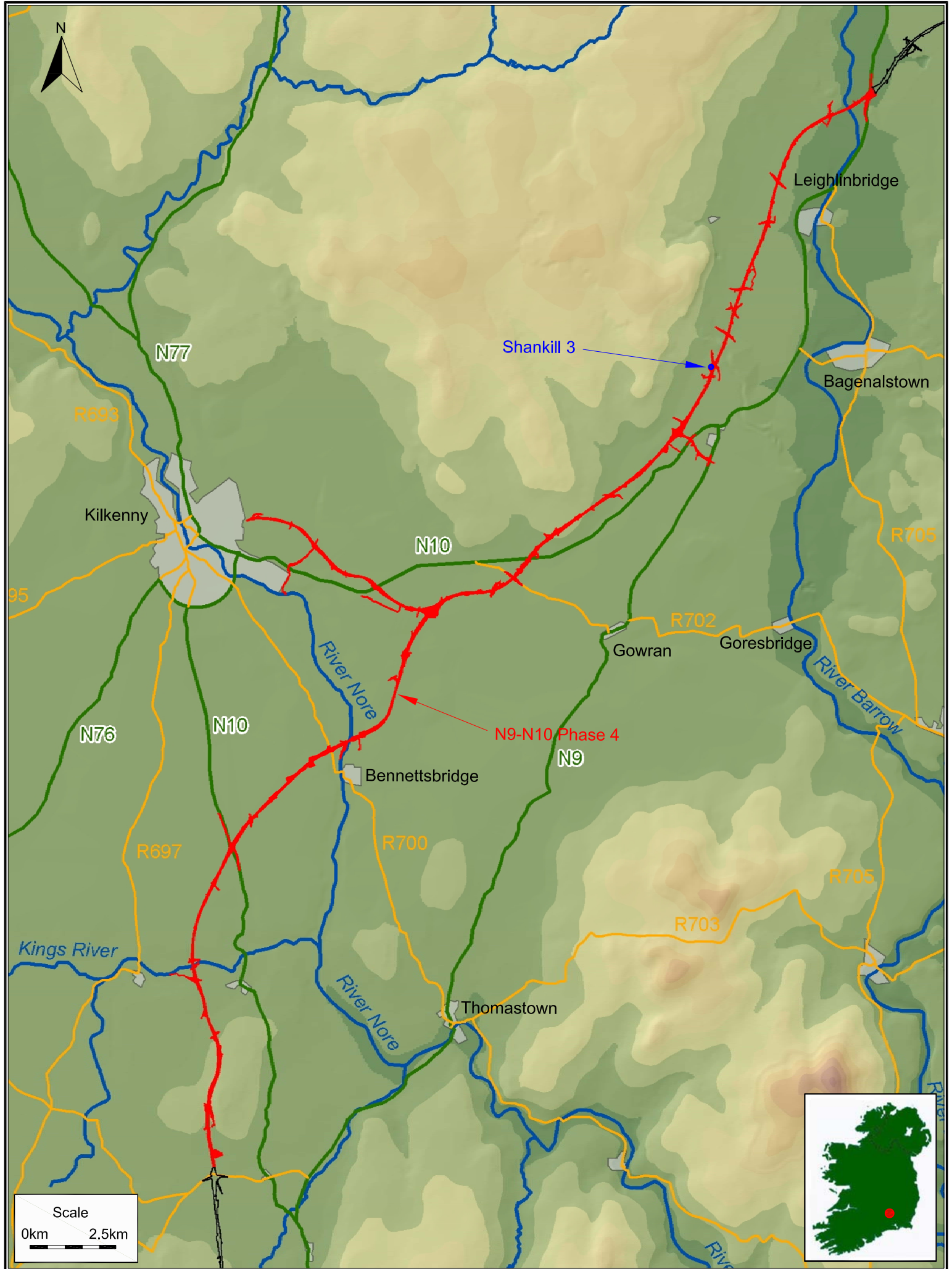
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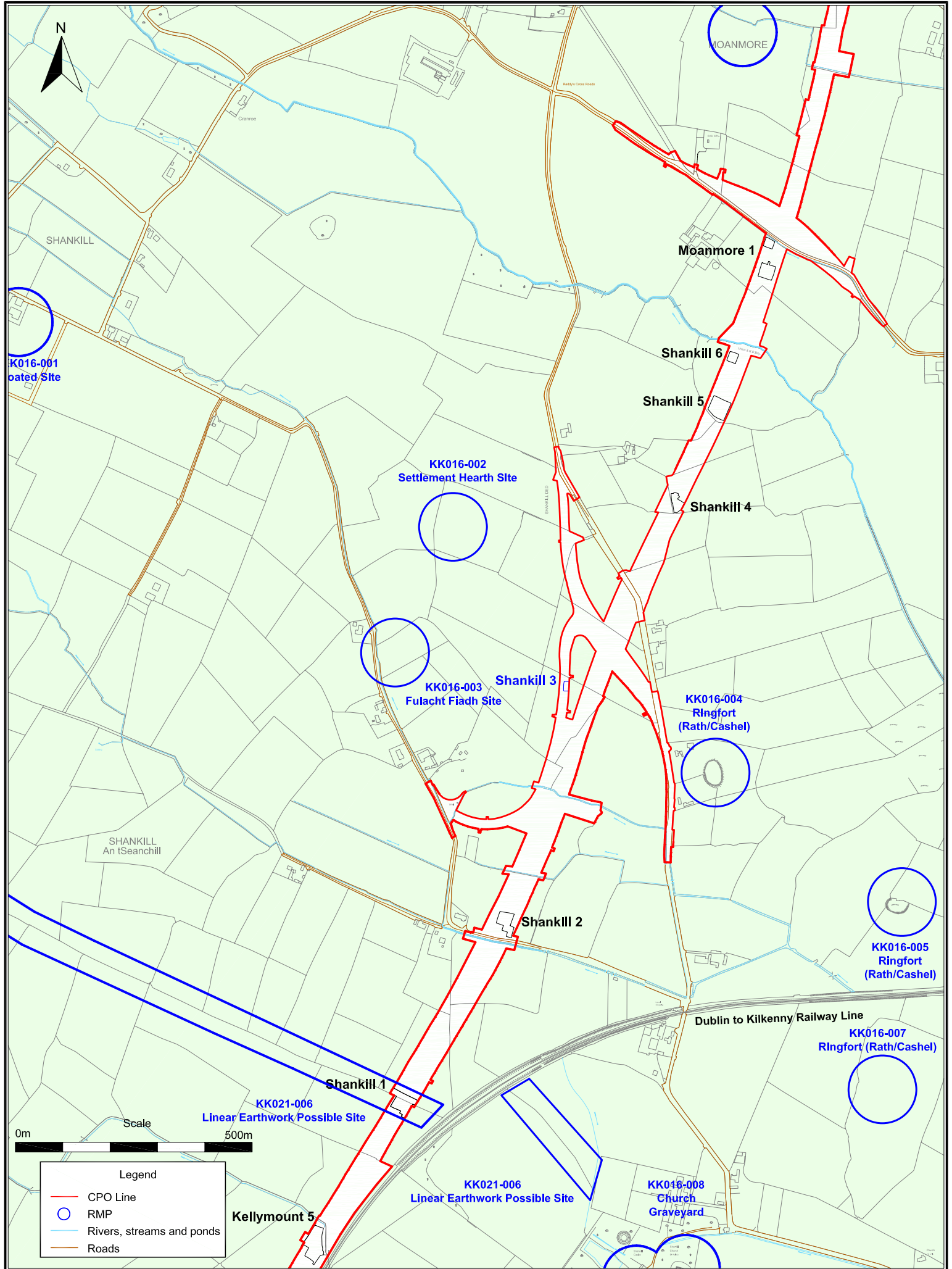
Topographical Files of the National Museum of Ireland, Kildare Street, Dublin 2.

Electronic references

ENVision; *Environmental Protection Agency* Soil maps of Ireland
<http://www.epa.ie/InternetMapView/mapviewer.aspx>



Title: Shankill 3 - General Site Location	Scale: As Shown
Project: N9-N10 Phase 4: Knocktopher to Powerstown	Date: 31/05/10
Client: Kilkenny County Council	Produced by: P Higgins Job No: J2432 Figure No: 1





Shankill 3

Scale
0m 25m

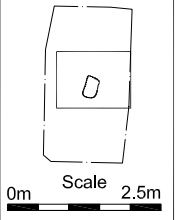
Legend

- Waterways and ponds
- Roads
- Site Extents
- Field Boundary
- CPO

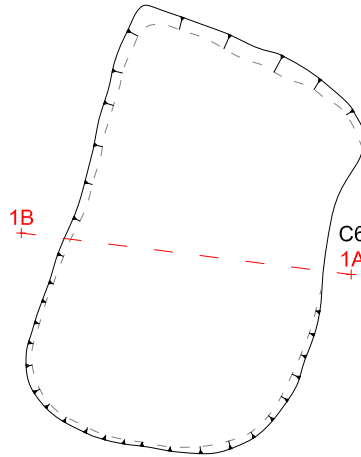


266049,
161145
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Location of Plan



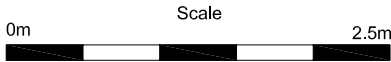
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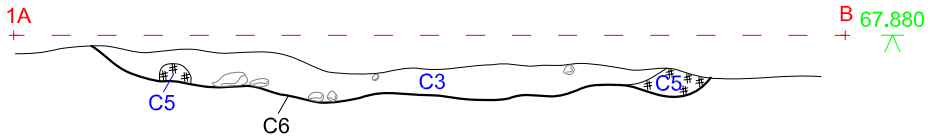
67.79
^



Legend

- Break of slope
- - - Sections
- CXX Cut numbers
- XXXXXXE National Grid Reference
- XXXXXXN National Grid Reference
- XX.XXX Levels - metres OD

South facing section of C6



Legend

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

PLATES



Plate 1: Pit/hearth C6, pre-excitation, facing south



Plate 2: Pit/hearth C6, post-excitation, facing west

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
C1	N/A				Topsoil	Soft, mid–dark-brown, clayey silt		C2
C2	N/A				Subsoil	Boulder clay	C1	
C3	C6	3.1	1.7	0.12	Upper fill of pit C6	Fill consisting of soft dark brownish/grey silty clay	C1	C5
C4	C6	N/A	N/A	N/A	Substantial amount of burnt clay, evidence of <i>in situ</i> burning	Fill situated in the SW part of the feature, consisting of, soft but powdery reddish/orange baked clay	C5	C6
C5	C6	N/A	N/A	0.1	Oval patchy areas of charcoal rich lenses, evidence of <i>in situ</i> burning.	Fill consisting of soft mid grey to black clayey silt.	C3	C4
C6	N/A	2.8	1.6	0.12	The base of the cut shows evidence of scouring that indicates high temperature and <i>in situ</i> burning, suggesting that this cut was made for a hearth	Oval cut with rounded corners, vertical side at SW segment of cut, not perceptible elsewhere. Flat base	C4	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 three soil samples were taken from features at Shankill 3 and 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 & Hazelnut	Animal bone	Burnt animal bone	human bone	Shell	Heat-affected Stone
C5	1	<i>In situ</i> burning	53.1g						
C5	2	<i>In situ</i> burning	34.3g						
C5	3	<i>In situ</i> burning	42.1g						

Appendix 1.4 Archive Index

Project: N9/N10 Phase 4 Knocktopher to Powerstown		
Site Name: Shankill 3 AR129		
Excavation Registration Number: E3737		
Site director: Richard Jennings		
Date: July 2010		
Field Records	Items (quantity)	Comments
Site drawings (plans)	2	
Site sections, profiles, elevations	1	
Other plans, sketches, etc.	0	
Timber drawings	0	
Stone structural drawings	0	
Site diary/note books	1 together with other sites	
Site registers (folders)	1	
Survey/levels data (origin information)	3	
Context sheets	6	
Wood Sheets	0	
Skeleton Sheets	0	
Worked stone sheets	0	
Digital photographs	12	
Photographs (print)	0	
Photographs (slide)	0	
Security copy of archive	Yes	digital

APPENDIX 2 SPECIALIST REPORTS

Appendix 2.1 Charcoal and Wood Report – Susan Lyons

Appendix 2.1 Charcoal and Wood Report – Susan Lyons

Client – Irish Archaeological Consultancy Ltd

Site Name- Shankill

Excavation number –E3737 AR129

County – Kilkenny

Job code –100.83

Author- Susan Lyons

Date –16/09/09

Introduction

One charcoal sample was identified and analysed from excavations at Shankill, Co. Kilkenny as part of the resolution of the N9/N10 Kilcullen to Waterford Scheme, Phase 4B – Rathclogh to Powerstown. The site contained just one pit/hearth (C6) feature which contained three fills and evidence for *in situ* burning. No finds were retrieved from the pit and it was therefore considered to be modern in date (Jennings, 2009).

It is generally considered that the principle reason for charcoal analysis is the hypothesis that wood used as firewood will be collected from as close to a site as possible and as such can help to reflect the local wooded environment in the area. It is also likely that abandoned structural timbers or wood brought to the site for uses in construction works or other activities are also reused as firewood. The charcoal identified can also go some way to interpreting the local woodland that grew in the vicinity of the site and possible changes to that woodland over time. This charcoal report serves as a summary report only for Shankill and will later form part of an overall scheme-wide charcoal study for 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 high clay content will be soaked in water for 1-2 days to aid the sieving process.

Charcoal identifications

Charcoal analysis was carried out on C5 (fill of pit C6).

The charcoal fragments (>3mm in width) are fractured to view the three planes [transverse, radial and tangential sections] necessary for microscopic wood identification. The wood species identifications are conducted under a binocular microscope using a trancident light and viewed at magnifications of 100x, 200x and 400x where applicable.

Wood species identifications are made using wood reference slides and wood keys devised by Franklin and Brazier (1961), Schweingruber (1978), Hather (2000) and the

International Association of Wood Anatomists (IAWA) wood identification manuals and (www.lib.ncsu.edu/insidewood) by Wheeler, Bass and Gasson (1989).

Quantifying charcoal samples can be difficult as many wood species can be affected by heat in different ways and hence become fragmented into an arbitrary number of fragments. Due to the potential for a very high number of charcoal fragments from the samples, a representative sample of 50 charcoal fragments (Keepax, 1988) are randomly chosen from larger samples for identification and analysis. In the case of smaller samples all charcoal fragments within are identified. The charcoal fragments of each species identified are counted, weighted (grams) and bagged according to species.

Details of charcoal recording

The general age group of each taxa per sample is recorded, and the growth rates are 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 are 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 is considered to be approximately 0.4mm per annum, medium approximately 1mm per annum and fast approximately 2.2mm per annum.

The ring curvature is also noted where applicable from each charcoal fragment. Weakly curved annual rings suggest the use of trunks or larger branches, while strongly curved annual rings indicate the burning of smaller branches or twigs Fig. 1. Tyloses within the vessels of species such as oak can denote the presence of heartwood. These are balloon-like outgrowths of adjacent parenchyma cells of xylem vessels (vascular tissue used to transport water and minerals). When the plant is subjected to stressful conditions, tyloses will develop and block the vascular tissue to prevent further damage to the plant.

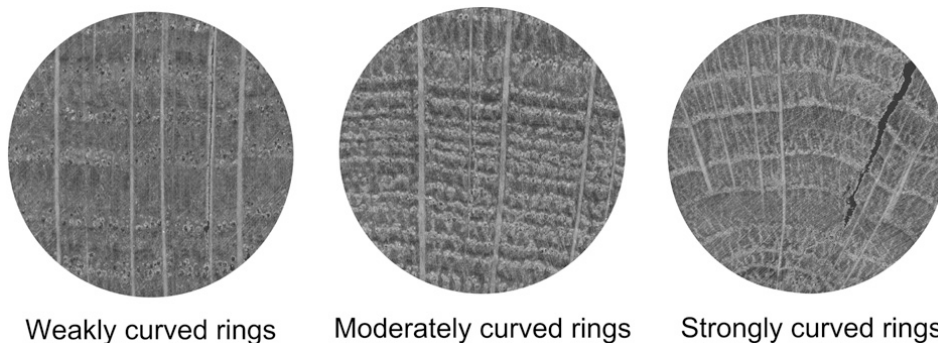


Fig. 1. Ring curvature (after Marguerie and Hunot 2007 1421, Fig. 3)

Results

The results of the charcoal identifications are summarized in Table 1

Oak was the only species recorded from C5 (fill of pit C6) recorded in relatively high concentrations.

Discussion

Oak was the only species recorded from C5 (fill of pit C6) is therefore likely to represent the wood burnt as fuel within this feature. Oak is a tall deciduous woodland tree, often growing in association with hazel and ash. Most species prefer damp, non-calcareous soils on lowland or montane sites. Of the 27 European species, pedunculate oak (*Quercus robur*) and sessile oak (*Quercus petraea*) are native to

Ireland. Pedunculate oak is common on heavy clay lowland soils whereas sessile oak thrives on the lighter loams characteristic of higher ground (Culter & Gale, 2000). The wood is easy to cleave both radially and tangentially and has provided one of the most important building materials since the prehistoric period (Gale & Culter, 2000). The heartwood timber is renowned for its durability but the paler sapwood is susceptible to beetle and fungal attack. The strength of the timber depends on the species and is influenced by climatic and edaphic factors (Edlin, 1951). When burnt, oak charcoal, particularly the dense heartwood, has higher calorific values than most European woods and this can make for good long-lasting fuel (Culter & Gale, 2000).

Summary

Oak was the only species recorded from C5 (fill of pit C6) and represents the wood burnt within this feature.

References

- Brazier, J. D. and Franklin, G. L. 1961 *Identification of hardwoods: a microscopic key*. London: H.M Stationary Office
- Edlin, H. L. 1951 *British plants and their uses*. London B T Batsford
- Gale, R. & Cutler, D. 2000 *Plants in Archaeology: Identification manual of artefact of plant origin from Europe and the Mediterranean*. Westbury and the Royal Botanic Gardens Kew
- Hather, J.G. 2000. *The Identification of the Northern European Woods. A guide for archaeologists and conservators*. London: Archetype Publications Ltd
- Jennings, R. 2009 'N9/N10 Kilcullen to Waterford Scheme Phase 4B: Rathclogh to Powerstown: AR129 Shankill' IAC Ltd Stratigraphical Report
- Keepax, C. A. 1988. Charcoal Analysis with Particular Reference to Archaeological Sites in Britain. Unpublished PhD thesis, University of London
- Marguerie, D. and Hunot, J. Y. 2007 Charcoal analysis and dendrology: data from archaeological sites in north-western France. *Journal of Archaeological Science* **34** 1417–1433
- Schweingruber, F. H. 1978 *Microscopic wood anatomy*. Birmensdorf: Swiss Federal Institute for Forest, Snow and Landscape Research
- Wheeler, E. A., Bass, P. & Gasson, P. E. 1989 *IAWA list of microscopic features for hardwood identification* IAWA Bulletin nos. 10 (3): 219–332. Rijksherbarium: Leiden

Table 1 Charcoal identification results from Shankill (E3737)

Context number	Sample number	Flot volume (grams)	Context description	Wood Species Identifications	No. of fragments	Charcoal weights (grams)	Size of fragments (mm)	No. of growth rings	Growth ring curvature	Comments
005	001	53.1 grams	Fill of pit C6	Quercus sp. (oak)	50	4.4 grams	4mm - 13mm	4 - 7rings	weak	

APPENDIX 3 LIST OF RMP IN AREA

RMP No	Description
KK016-002	Hearth
KK016-003	Fulacht fiadh
KK016-004	Ringfort
KK016-005	Ringfort
KK016-007	Ringfort
KK016-008001	Church
KK016-008002	Graveyard

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 1	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
Stonecarthy West 2	UA2	E3974	Tim Coughlan	251372/142037
Rathduff Bayley 1	UA4	E4011	Tim Coughlan	251005/143564