

Archaeological Strip, Map and Record Report



Planning Reference: 12/2530/03 Ref: 85731.03 November 2014





Archaeological Strip, Map and Record Report

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Planning reference: 12/2530/03 Report reference: 85731.03

November 2014



Quality Assurance

Project Code	85731	Accession Code		Client Ref.	
Planning Application reference	12/2530/03	Ordnance Survey National Grid Reference	295785 09028	0	

Version	Status*	Prepared by	Checked and approved by	Approver's signature	Date
v01	E	PF	SF	SF-	7/11/14
File:	\\projects	server\wessex\PROJ	ECTS\85731\Re	eport\Assess_rep\85731	
V02	F	SF	ADC	A.D. Croslett	10/11/14
File:	\\projects	server\wessex\PROJ	ECTS\85731\Re	eport\Assess_rep\85731.v02	
File:					
File:					
File:					

^{*} I = Internal Draft; E = External Draft; F = Final

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Summary

Wessex Archaeology was commissioned by Heritage Developments South West Limited to undertake a programme of archaeological works prior to development of land between Old Rydon Lane and Newcourt House, and to the west of Newcourt Drive, Exeter, centred on NGR 295785 090280.

The archaeological mitigation was required as part of the planning permission issued to the Client by Exeter City Council (Planning Reference 12/2530/03) for a residential development comprising the construction of 46 new dwellings and highway access.

A geophysical survey and trial trench evaluation were completed on the western part of the site, and have been reported on separately. To the east a narrow parcel of land, measuring approximately 0.21ha, was adjacent to an area of proven archaeological potential, and it was therefore agreed that a single phase of strip, map and record investigation would be undertaken.

The machine excavation identified a line of nine circular pits of uncertain character, extent, function and date. Eight of the pits appear to lie on an arc with a projected diameter of between 62m and 68m, possibly forming a circular post ring monument, with the ninth, at the south, being a potential outlier.

The pits ranged in size from 0.5–1m in diameter, and 0.17–0.5m deep, and had variable profiles. There was no indication that the pits had held posts, although that possibility cannot be entirely ruled out, or that they had been used for the deposition of cultural material. It appears that they had remained open for long enough for some erosion of the sides, but it is uncertain whether or not they had then been left to fill in through natural processes or had been deliberately backfilled.

Three radiocarbon dates were obtained on samples submitted to the Scottish Universities Environmental Research Centre (SUERC). The results (on mature oak and short-lived hazelnut shell) gave varying dates, falling within the Early Neolithic, the Middle Neolithic and the Early Bronze Age, but could potentially derive from just two burning events, one in the Middle Neolithic, the other around the end of the Early Bronze Age. However, it is possible that none of the dated material relates directly to the pits, but may have been either residual or intrusive.

It is proposed that the results of the fieldwork should be published as a short note in *The Proceedings of the Devon Archaeological Society*.



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Acknowledgements

This project was commissioned by Heritage Developments South West Limited and Wessex Archaeology would like to thank David Lovell and Guy Oliver in this regard. Wessex Archaeology would also like to thank the Archaeology Officer Andrew Pye (Exeter City Council), for his advice during the project.

The strip, map and record investigation was undertaken by Peter Fairclough, assisted by John Martin and Ray Kennedy. This report was written and compiled by Peter Fairclough and the illustrations prepared by Nancy Dixon. The bulk samples were assessed by Sarah F. Wyles. The wood charcoal was assessed by Dr Catherine Barnett. Soils and sediments were assessed by Nicki Mulhall and David Norcott.

The project was managed for Wessex Archaeology by Sue Farr.



Archaeological Strip, Map and Record Report

1 INTRODUCTION

1.1 Project background

- 1.1.1 Wessex Archaeology was commissioned by Heritage Developments South West Limited ('the Client') to undertake a programme of archaeological mitigation works prior to development of land between Old Rydon Lane and Newcourt House, Exeter (Figure 1), centred on NGR 295785 090280 (hereafter 'the Site'). The works were required as a condition of the planning consent issued to the Client by Exeter City Council (ECC) (Planning Reference 12/2530/03) for a residential development of 46 new dwellings and highway access.
- 1.1.2 Condition 8 stated: No development related works shall take place within the site until a written scheme of archaeological work has been submitted to and approved in writing by the Local Planning Authority. This scheme shall include on-site work, and off-site work such as the analysis, publication, and archiving of the results, together with a timetable for completion of each element. All works shall be carried out and completed in accordance with the approved scheme, unless otherwise agreed in writing by the Local Planning Authority.
- 1.1.3 A Written Scheme of Investigation (WSI; Wessex Archaeology 2013a) outlining a programme of archaeological mitigation, including trial trench evaluation, strip, map and record excavation and watching brief, was submitted and approved by the Archaeology Officer at ECC.
- 1.1.4 The evaluation (Wessex Archaeology 2013b) comprised the machine excavation of four trenches to 'ground truth' the results of an earlier geophysical survey (Wessex Archaeology 2012) within the north-western part of the Site. The archaeological potential was low, and as a result, no further mitigation was required in that area. Based on the results of an earlier evaluation (John Moore Heritage Services 2007) to the east of the Site, a narrow strip of land to the east of the evaluation was considered to have a high archaeological potential and it was therefore agreed a single phase of fieldwork would be undertaken.
- 1.1.5 The area was subject to a strip, map and record excavation in September to October 2013, and the results of that investigation form the basis of this assessment report.

1.2 Location, topography and geology

- 1.2.1 The Site comprises a narrow parcel of land measuring 2059m², and lies to the immediate west of the driveway to Newcourt House which runs south from Old Rydon Lane (**Figure 1**). Newcourt House is a Grade II Listed building (list entry 1223319).
- 1.2.2 The ground undulates slightly, ranging from 25m above Ordnance Datum (aOD) at the north-west to 16m aOD at centre, and 20m aOD at the south-east. The underlying



geology of the Site is Dawlish Sandstone Formation, with is overlain by River Terrace Deposits 5 (Sand and Gravel) (British Geological Survey online viewer).

2 ARCHAEOLOGICAL BACKGROUND

- 2.1.1 A substantial amount of archaeological work has preceded and accompanied the development of the land to the north and east of the Site. Prehistoric remains, including an enclosure with a round house, were found north of Old Rydon Lane. A desk-based assessment (John Moore Heritage Services 2006) concluded there was also a high potential for prehistoric activity in the area to the east, and a subsequent geophysical survey (Stratascan 2006) identified a possible circular feature, along with linear and pit-like anomalies, while an evaluation identified several probable prehistoric pits, post-holes, and ditches, including some within the trenches directly adjacent to the driveway to Newcourt House (John Moore Heritage Services 2007).
- 2.1.2 Probable prehistoric features were also recorded during the evaluation of the Former Royal Naval Supply Depot Upper Site to the north (Steinmetzer 2007), and included a post-pit alignment in the north-west corner of the site, which has been radiocarbon dated to the early Neolithic, and three curving ditches indicative of either round houses or round barrow ring ditches. Other ditches and gullies were associated with either a settlement or formalised field/plot divisions. A ditch in the south-west corner of the site contained a large part of a middle Bronze Age pottery vessel, and there were adjacent pits and linear features. A small quantity of prehistoric worked flint was also recovered.

3 METHODOLOGY

3.1 Aims and objectives

- 3.1.1 Prior to the commencement of the works a WSI was submitted to and approved by Archaeology Officer at ECC, and detailed the standards and specifications of the fieldwork (Wessex Archaeology 2013a). All excavation and recording was undertaken in accordance with the requirements of the WSI, and the Institute for Archaeologists Standard and guidance for archaeological excavation (IfA 2008).
- 3.1.2 The objective of the proposed mitigation was to establish within the constraints of the agreed methodology, the presence or absence, location, extent, date, character, condition, and depth of any surviving remains which may be affected by the proposed works.
- 3.1.3 If present, it was proposed to fully excavate and record the archaeology where impacted by the development. The results and any finds would then be conserved, analysed, reported and archived as appropriate.

3.2 Fieldwork methodology

3.2.1 Prior to machining, the investigation areas were scanned using a cable avoidance tool (CAT) by operatives trained in the use of such equipment. The Site was machine stripped using a 360° mechanical excavator fitted with a 2m wide toothless ditching bucket and was supervised by a suitably qualified archaeologist at all times. Topsoil and subsoil were removed by machine in a series of level spits to the top of the archaeological levels, or natural deposits, whichever was encountered first. Archaeological features were then mapped, sample excavated and recorded.



- 3.2.2 Site survey was carried out using a Leica Viva series GNSS unit using the OS National GPS Network through an RTK network with a 3D accuracy of 30mm or below. All survey data was recorded using the OSGB36 British National Grid coordinate system.
- 3.2.3 All work was carried out in accordance with the *Health and Safety at Work etc. Act* 1974 and the *Management of Health and Safety Regulations* 1992, and all other relevant Health and Safety legislation, regulations and codes of practice in force at the time.

3.3 Recording

- 3.3.1 All archaeological deposits were recorded using Wessex Archaeology's *pro forma* recording system, with a unique numbering system for individual contexts. Full written and photographic records were made. Plans and sections were produced at a scale of 1:20 and 1:10 respectively; these were referred to the Ordnance Survey National Grid.
- 3.3.2 The spot height of all principal features and levels was calculated in metres relative to Ordnance Datum, correct to two decimal places. Plans and sections have been annotated with spot heights as appropriate.
- 3.3.3 All finds and environmental samples were processed according to procedures set out in WA's policies and guidelines on finds analysis, environmental sampling and archive preparation, and in accordance with the Institute for Archaeologists' Standard and guidance for the collection, documentation, conservation and research of archaeological materials (IfA 2008).

4 ARCHAEOLGOICAL RESULTS

4.1 Deposit sequence

- 4.1.1 The stratigraphic sequence across the Site was relatively consistent, and comprised a mid brown sandy loam topsoil averaging 0.25m thick, overlying a mid reddish-brown sandy clay subsoil 0.15–0.3m deep, above the natural geology.
- 4.1.2 Due to the sloping topography of the Site, and its location in the sides of a natural valley, a number of colluvial deposits were recorded underlying the subsoil. The majority of the colluvium was light reddish brown or mid brownish red sandy clay. Colluvium was recorded with a minimum depth of 0.20m, and a maximum depth of 0.85m.
- 4.1.3 One tree-throw hole and several modern root/animal burrows were investigated but not recorded in detail.

4.2 Archaeological features

4.2.1 A 46m long irregular line of nine circular pits was recorded running approximately south to north across the Site (south–north: 105, 107, 110, 113, 116, 121, 118, 127 and 124) (cover photo). All but the most southerly pit (105) appear to form an arc, running to the east, and it may be that pit 105, which lies outside this arc, is neither associated with the other pits, nor contemporary with them. Alternatively, the apparent regularity of the arc may be fortuitous, and it may be that all the pits simply lie on an irregular, curving line and are therefore all potentially associated.



- 4.2.2 The majority of the pits on the arc were evenly spaced, between 4.6m and 5.2m apart (centre to centre); a wider gap (of 9.6m) between pits **113** and **110** may be due to the complete truncation of an intervening pit; there was also a wide gap (of 7.4m) between pits **107** and **105** at the southern end.
- 4.2.3 The pits ranged in size from 0.5–1m in diameter, and 0.17–0.5m deep, and had variable profiles. Pit 107 (Figure 2; section 2), for example, had near-vertical sides and a flat base, while pit 124 (Figure 2; section 9) had relatively shallow concave sides and a concave base. However, seven of the pits (107, 110, 113, 121, 118, 127 and 124) contained broadly similar sequences of two fills, with a thinner basal fill consisting of a pale grey sand derived from the natural geology, and the upper fills (and the single fills of pits 105 and 116) comprising more mixed soil containing charcoal fragments and occasional pieces of stone (Figure 2).
- 4.2.4 No finds were recovered from any of the pit fills. However, individual identified charcoal fragments from the charred assemblage extracted from bulk environmental samples provided radiocarbon dates for two of the pits with one date obtained from pit **116** (on the possible arc), and two, albeit with inconsistent, dates from outlying pit **105**.
- 4.2.5 A piece of mature oak from pit **116** produced an Early Neolithic date of 3640–3370 cal BC (SUERC-53002, 4719±27 BP). Hazelnut shell in pit **105** produced a Middle Neolithic date of 3360–3030 cal BC (SUERC-53000, 4493±30 BP). A second date from pit **105**, on mature oak, gave an Early Bronze Age date of 1880–1680 cal BC (SUERC-53001, 3347±27 BP).

4.3 Modern features

4.3.1 Two concrete slabs (not shown on **Figure 1**), measuring 15m by 10m, were recorded; these formed the bases for Nissan huts that had previously occupied the Site during World War II.

5 ENVIRONMENTAL EVIDENCE

- 5.1.1 Eight bulk samples of 10–20 litres taken from the pits were processed for the recovery and assessment of charred plant remains and wood charcoal. They were processed by standard flotation methods; the flot retained on a 0.5mm mesh, residues fractionated into 5.6mm, 2mm and 1mm fractions and dried. The coarse fractions (>5.6mm) were sorted, weighed and discarded. The flots were scanned under a x10 x40 stereo-binocular microscope and the preservation and nature of the charred plant and wood charcoal remains recorded in **Appendix 1:Table 1**. Preliminary identifications of dominant or important taxa are noted below, following the nomenclature of Stace (1997).
- 5.1.2 The flots were generally large with varying quantities of roots and modern seeds that may be indicative of stratigraphic movement and the possibility of contamination by later intrusive elements. Charred material comprised varying degrees of preservation.
- 5.1.3 A monolith was taken from undated pit **127** to understand the depositional process of the deposits within it.



5.2 Charred plant remains

- 5.2.1 Very few charred plant remains were observed in the bulk samples. These included a few fragments of hazelnut shell (*Corylus avellana*) and a seed of bedstraw (*Galium* sp.) from pit **105**, and a small seed of vetch/wild pea (*Vicia/Lathyrus* sp.) from pit **110**.
- 5.2.2 The composition of the charred plant assemblages from a number of Neolithic deposits in southern Britain has indicated the exploitation of the wild food resource during this period (Moffett *et al.* 1989; Stevens 2007; Robinson 2000). The plant assemblages recovered from the pits would be compatible with a Neolithic or Early Bronze Age date but are too small to be indicative of a date with any degree of certainty.
- 5.2.3 There is no potential for the analysis of the charred plant assemblages to provide information on the nature of the settlement and the local environment due to the paucity of remains recovered.

5.3 Wood charcoal

- 5.3.1 Wood charcoal was noted from the flots of the bulk samples. Large quantities of wood charcoal fragments greater than 4mm were retrieved from five pits, in particular pits **107** and **116**. The charcoal included mature wood fragments, with no obvious round or twig wood observed.
- 5.3.2 The assemblages were quickly scanned in order to select suitable pieces for the radiocarbon dating of pits **116** and **105**. All of the pieces examined from the sample (50 fragments) from pit **107** (context **106**), were of oak (*Quercus* sp.). None clearly displayed sapwood but one with twisted anatomy suggest it is closer to the bark and was selected on this basis. It should be noted that there could still be *c*.100 years age offset to this piece. All of the 50 fragments identified from pit **116** (context **117**), were also mature oak. One piece was selected for radiocarbon dating at random, it should be borne in mind that this piece could have an age offset of up to 500 years.
- 5.3.3 Generally analysis of wood charcoal can provide information on the species composition and management and exploitation of the local woodland resource on the Site. This would be of limited use while the date of the assemblages are unclear and they cannot be related with certainty to previous charcoal analysis from deposits from the wider site (Pearce *et al.* 2011). In addition, and as noted, it appears that the overwhelming majority of the pieces are of mature oak, and other than highlighting some targeted exploitation of this high calorie wood, little further interpretation of environment or woodland use could be made through analysis of these assemblages. No further work is recommended.

5.4 Sediments

5.4.1 A monolith sample (109) was taken from pit 127 (Appendix 1: Table 2). The lower of its two fills (128) was the paler material, probably reflecting the leaching out of iron-rich clay particles from the naturally permeable sediments. There is no potential for the further analysis of the sediments.

5.5 Radiocarbon dating

5.5.1 Three radiocarbon dates were obtained on samples submitted to the Scottish Universities Environmental Research Centre (SUERC) (**Appendix 1: Table 3**). They



have been calculated using the calibration curve of Reimer *et al.* (2013) and the computer program OxCal (v.4.2.3) (Bronk Ramsey and Lee 2013) and cited in the text at 95% confidence and quoted in the form recommended by Mook (1986), with the end points rounded outwards to 10 years. The ranges in plain type in the radiocarbon table have been calculated according to the maximum intercept method (Stuiver and Reimer 1986). All other ranges are derived from the probability method (Stuiver and Reimer 1993).

- 5.5.2 The aim of the radiocarbon dating programme was to determine the age of the line of pits, and the two pits selected were 25m apart to remove the possibility of the samples deriving from the same parent deposit. Suitable material for radiocarbon dating was limited to short-lived plant material (charred hazelnut shell) and mature oak charcoal (with a potential age offset of <500 years). The assumption was made that if the charred material was derived from hearths associated with the pit line then this would provide a date for its use. It was recognised that any date on mature oak would have an unknown age offset and would provide a *terminus post quem* (*tpq*) for the feature (*i.e.*, a date after which the pits were excavated). In the case of deposit **106** from pit **105** the date on the charred hazelnut shell fragments would be expected to return a younger date than that on the oak if the material derived from the same burning episode.
- 5.5.3 The three radiocarbon results are shown in **Figure 3**. The single date (SUERC-53005) obtained for pit **116** (within the possible arc) returned the earliest result, 3640–3370 cal BC, consistent with an Early Neolithic date. However, the sample was on mature oak that could provide an age offset of up to 500 years. It is possible that this material belongs to the same phase of burning that produced the charred hazelnut shell fragments dated in pit **105**, at some point during 3360–3030 cal BC, in what would equate to the Middle Neolithic period.
- 5.5.4 Material from the same deposit (**106**) in pit **105** produced very different dates (SUERC-53000 and 53001) of 3360–3030 cal BC (Middle Neolithic) and 1880–1680 cal BC (Early Bronze Age), respectively at 95% confidence. The inconsistency between the two results is significant, indicating that the material derives from different burning events some 1500 years apart, and possibly more if an age offset is factored in for the younger of the two dates (SUERC-53001). It was noted during identification that the wood sample had a twisted structure indicating that it was from close to the bark, which could suggest a shorter age offset for this date of *c*. 100 years. This would provide a possible date for the use of the pit at around the end of the Early Bronze Age, with the assumption that the earlier charred hazelnut shell is redeposited. A potentially significant factor, therefore, is the fact the this pit, lying outside the possible arc formed by the other pits, may not be contemporary with the arc.

6 DISCUSSION

6.1.1 The line of pits is of uncertain character, extent, function and date. It is possible that all nine pits form a broadly contemporary but irregular line. If that was the case, it would seem likely, given the line's general uniformity, that it was constructed as a single event rather than over an extended period. It also seems likely, given the regular spacing of the majority of the pits (4.8m average) that there had originally been another pit in the wide (9.6m) gap between pits **110** and **113**. The shallowest pit was only 0.17m deep (compared to the deepest of 0.5m) and it is quite possible that a pit at this location had been completely truncated by ploughing.



- 6.1.2 Alternatively, there are indications that the most southerly pit (**105**) is not associated with the other eight, which lie on an arc of between 62m and 68m in projected diameter, and which could potentially form the western side of a circular post-ring monument. The arc may have continued to the north the next pit at the same spacing would probably have lain outside the excavation area. There was no indication that the pits had held posts, although that possibility cannot be entirely ruled out, or that they had been used for the deposition of cultural material. It appears that they had remained open for long enough for some erosion of the sides, but it is uncertain whether or not they had then been left to fill in through natural processes or had been deliberately backfilled.
- 6.1.3 The results from the dating programme are inconclusive, but indicate that there were at least two clearly distinct burning events represented in the dated material, one possibly in the Middle Neolithic represented by the mature oak in pit **116** (part of the possible arc) and hazelnut shell (possibly redeposited) in the possibly outlying pit **105**, and the other towards the end of the Early Bronze Age (eg, 1600 BC) represented by the mature oak in pit **105**.
- 6.1.4 The pits (at least those on the arc) are almost certainly associated with a line of five comparable pits, running a little south of east–west, excavated on the former Royal Navy Stores Depot (RNSD) site over 40m to the north-east (Pearce *et al.* 2011). These were also regularly spaced at 4.5–5m intervals (average 4.7m), and were 0.7–0.9m in diameter and 0.2–0.5m deep. They had similarly variable profiles, although a larger number of fills (up to eight) were recorded in them. No finds were recovered, but nearly all contained varying amounts of charcoal in their basal fills; the upper fills were indicative of natural silting. There were no indications that this pit line continued east of its easternmost pit, but one further pit lay 16m west of the line, and could be associated with it. Potentially, this western pit could also be associated with the pit arc on the present site if the arc on which eight of the pits may have been positioned had a projected diameter of approximately 62m.
- 6.1.5 A date in the Early Neolithic had already been obtained from the RNSD site, from a substantial quantity of charcoal (not identified) in one of the pits' lower fills (3710–3630 cal BC, SUERC-13960, 4865±35 BP). If, as in pit **116**, this charcoal was from mature wood (potentially up to a number of centuries old) this date is conceivably also consistent with a burning event in the Middle Neolithic.
- 6.1.6 Even so, the relationship between the two lines, one curving, the other straight, is unclear. The area between the two sites has been subject to evaluation (John Moore Heritage Services 2007) and while a number of pits of comparable size were recorded in the trenches, they were too widely dispersed to reveal any meaningful pattern, and cannot be confidently associated with either line. It is possible, however, that the two lines form part of a single construction, which might have had a monumental function, although of unclear overall form.
- 6.1.7 However, an Early or Middle Neolithic date for the pit lines would be unusual as pit and/or post alignments and circles are not generally known until the Late Neolithic. There is a close association between timber circles and Grooved Ware pottery, in comparison to other ceramic traditions (Gibson 1999), and even though relatively few such features are known in Devon, a Late Neolithic date for this complex feature would be consistent with monuments elsewhere.



- 6.1.8 There was evidence for Late Neolithic activity on the RNSD site, with Grooved Ware pottery recovered from a tree-throw hole just 5m west of the pit line (Pearce et al. 2011); samples of charcoal from this feature provided radiocarbon dates of 2880–2800 cal BC (Wk-27023, 4129±30 BP) and 2850–2480 cal BC (Wk-270243, 4064±30 BP). Grooved Ware was also recovered from the recut of an adjacent oval pit which, at 1.1m by 1.5m wide and 0.6m deep, was larger than any of the pits in either of the pit lines.
- 6.1.9 It is possible that the Early Bronze Age date on mature oak in pit **105** could relate to activity in the Middle Bronze Age, as represented on the RNSD site by an extensive field system.
- 6.1.10 Alternatively, it is possible that all these dates are from residual material and the postlines are components of the later prehistoric organisation of the landscape; and it is notable that the line of pits on the RNSD site lies exactly perpendicular to one of the major field boundary ditches.

6.2 Publication proposal

- 6.2.1 It is proposed that the results of the fieldwork should be published as a short note, with supporting illustrations, summarising the results presented in this assessment report, and be submitted for publication in a suitable journal (The Proceedings of the Devon Archaeological Society) and made available online (OASIS).
- 6.2.2 The report will comprise a brief introduction detailing the circumstances of the project and its aims and objectives, a description of the archaeological remains recorded, summaries of the environmental data and the results of radiocarbon dating as detailed in this report, and a discussion of the results, placing the Site within its wider regional context.
- 6.2.3 A copy of this assessment report will be deposited with the NMR at Swindon and the Devon County Council Historic Environment Record (DCCHER) maintained by Devon County Council Archaeology Service and will also be submitted to the ECC Planning Services where it can be freely copied without reference to Wessex Archaeology for the purposes of archaeological research or Development Control within the planning process.
- 6.2.4 In addition, an Online Access to Index of Archaeological Investigations (OASIS) online record http://ads.ahds.ac.uk/projects/oasis/ has been initiated. All appropriate parts of the OASIS online form have been completed for submission to the Wiltshire SMR. Once approved, this will include an uploaded .pdf version of the entire report (a paper copy will also be included with the archive).

7 STORAGE AND CURATION

7.1 Museum

7.1.1 It is recommended that the project archive resulting from the fieldwork be deposited with the Royal Albert Memorial Museum (RAMM), Exeter, under the accession code 85731, within three months of their reopening for archive deposition.



7.2 Archive

- 7.2.1 The complete site archive, which will include paper records, photographic records, graphics, artefacts and ecofacts will be prepared following the standard conditions for the acceptance of excavated archaeological material by RAMM, and in general following nationally recommended guidelines (Walker 1990; SMA 1995; Richards and Robinson 2000; Brown 2011).
- 7.2.2 All archive elements are marked with the Site code (**85731**). A fully cross-referenced index of the archive will be prepared on completion of the project.

7.3 OASIS

7.3.1 An OASIS online record http://ads.ahds.ac.uk/projects/oasis/ will be initiated and key fields completed on Details, Location and Creators Forms. All appropriate parts of the OASIS online form will be completed for submission to the DHER. This will include an uploaded .pdf version of the entire report (a paper copy will also be included with the archive).

7.4 Discard policy

7.4.1 Wessex Archaeology follows the guidelines set out in *Selection, Retention and Dispersal* (SMA 1993), which allows for the discard of selected artefact and ecofact categories which are not considered to warrant any future analysis. Any discard of artefacts will be fully documented in the project archive.

7.5 Copyright

- 7.5.1 The full copyright of the written/illustrative archive relating to the Site will be retained by Wessex Archaeology Ltd under the *Copyright, Designs and Patents Act* 1988 with all rights reserved. The recipient museum, however, will be granted an exclusive licence for the use of the archive for educational purposes, including academic research, providing that such use shall be non-profitmaking, and conforms with the *Copyright and Related Rights regulations* 2003.
- 7.5.2 This report may contain material that is non-Wessex Archaeology copyright (e.g. Ordnance Survey, British Geological Survey, Crown Copyright), or the intellectual property of third parties, which we are able to provide for limited reproduction under the terms of our own copyright licences, but for which copyright itself is non-transferrable by Wessex Archaeology. You are reminded that you remain bound by the conditions of the Copyright, Designs and Patents Act 1988 with regard to multiple copying and electronic dissemination of the report.

7.6 Security copy

7.6.1 In line with current best practice, on completion of the project a security copy of the paper records will be prepared, in the form of a pdf/a file, which will form part of the project archive.



BIBLIOGRAPHY

- Bronk Ramsey, C. and Lee, S., 2013, Recent and phased development of the Program OxCal, *Radiocarbon* 55(2-3), 720–30
- Brown, D.H., 2011. *Archaeological Archives; a guide to best practice in creation, compilation, transfer and curation*, Archaeological Archives Forum (revised edition)
- Gibson, A., 1999. Grooved ware and timber circles, in R. Cleal and A. MacSween (eds) 1999, *Grooved Ware in Britain and Ireland*, 78–82. Oxford, Oxbow/Neolithic Studies Group Seminar Papers 3
- Institute for Archaeologists, 2008, Standard and Guidance for excavation
- Institute for Archaeologists, 2009, Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives, Institute for Archaeologists
- John Moore Heritage Services 2006, An Archaeological Desk-based Assessment of the Newcourt Area –Lower RNSD site and Land alongside Old Rydon Lane and the A379, Topsham. Unpubl. client report
- John Moore Heritage Services, 2007, Land North and South of Old Rydon Lane, Topsham, Exeter. Unpubl. client report HTORL07
- Moffett, L., Robinson, M.A. and Straker, S., 1989, Cereals, fruit and nuts: charred plant remains from Neolithic sites in England and Wales and the Neolithic economy, in A. Milles, D. Williams and N. Gardner (eds), *The Beginnings of Agriculture*, 243–61. Oxford, BAR Int. Ser. 496
- Mook, W.G., 1986, Business Meeting: recommendations/resolutions adopted by the twelfth international radiocarbon conference, *Radiocarbon* 28, 799
- Pearce, P., Steinmetzer, M. and Quinnell, H., 2011, An Early Neolithic pit alignment, Grooved Ware and bronze Age field boundaries at the former Royal Navy stores depot, Old Rydon Lane, Exeter, *Proc. Devon Archaeol. Soc.* 69, 23–51
- Reimer, P.J., Bard, E., Bayliss, A., Beck, J.W., Blackwell, P.G., Bronk Ramsey, C., Grootes, P.M., Guilderson, T.P., Heaton, T.J., Hoffmann, D.L., Hogg, A.G., Hughes, K.A., Kaiser, K.F., Kromer, B., Manning, S.W., Nui, M., Reimer, R.W., Scott, E.M., Southon, J.R., Staff, R.A., Turney, C.S.M., and van der Plicht, J., 2013, IntCal13 and Marine 13 Calibration Curve, 0–50,000 Years BP, *Radiocarbon* 55(4)
- Robinson, M.A., 2000, Further considerations of Neolithic charred cereals, fruits, and nuts, in A.S. Fairbairn (ed.), *Plants in Neolithic Britain and Beyond* (Neolithic Studies Seminar Paper 5), 85-90. Oxford, Oxbow Books
- SMA, 1993, Selection, Retention and Dispersal of Archaeological Collections, Society of Museum Archaeologists
- SMA, 1995, Towards an Accessible Archaeological Archive, Society of Museum Archaeologists



- Stace, C., 1997, New Flora of the British Isles (2nd edition). Cambridge, Cambridge University Press
- Steinmetzer, M.F.R., 2007, *Archaeological Evaluation of the Upper Site, Former Royal Naval Supply Depot, Old Rydon Lane, Exeter.* Exeter Archaeology Report No. 07.27 (rev. 2). Unpubl. client report
- Stevens, C.J., 2007, Reconsidering the evidence: towards an understanding of the social contexts of subsistence production in Neolithic Britain, in S. Colledge and J. Conolly (eds), *The Origin and Spread of Domestic Plants in Southwest Asia and Europe*. Walnut Creek (Ca), Left Coast Press
- Stratascan, 2006, Royal Naval Stores Depot, Topsham, Devon: geophysical survey report. Unpubl. client report
- Stuiver, M., and Reimer, P.J., 1986, A computer program for radiocarbon age calculation, *Radiocarbon* 28, 1022–30
- Stuiver, M., and Reimer, P.J., 1993, Extended ¹⁴C data base and revised CALIB 3.0 ¹⁴C age calibration program, *Radiocarbon* 35, 215–30
- Walker, K., 1990, *Guidelines for the Preparation of Excavation Archives for Long-Term Storage*, UKIC Archaeology Section
- Wessex Archaeology 2012, Land off Old Rydon Lane, Exeter, Devon: detailed gradiometer Survey Report Unpublished client report, June 2012
- Wessex Archaeology, 2013a, Land off Old Rydon Lane, Exeter, Devon: Written Scheme of Investigation for archaeological mitigation. Unpubl. client report
- Wessex Archaeology, 2013b, Land between Old Rydon Lane and Newcourt House, and to the west of Newcourt Drive, Exeter: archaeological evaluation report. Unpubl. client report



APPENDIX 1 ENVIRONMENTAL TABLES

Table 1 Assessment of the charred plant remains and charcoal

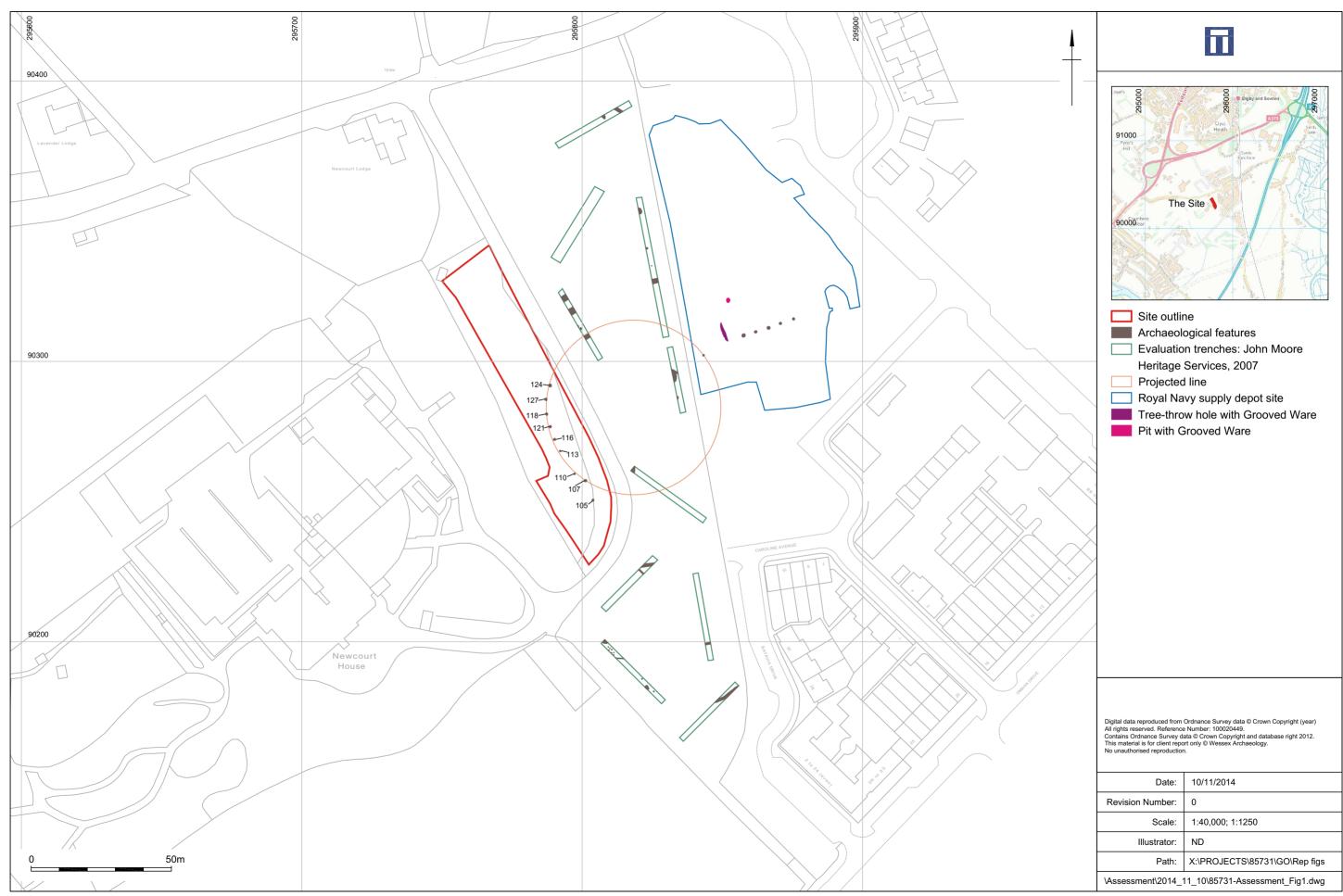
Pit	Fill	Samp.	Vol. (l)	Flot size (ml)	Roots %	Charred other	Notes	Charcoal > 4/2 mm
105	106	100	11	200	30	<5	Corylus avellana shell frag, Galium	35/30 ml
107	109	101	20	500	10	-	-	150/100 ml
110	112	103	10	175	20	<5	Vicia/Lathyrus	40/35 ml
113	115	102	10	60	25	-	-	10/10 ml
116	117	104	12	425	20	-	-	100/125 ml
118	120	106	20	200	30	-	-	40/25 ml
121	123	105	20	375	35	-	-	60/75 ml
127	129	107	20	140	60	-	-	10/10 ml

Table 2 Sediment description of monolith 109, pit 127

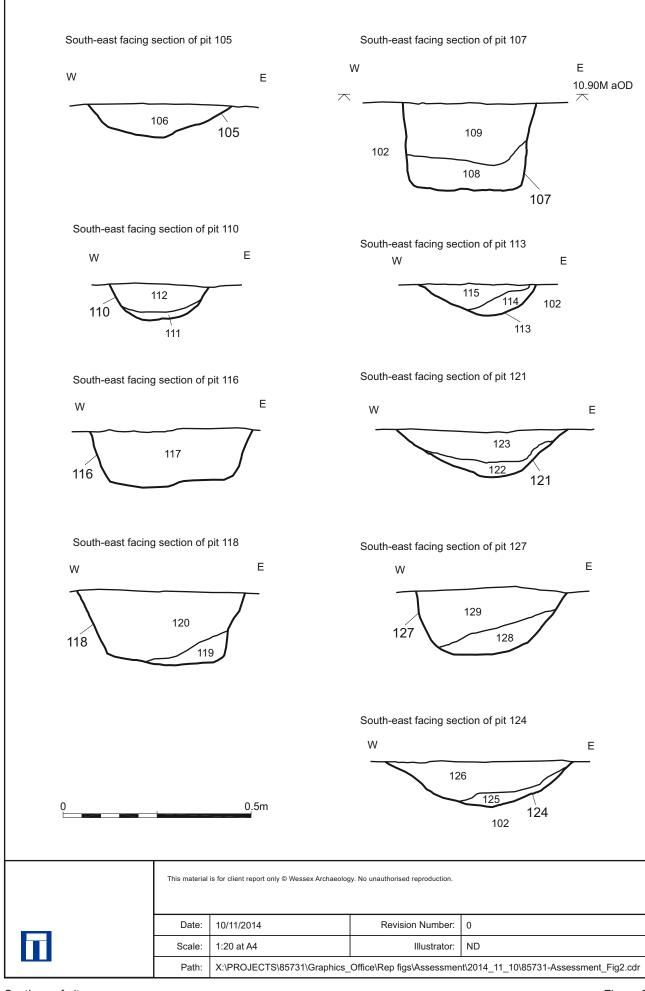
Depth (m)	Context	Sediment description	Interpretation
0-0.22	129	, , , ,	Fill of pit
		pores. Moderate fine fleshy rootlets throughout, rare charcoal	
		flecks. Stone free. Clear diagonal boundary.	
0.22-0.31	128	10YR 5/6 yellowish brown loamy sand, slightly less clay	Fill of pit with finer
		content than above making it feel coarser. 5% fine pores,	Fe-rich particles
		moderate fine fleshy rootlets, rare charcoal flecks. Piece of	leached out.
		gravel <5 cm at the boundary. Abrupt boundary.	

Table 3 Radiocarbon measurements on samples from pits 105 and 116 (*= likely age offset of up to 500 years)

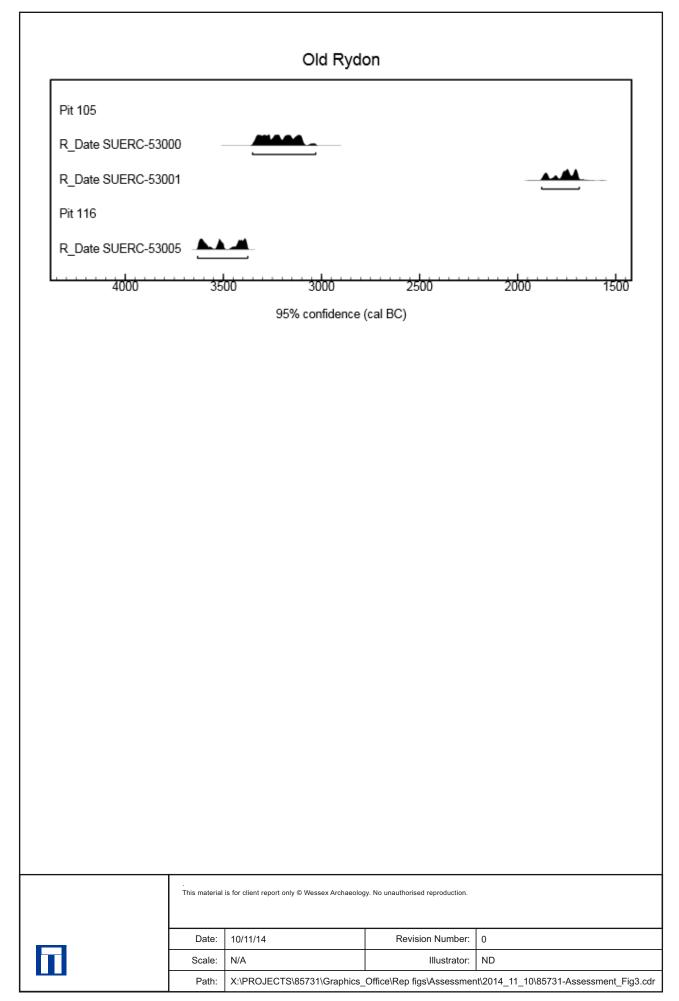
Laboratory code	Context and sample	Radiocarbon age BP	δ ¹³ C ‰	Calibrated date range (95% confidence)
SUERC-53000	Charred plant remains, Corylus avellana shell fragments from pit 105, deposit 106, sample 100 H	4493±30	-26.3	3360-3030 cal BC
SUERC-53001	Charcoal, <i>Quercus</i> sp mature wood from pit 105, deposit 106, sample 100 C	3447±27	-26.7	1880-1680 cal BC*
SUERC-53002	Charcoal, <i>Quercus</i> sp mature wood from pit 116, deposit 117, sample 104	4719±27	-24.9	3640-3370 cal BC*



Site location, with plan of archaeological features, and selected features on adjacent sites



Sections of pits Figure 2



Radiocarbon results Figure 3



Plate 1: South-east facing section of pit 105



Plate 2: South-east facing section of pit 107

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Plate 3: South-east facing section of pit 110



Plate 4: South-east facing section of pit 121

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Plate 5: South-east facing section of pit 118



Plate 6: South-east facing section of pit 127

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Plate 7: South-east facing section of pit 124

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