
Woodbridge (Cheviot) Quarry excavation: WOOD05

Evaluation of environmental samples from a Neolithic site in the Milfield Basin, Northumberland

J.P. Huntley

Excavations were undertaken by staff of Archaeological Research Services at Woodbridge Quarry (NT 9520 3269) in the Milfield Basin, Northumberland in advance of gravel extraction by Tarmac. Tarmac Northern funded the excavation and recording of this multi-phase Neolithic site that includes at least three, possibly up to seven, rectangular buildings and numerous pits and hearths, most of which have produced pottery, lithics and/or charred plant remains. As such it is the most extensive site of the period in northern England and further emphasises the importance of the Milfield Basin in early prehistoric times, not only as a ritual centre with 9 or more henges, but also as one for agricultural production. Further funding has been sought and obtained from English Heritage, via the Aggregates Sustainability Levy, for full recording of the remaining area prior to gravel extraction and subsequent post-excavation assessment, analysis and publication of the results.

This report evaluates the potential for analysis of the bulk environmental samples collected from the WOOD05 excavations. Charcoal samples had also been taken from a number of contexts primarily with the aim of providing material for radiocarbon dating. The reports from this dating material are presented in Appendix 1. Numerous bags of charcoal remain but they are all very small (<5ml) and thus are considered to have minimal potential to address questions other than related to dating of specific contexts.

Methodology

The bulk samples, of varying volume, had been processed on-site by the excavator and the flots sent to the laboratory for evaluation. Each sample had been sieved to 4 or 5 fractions (5mm, variously 1 and 2mm or 3mm, 500 microns and 300 microns). Each fraction had been bagged separately and given a unique sample number. In some cases any one fraction might be in 3 or 4 or more bags. Fortunately, all material from one environmental sample was kept in one large bag. An updated sample register and context information files accompanied the samples.

For the evaluation, initially the samples were separated into two groups – those of less than 5ml total estimated volume and the larger ones. The small-volume group was noted as such and put on one side. For the larger volume samples the approximate total volume was noted and whether there was a clear separation into size, i.e. whether most of the material was large, small or reasonably separated between the fractions since the fractions had been kept separate. Approximately 10-20ml of each of the 1mm and 2mm or 3mm fractions and 5ml of the 500 μ fraction were scanned, where possible, using a Wild M5 stereomicroscope at magnifications of up to x50. In many instances any one of these fractions was less than the 10-20ml in which case all was scanned. The presence of charred cereal grains, chaff and weed seeds was noted and approximate amounts of each scored – 1 = 1 or 2 items, 2 up to about 10 and 3 many more; taxa present were recorded if they could be identified quickly. Any one context was then classified as: a) no further action, nfa, if no charred plant remains of any sort were seen, b) second priority, do2, if a few were present or c) high priority, DO, when some 10s of plant remains were present in the volumes assessed. These data were entered into an Access database table. The excavator provided various documents containing archaeological and provisional dating information. Of these, the context register (as of 25th November 2005) was imported to another table and the two related using context number as the linked field.

Results

Given the nature of the contexts and sediments any non-charred material was considered to be intrusive and only charred material contemporary with occupation.

125 samples were evaluated from 114 contexts, therefore 11 contexts had two sets of samples taken. Eleven of the contexts had missing archaeological information or, apparently, did not themselves exist. It is not clear whether there has been a transcription of numbers by the author or archaeologist or whether some of the contexts were in the sequence that was re-numbered. Only in two cases is it important to clarify this as they are samples that have some potential for full analysis. Table 1 presents the information about the 25 contexts that warrant further work.

The matrix of most of the contexts was more or less entirely charcoal although a few also produced a little white vitreous spatter. None produced calcined or burnt bone and no other bone survived although this is not unexpected due to the acidic nature of the underlying gravels. A few contexts contained large amounts of modern roots indicating probably that they were close to the surface. Much of the charcoal was reasonably well preserved with few fresh breaks. Some contexts produced highly abraded charcoal suggesting that it had been moved around to moderate degrees prior to final burial. This makes these contexts less useful from a taphonomic point of view.

The charcoal was variously a mixture of taxa or dominantly oak. The oak was mostly small and, typical of the species, very flaky pieces. The mixed taxa were quite often in the form of sections of relatively small roundwood although chunks of heartwood were common; twigs were present but rare. No obvious heather was noted. Even the small contexts seemed to have a mixture of taxa suggesting that the material does not represent only, if at all, the post in a post hole.

Cereal grains were the most common and abundant remain found, with most being noted as *Hordeum*, barley. Well developed, hulled barley grains were frequent as were rather smaller and flatter grains although still with a somewhat angular section. Nothing clearly from the naked variety was noted. Emmer-type wheat grains, *Triticum dicoccon*, were present as was its chaff as both glume bases and spikelet forks. One grain of possible rye, *Secale cereale*, was noted – it had the high, narrow dorsal ridge and pointed embryo of rye although was not as “shiny” as typical and more recent grains. Barley chaff was occasionally present. Weeds seeds were rare throughout with a few each of sedges, Polygonaceae and Chenopodiaceae only. Legumes were recorded in two contexts, and, from their somewhat flattened shape, they may well have been from *Ulex*, gorse or similar, they were not typical *Vicia/Lathyrus* types. In general, the cereals are well preserved with diagnostic features well defined and relatively few should remain in the *Cerealia undiff.* category. The emmer glume bases noted in this evaluation are of such quality as to be measurable with very few being longitudinally fragmented as often occurs. The flots are generally clean as well with little adherence of fine silts, thus small weed seeds should be obvious.

Table 1: details of samples containing charred plant remains

context	cereal grain score	chaff score	weed score	action	taxa and notes	description	date
131	1	0	0	do2	several grains barley	Analysis depends on archaeology	
262	0	0	0	?do charcoal	damp mixed charcoal, 80%>2mm	Fill of an irregular pit or depression	Neolithic
262	0	0	0	?do charcoal	clean mixed charcoal	Fill of an irregular pit or depression	Neolithic
292	0	0	0	??do charcoal	wet charcoal lots of it mixed types/spp	Analysis depends on archaeology	
305	0	0	0	do2	strange bubbly charcoal ?food	Pit containing posthole in Building 5	Neolithic
312	1	0	1	do2	silty charc occ barley	Fill of deep	Neolithic

context	cereal grain score	chaff score	weed score	action	taxa and notes	description	date
					and weed	posthole in Building 5	
314	2	0	0	do2	charcoal and barley	Fill of Burning pit	Neolithic
338	1	0	0	do2	damp charcoal, occ barley, dating sample	Fill of a double posthole in Building 4	Neolithic
340	1	0	0	DO	grain, dating sample	Fill of pit within Building 4	Neolithic
340	3	2	0	DO	stuffed. Mostly hulled barley, some emmer ?rye?,	Fill of pit within Building 4	Neolithic
341	0	1	0	do2	Dating sample, emmer spikelet	Cut of feature (340)	Neolithic
342	2	0	0	DO and ?charcoal	damp charcoal, some ?barley	Fill of burning pit in Building 4	Neolithic
344	1	0	0	do2	clean charcoal, occ barley	Fill of posthole in Building 4	Neolithic
346	1	0	0	DO	grain, dating sample	Fill of posthole in Building 4	Neolithic
352	1	0	0	do2	clean charcoal, occ barley	Fill of pit in Building 4	Neolithic
355	1	1	0	do2	silty charcoal, grain and emmer chaff	Fill of posthole in Building 4	Neolithic
359	2	0	0	do2	moderate barley and emmer	Fill of posthole in Building 4	Neolithic
363	2	0	0	DO	grain barley; dating	Fill of posthole in Building 4	Neolithic
365	1	0	0	do2	clean charcoal, occ barley	Fill of double posthole in Building 4	Neolithic
367	1	0	0	do2	clean charcoal, occ barley	Fill of posthole in Building 4	Neolithic
373	1	1	1	do2	silty crazed charcoal. Barley and emmer, sedge	Fill of posthole in Building 4	Neolithic
477	3	0	0	DO	stuffed full of grain mostly barley, some emmer	Burnt material in base of 340	Neolithic
488	0	0	0	?charcoal	mostly >2mm, small roundwood, could do charcoal	Burnt layer under 486	Neolithic
489	1	0	0	do2	damp charcoal - needs drying occ grain. Dating sample	Fill of posthole	Neolithic
491	0	1	0	do2	charcoal, lots modern roots, emmer spikelet	Fill of pit	Neolithic
2005	0	0	1	do2, ?charcoal	charcoal but damp and needs rinsing/drying. Legume	Fill of hearth pit	Neolithic

Discussion

Twenty five contexts have sufficient charred plant remains or charcoal to warrant full analysis and, even without taking account of any archaeology, they would produce a statistically valid dataset in respect of agricultural production for the Neolithic period in northern England. As such it would be comparable with material from Marton-le-Moor in North Yorkshire (Huntley, 1994) although there fragments of *Malus/Pyrus*, apple/pear, and other native fruits were as abundant as cereals. That site, however, consisted of pits possibly associated with a ritual setting rather than settlement. The only other comparable site in the north is at Balbridie where a rectangular building produced evidence for bread wheat, *Triticum aestivum*, as well as other cereals (Fairweather & Ralston, 1993).

Hazelnut shells are, apparently, remarkably rare in these contexts which compares with samples taken from earlier excavations immediately to the west of this site where they were abundant in some contexts, especially those associated with Building 1 (Cotton, 2005). These differences need investigation.

The pottery and lithics of Cheviot Quarry suggest that there is earlier and later Neolithic occupation and some possibly into the early Bronze Age. Once dating has been finalised there may be the opportunity to investigate any changes in plant remains across time although, from the evaluation, there seems to be little difference between contexts. This is, of itself, of interest if there is no difference in cereal production over what might be a thousand years or so. However, there are clear differences between the WOOD05 and Cotton's (op cit.) assemblages and this might well be temporal. The two excavations are really two halves of the same site and abut each other.

From this evaluation, the final number of weeds seeds is likely to be extremely low and therefore will offer little in the way of interpretation. It seems most likely that this is a genuine absence rather than one due to preservation, given good survival of chaff, and perhaps reflects cultivation of virgin ground where annual species had not had previous opportunities to invade.

The pottery and lithics also indicate *only* early prehistoric activity even though Anglo-Saxon occupation also survives in the locale with the nearby Maelmin site being a high status stronghold of that period. Thus the likelihood of contamination from later material is slight. Their evidence is also of such quality to suggest that the structures excavated to the north of Cheviot Quarry and initially considered as Anglo-Saxon from lack of ceramic evidence might also be Neolithic and funding to date hazelnut shells from those excavations is now being sought.

Although there were at least three and possibly up to seven buildings or post-hole structures on the site, the WOOD05 contexts with charred plant

remains are only from two of these – building 4 predominantly and, to a much lesser extent, building 5. As yet it is unclear as to how the other pits and shallow features etc relate to either of these buildings or whether they are closer, time or space, to other structures. There is therefore good potential to look at activities associated with two, and possibly more, structures. Spatial analyses across the whole area are unlikely to be that favoured although building 1 clearly had some surviving material (Cotton, *op cit.*).

The samples taken represented 100% of the context and they were quite small volumes in many cases. In some instances the volumes processed were recorded on the bags and suggests 1-3 litres. This is likely to have been the total volume of post holes etc.

No further material is available for processing. As a result, concentrations of seeds are likely to be quite low overall. Given the minute flots initially put on one side it is not considered worth looking at these – at most they might contain one or two fragments and such small amounts of material are not going to add to the interpretation of the site where some rich contexts do, after all, exist, unless they represent a different period of time and can clearly be demonstrated as not contaminated.

Abundant charcoal survives in several contexts determined as hearths, presumably therefore primary contexts. Analysis of this material has high potential to investigate the species and nature of wood being used at least for the latest firings of these features. It would also provide material for methodological investigations for charcoal analysis.

Recommendations

1. The damp flots need to be dried as a matter of urgency.
2. Archaeological information needs to be sorted for the two rogue contexts 131 and 292.
3. All 25 contexts in table 1, assuming point 1 is satisfied, should be fully analysed for their charred cereal and weed remains. This will produce only a second large dataset in respect of agricultural production for the Neolithic period in northern England.
4. The data from these contexts have good potential to discuss cereal-related activities in at least two buildings.
5. The data from Jacqui Cotton's work should be incorporated with those from the current samples and an integrated report produced with appropriate collaboration.
6. The two datasets together have high potential to address possible temporal patterns across the site given their already obvious differences, dominant nuts versus cereals, and this has to be tied into a suitable dating programme.

7. Hearth contexts are available from Jacqui Cotton's sample too. Analysis of charcoal from those and the hearths in the present dataset would enable investigation of woodlands used by people and may have a temporal element too.
8. Charcoal analysis in Britain remains non-standardised and under debate. Sufficient material is present at Cheviot Quarry to undertake some fundamental methodological experiments which would have wider applications in archaeobotany. A project design for this should be prepared and, subject to approval from her Management Committee, the author would like to undertake this work following the completion of her Regional Review of Wood and Charcoal.
9. The material is of sufficient quality that photographs of it would be suitable to use in training and publicity literature both for specialists and the interested public to raise the profile of this type of work.
10. In view of the relatively small assemblage in terms of numbers of contexts and taxa, and the well preserved nature of the plant remains this site has high potential for training someone in basic archaeobotany. This would have the added advantage of a further specialist developing regional expertise in a region with very few active archaeobotanists. Subject to approval from her Management Committee, the author would be willing to act as supervisor for this and to provide the necessary training and support plus reference material.

Jacqui Huntley,
EH Regional Science Advisor
26th January 2006

Appendix 1: Charcoal samples for dating

Milfield, Cheviot Quarry: WOOD 05 Charcoal samples for radiocarbon dating – round 1

Charcoal samples from the Neolithic settlement site at Cheviot Quarry, Milfield, Northumberland were identified prior to being sent for radiocarbon dating.

The aim of the first round was to provide material to date 7 ‘buildings’. Two single entity samples had been requested, by the EH dating staff, from each of 4 post-holes for each of the buildings. Ideally the pieces were to be chosen from different species to avoid the possibility of dating, in essence, the same tree/shrub.

Bags of hand-picked charcoal as well as flots from bulk samples were delivered to the laboratory. Initially the hand-picked charcoal was examined as the pieces were likely to be larger. In some instances the flots from environmental samples (two bin liners full) were also examined through lack of hand-recovered charcoal. This was considerably more time consuming than expected given that each flot had been separated into 5 size fractions, each of which was in its own bag and with a unique sample number. In addition, it rapidly became obvious that the flots from bulk samples had a higher potential as a) they were clean, b) they contained discrete pieces of charcoal as opposed to black soil or smears of charcoal and c) they were dry thus fractioning was less destructive.

Individual fragments were fractured along the transverse and the longitudinal radial and tangential planes as necessary for identification. These were examined initially under a Wild M3 stereomicroscope at magnifications of up to x50 and subsequently under a Leitz DM/LM epifluorescent microscope at magnifications of up to x200 in order to see details at the cellular level. Identification was by comparison with modern artificially charred wood of known identification held by the author.

Charcoal from small roundwood and/or short-lived species was preferred; *Quercus* (oak) was not considered unless sapwood/bark clearly present. Most of the oak was simply oak and, although a few pieces contained the tyloses characteristic of heartwood, most did not so might or might not have been suitable. In some instances *Fraxinus* (ash) was chosen; although the tree can live to 2-300 years most tend to be rather less and such a date “error” might be acceptable. If *Corylus* (hazel) nutshell or cereal grains were present in the flots these were chosen although the argument that a nut might have come from the same tree as the charcoal fragment could equally be applied. Once identified, all fragments from the single piece were placed together in a small bag, if they were suitable for dating.

The table below presents the identifications to-date. Context numbers are in circles and sample numbers in lozenges on the bags.

Context	Sample	Archaeology	Charcoal
Building 1			
2019	<340> flot	Building 1 post hole	1 fragment <i>Corylus</i> charcoal and 1 hulled <i>Hordeum</i> (barley) grain selected.
2023	2048	Building 1 post hole	1 fragment probable <i>Alnus</i> (alder) selected. Nothing else present.
2027	2047	Building 1 post hole	1 fragment indet. twig – too fragile to confirm whether <i>Calluna</i> (heather) or not but doesn't look like it.
2047	<322> 2mm	Building 1 post hole now building 2	1 <i>Salix/Populus</i> and 1 <i>Corylus</i> selected
2051	2002	Building 1 post hole now building 2	Single fragment <i>Corylus</i> – selected.
2053	<274> 3mm	Building 1 post hole now building 2	1 hulled <i>Hordeum</i> , 1 <i>Hordeum</i> undiff. and 1 <i>Corylus</i> selected
2057	<400> 2mm	Building 1 post hole now building 2	1 hulled <i>Hordeum</i> , 1 fragment <i>Betula</i> selected
Building 2			
2089	2003	Building 2 post hole	Single piece of ? <i>Quercus</i> , very tarry. Not suitable
2089	2000	Building 2 post hole	Single ? <i>Quercus</i> again. Not suitable
2091	<370> 2mm	Building 2 post hole	1 fragment <i>Crataegus</i> -type and 1 fragment <i>Betula</i> sorted
2093	<387> 5mm	Building 2 post hole	1 <i>Quercus</i> only
2093	<388> 2mm	Building 2 post hole	2 fragments <i>Quercus</i> otherwise minute fragments that should have gone through mesh!
2099	2001	Building 2 post hole	Single ? <i>Quercus</i> again. Not suitable
2107	<376> 2mm and 5mm	Building 2 post hole	5mm = 1 piece burnt soil; 2mm 1 small indet piece of roundwood with only 1 vessel visible amongst parenchyma, 1 <i>Salix/Populus</i> and a few tiny scraps of charcoal.
Building 3			
2117	18 flot	Building 3 post hole	1 fragment <i>Fraxinus</i> (ash) selected from 5mm and 1 fragment <i>Betula</i> (birch) from 2mm fraction.

2125	<600> 2mm	Building 3 post hole	1 <i>Corylus</i> otherwise 4 fragments <i>Quercus</i> and nothing else
2127	No number flot	Building 3 post hole	1 nice fragment <i>Corylus</i> charcoal in 5mm flot; nothing suitable in any of the rest of the flot bags.
2129	<11> 2mm	Building 3 post hole	1 <i>Calluna</i> otherwise tiny scraps only
2131	<10> 2mm	Building 3 post hole	1 <i>Corylus</i> and 1 <i>Betula</i> but doubtful anything else suitable
2137	<500> 2mm	Building 3 post hole	1 <i>Corylus</i> and 1 <i>Fraxinus</i> sorted, more <i>Fraxinus</i> but otherwise lots of <i>Quercus</i>
2141	4 flot fractions	Building 3 post hole	Nothing at all
2145	4 flot fractions	Building 3 post hole	Nothing at all
2147	<605> 2mm	Building 3 post hole	Half a <i>Hordeum</i> , 1 fragment <i>Corylus</i> and nothing else
2153	2044	Building 3 post hole	1 flake of what might be <i>Quercus</i> . Not suitable. Dream on.
2153	2045	Building 3 post hole	1 fragment <i>Quercus</i> heartwood. Not suitable. Nothing more.
2175	4 flot fractions	Building 3 post hole	1 <i>Quercus</i> and 1 something with no vessels.
Building 4			
338	93 5mm flot	Building 4 post hole	<i>Corylus</i> roundwood ca 4 years old – chosen
338	94 2mm flot	Building 4 post hole	1 fragment <i>Fraxinus</i> charcoal and 1 hulled <i>Hordeum</i> – both selected
363	96	Building 4 post hole	2 years old <i>Corylus</i> twig and 1 <i>Corylus</i> charcoal selected – some modern root penetration noted.
363	101	Building 4 post hole	All <i>Quercus</i> – very soft, silty and many modern roots, completed
365	<99> 5mm	Building 4 post hole	Building 4 post hole
369	89	Building 4 post hole	<i>Quercus</i> twig (<2mm d) and 1 tarry fragment of <i>Betula/Corylus/Alnus</i> selected. Otherwise massive heartwood <i>Quercus</i> , not counted. Completed

489	162 2mm flot	Building 4 post hole	1 hulled <i>Hordeum</i> grain, at least 2 other grain so flot needs analysing.
489	161 5mm flot	Building 4 post hole	1 <i>Corylus</i> half roundwood ca 3 years old – selected. Lots more <i>Corylus</i> roundwood fragments, occasional oak and hazelnut shell.
Building 5			
306	137	Building 5 hearth	1 <i>Corylus</i> and 1 <i>Betula</i> selected for dating – some fine modern roots on <i>Betula</i> .
308	127	Building 5 post-hole	<i>Corylus</i> roundwood 7 years old and <i>Corylus</i> roundwood 3 years old different ring patterns – selected for dating. 2 <i>Quercus</i> . Completed
308	130	Building 5 post-hole	3 <i>Quercus</i> – no use for dating. Completed
308	151	Building 5 post-hole	7 <i>Quercus</i> – no use for dating. Completed
312	156	Building 5 post-hole	1 <i>Salix/Populus</i> and 1 <i>Corylus</i> half round section, 5 years old selected for dating. 5 <i>Quercus</i> . Completed
316	128	Building 5 post-hole	1 <i>Corylus</i> 6 years old roundwood – selected. Otherwise 6 <i>Quercus</i> – not suitable. Completed
316	150	Building 5 post-hole	1 <i>Corylus</i> part roundwood section selected for dating, otherwise 6 <i>Quercus</i> . Completed
320	141	Building 5 post-hole	2 <i>Corylus</i> for dating; otherwise 2 <i>Quercus</i> and 3 more <i>Corylus</i> . Completed
320	149	Building 5 post-hole	1 <i>Corylus</i> roundwood for dating plus 3 other <i>Corylus</i> . Completed
Building 6			
427	71	Building 6 post hole	2 pieces <i>Fraxinus</i> , 1 chosen for dating
419	97	Building 6 post hole	1 piece <i>Fraxinus</i> and nothing else – chosen for dating
Building 7			
324	140	Building 7 post hole	2 <i>Quercus</i> only, not suitable. Completed
328	<225>	Building 7 post hole	1 <i>Corylus</i> roundwood and 1

	2mm		<i>Corylus</i>
328	<226> 1mm	Building 7 post hole	1 grass stem
334	142	Building 7 post hole	Only 1 <i>Quercus</i> – not suitable
334	196 2mm flot	Building 7 post hole	No 5mm fraction. 1 <i>Corylus</i> charcoal scrap and 1 <i>Betula</i> scrap. Nothing else so both chosen
341	575 2mm flot	Building 7 post hole	5mm fraction all oak. <i>Corylus</i> charcoal – 1 selected, some oak too
341	576 1mm flot	Building 7 post hole	1 emmer wheat spikelet fork – selected.
395	199 1mm flot	Building 7 post hole	1 <i>Calluna</i> twig – selected given the presumed age of deposits therefore less likely to be old heather from peat burning. 5mm fraction only oak.
453	153	Building 7 post hole	>8 <i>Quercus</i> – very thin radial flakes, no sapwood seen. Not suitable. Completed.
453	124	Building 7 post hole	7 <i>Quercus</i> flakes. Not suitable. Completed.
457	<564> 5mm	Building 7 post hole	<i>Corylus</i> – the single fragment present.
457	<565> 2mm	Building 7 post hole	1 <i>Corylus</i> roundwood selected and another 3-4 pieces <i>Corylus</i> present.
No arch info as yet			
314	132		All <i>Quercus</i> , not counted. Completed
314	148		1 <i>Betula</i> , 1 probable <i>Corylus</i> selected for dating. Silty and some modern roots on both
340	119	Pit fill	1 <i>Corylus</i> shell – selected. completed
340	93		All <i>Quercus</i> . Completed
340	92		All <i>Quercus</i> . Completed
340	83		1 <i>Corylus</i> roundwood – selected. Both <i>Quercus</i> and <i>Corylus</i> wood in rest – not counted

Jacqui Huntley
EH Regional Science Advisor
15th December 2005

WOOD05 radiocarbon samples – round 2. January 2006

Due to an error in the register some samples selected from Building 1 were, in reality, from Building 2 and therefore un-necessary for dating. Some other material was deemed unsuitable for dating and therefore more samples were required from Buildings 1, 3 and 4.

Context	Sample	Archaeology	Charcoal
Building 1			
2037	<315> 5mm	Building 1 post hole	2 fragments <i>Corylus</i> charcoal selected, these had very different growth patterns. Otherwise there was only 1 fragment of <i>Fraxinus</i> .
2037	<316> 2mm	Building 1 post hole	Couple of tiny scraps of charcoal and one fragment of small indet cereal. Not suitable.
2029	<520> 2mm	Building 1 post hole	No 5mm fraction. 1 fragment glassy charcoal but not identifiable. 1 fragment each <i>Betula/Corylus</i> and <i>Salix/Populus</i> . The latter two not separable as a rule. The former two can be separated but the fragment was so small that dust would result if fractioned. Nothing in <521> the 1mm fraction
2017	<411> 5mm	Building 1 post hole	1 fragment <i>Corylus</i> , 2 bits from a single unidentifiable twig selected. <i>Fraxinus</i> 2 and <i>Quercus</i> 1. Otherwise a couple of small fragments of monocot root base.
Building 4			
363	<81> 5mm	Building 4 post hole	<i>Corylus</i> 8-10mm roundwood selected. Another similar piece and large nubers <i>Quercus/Fraxinus</i> fragments. 1 fragment <i>Betula</i> selected and ditto 1 fragment <i>Arrhenatherum</i> (false oatgrass) tuber. A few other fragments of diffuse porous types.
363	<82> 2mm		Hulled <i>Hordeum</i> , emmer wheat and <i>Avena</i> grains, culm nodes

			– this context needs full analysis. 1 grain each of barley and wheat selected. Gives Alex a good choice.
348	<69> 5mm		1 fragment each Pomoideae and <i>Corylus</i> selected. Lots of <i>Quercus/Fraxinus</i> left but not much other diffuse porous.
348	<70> 2mm		Emmer and barley grain again, maybe 10 or so of each. Emmer chaff noted in <71> the 1mm fraction. Context needs full analysis. 1 emmer selected.
346	<117> 5mm		1 fragment <i>Betula</i> , 1 <i>Corylus</i> and 1 hulled <i>Hordeum</i> selected. Lots and lots of <i>Quercus</i> flakes.
346	<118> 2mm		10+ grain noted – mostly barley but 1 emmer too.
346	<119> 1mm		Emmer glumes and occasional spikelet forks, 1 barley rachis internode and quite a few <i>Stellaria media</i> and undiff Polygonaceae – context needs full analysis.

Building 3 samples are minute and it is extremely unlikely that 2 fragments of different taxa will be present in any one context. Flots from any one context are all less than 1ml volumes, mostly considerably so and much is in the 300 micron fraction anyway.

Jacqui Huntley
11th January 2006

References for evaluation report

- Cotton, J.A. (2005). *Analysis of environmental samples from Woodbridge Quarry, Northumberland*. unpublished report for Archaeological Research Services, Buxton.
- Fairweather, A.D. & Ralston, I.B.M. (1993) The Neolithic timber hall at Balbridie, Grampion Region, Scotland: the building, the date, the plant macrofossils. *Antiquity* **67**, 313-323.
- Huntley, J.P. (1994). *A1 Walshford-Dishforth (WD93). The plant remains. Part II: Fields 88 - 105*. Archive report. Northern Archaeological Associates, Barnard Castle, Co. Durham.