Proposed extension to Ripon Quarry

North Yorkshire

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NYCC HER						
SNY	16254					
ENY						
CNY	8668					
Parish	6014					
Rec'd						

Geophysical Survey and Fieldwalking Methodology

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1. Introduction

The proposed extension areas are situated at two locations operations of 3.5km and 7km to the north-west of Ripon centred on 1 GR SE 305 7 to and 295 778 together covering an area of approximately 43 hectares.

The sites are located in the valley of the River Ure in an area of archaeological potential containing prehistoric monuments of name and importance, set u of which are scheduled. A review of existing information the the protension areas has concluded that areas of higher grader . ove a jav in the northern extension area may have a moderal EOlog. Liobably only being subject to periodic flooding in the premistoric period. The southern extension area would probably have been prone to regular intanciation taking the early prehistoric period and would probably have been margine, land until the post-medieval period. On this assessment this area is considered to have a moderate to low archaeological potential.

In light of the archaeological review a programme of archaeological works has been proposed involving geophysical survey and field walking, the name of which will inform a scheme of intrusive evaluation view trenching. The accoment is prepared by Archaeological Services WYAS of the state of Account of Account as Ltd and Hanson Ltd and provides a written scheme of accessigation for the field intrusive phase of the evaluation. It is expected that the results of the surveys will help to determine appropriate methodologies for any subsequent work. A separate written scheme will be produced for the trial trenching phase at a later date as required.

2. Aims and Objectives

General objectives of the non-intrusive surveys as the:

- to identify areas/features of possible archaeological potentia:
- to establish the extent and possible character of any such archaeological interest
- thereby provide information to guide the positioning of trial trenches in Stage 2 of the evaluation

It is proposed that a programme of both magnetometry and fieldwalking be undertaken to achieve the above objectives although slightly different methodologies may be utilised in the two different expansion areas. Following discussion and consultation and an assessment of the field conditions at the time of commission alternative strategies, possibly including magnetic susceptibility survey, may be considered appropriate instead of magnetic scanning (see below).

The geophysical survey will initially comprise rapid magnetic scanning (or possibly magnetic susceptibility survey – see below) across the two proposed extension areas. It is suggested that scanning should be carried out even across those parts of the site where cropmarks have already been identified and which will probably be subject to detailed survey anyway as this should give an indication of the possible strength of the anomalies which may be encountered during scanning.

This in turn will demonstrate the efficacy (or otherwise) of scanning as a means of identifying other areas or anomalies of possible archaeological potential.

The second objective will be achieved by selected detailed magnetometer survey. The detailed survey will focus on:-

- areas of potential/anomalies highlighted by the scanning/magnetic susceptibility survey
- topographically favourable locations

Apparently 'blank' areas as well as those identified as of potential following the scanning/magnetic susceptibility will also be targeted to validate the 'negative' scanning/magnetic susceptibility results. No sample detailed block shall be smaller than 0.36ha (an area equivalent to 60m by 60m). The percentage of the overall area subject to detailed (recorded) survey shall be determined following discussion with the clice 'consultant and consultation with North Yorkshire County Council Heritige Unit.

Geophysical survey is particularly useful in identifying areas of enclosed settlement activity through the identification of anomalies caused by soil filled for the success dite is pits and ring gullies and of burnt features such as but due or king.

A success note mentary too date fieldwalking will also be undertaken across the normer exchange area narough this will take place after the initial phase of trenching and this, document on results, may inform an additional phase of trenching.

Fieldword incluvourid identify areas of settlement activity through the location of schubble or concentral out of cultural material such as pottery or flints. This to use the is the data location beschubble areas of unenclosed settlement.

3. Cethology, Environent, Reporting and Archiving

The stability will involve driving to site, condition surveys of each area, grid end of time and de-front digeophysical survey recording. Regular updates of partners and recease with the ayed back to the office by telephone.

C s

S in lan ing Archa	oist: Alistair Webb	0113 383 7517
Fulle Marines and America	on	0113 383 7505
fery Jo	David Berg	0113 383 5515
		07796 996441/46

λ^{n-n}	10 L	S	S with set out all survey areas using a Trimble 5600
t	ion	90 . J ^{- en}	Tria ble RTK 5800 dGPS. The site grid will be tied
i.	nan	Liands	a tures and superimposed onto digital Ordnance

Survey mapping supplied by the client. Some marker pegs will be left on site, so that the call. 10011 third party.

If required the magnetic susceptibility survey we are undertaken with curtington MS2 meters with MS2D field coils. E.e. find the Library 10c in logged on an HP iPAQ mobile device. The part using a Garmin eTrex Legend with an accure to the Bin. Local collect analysed using MapInfo and AutoCad (hap 20) of enhanced susceptibility.

The fieldwalking will be undertaken use intervals and the gridded areas systematically in kedialong traverses im apart. Finds collections will be made at intervals not an anding 5m with each individual collection being assigned a GPS coordinate use a Gaussin a frex lags d with an accuracy of ±3m.

The magnetic scanning will be uncertaken gradiometers. A basic grid at 100m incurvals ranging poles placed at 10m intervals. Trave with bamboo marker canes left at the location potentially archaeological in nature. the positioning of blocks for later detailed (recorded) magnetometer survey.

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dia charait logged will be areas

.or the grid Lab. he

Gellen F. 3 Fluxgate . tout thin ac sea and be walke Lat 1 m aration may another intermeted as those m i rill ermine

For the detailed magnetic survey Bartington Gradie 301 magnetic gradie upters will be used. Readings will be taken at 0.25m interses in zig-zig, traverses im apart within 20m by 20m grids such that 1600 readings of be taken in each grid. These readings are stored in the memory of the instrument and are later downloaded to computer for processing and interpretation. Da be entailed back to the office for monitoring purposes. Geoplot 3 (Geoscan de earch) software will be used to process and present the data. The data will be interpreted and presented at suitable scales and located on Ordnance Survey base maps as requested. Processed greyscale, raw XY trace plots and interpretations will be presented at a scale no less than 1:1000 in the report.

The survey methodology, report and any recommendations will comply with guidelines outlined by English Heritage (David et al 2008) and by the IfA (Gaffney, Gater and Ovenden 2002). All figures reproduced from Ordnance Survey mapping are done so with the permission of the controller of Her Majesty's Stationery Office (© Crown copyright).

The report will contain all relevant information including archaeological background, aims, results, discussion and conclusion as well as all technical and processing information.

A project archive will be prepared in accordance with recent good practice guidelines and submitted to the client in acceptable formats. The geophysical archive will comprise:-

an archive disk containing compressed (WinZip 8) files of the raw data, report text (Word 2000), and graphics files (Adobe Illustrator and AutoCAD 2007) files.

a full copy of the report

4. Health and Safety

Archaeological Services WYAS has its own Health and Safety policies compiled using national guidelines and which conform to all relevant Health and Safety legislation.

In addition, Archaeological Services WYAS will undertake a Risk Assessment detailing project-specific Health and Safety requirements that all members of staff will be made aware of plice to the fieldwork commencing and which that all project members will be required to sign before the start of any fieldwork.

Archaeological Services WYAS will ensure that Health and Safety takes priority over archaeological matters.

5. Instance

Archahol gital Services WYAS is covered by the insurance and indemnities of the Characteristic of the field Metropolitan District Council. Insurance has been effected which a characteristic of the c

Archard and Services WYAS currently employs four dedicated geophysicists to a further two staff with extensive field experience. Summary Constant the for all the staff to be employed on the proposed project are constant to the proposed role in the project.

**************************************	ment:	Alistair Webb BA MIfA
روب	is physical Project Manager:	Sam Harrison BSc MSc AlfA
	o ical Geophysicist	Ian Wilkins BSc MSc
8	d rieal Ceoplaysicist	Emma Watson BSc PGDip
	t Geophy icist	Alex Harrison BSc
	viar (Constructions)	Marina Rose BSc

BAN A

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o Uterhand mier Archaeological Geophysicist

A Societ Manager responsible for overall management of the societ teams, as well as other developer funded projects. He has more than nineteen years ience being involved in geophysical surveys since the her is written more than one hundred geophysical clients including national bodies such as English a transmission and the Environment Agency, as well as for

Ripon Quarry Extension: Geophysical Survey and Fieldwalking Methodology

consultancies such as Watern	n Gio		Green,
Jacobs, archaeological contra	ors	s de	jy, AC
Archaeology, Headland Archae	gy.	OÇ	its a nd
Northern Archaeological Association	Sa	11. I. A	
Alistair gained his BA in End	nn.		1995
successfully completed mod	S		gnetic
Methods of Survey, part of the	Scill	êo _n	, run by
Bradford University.			

Name:- Sam Harrison BSc MS
Current Position:- Senior Archaelolo
Proposed Role:- Project Mana //S
Sam graduated in 2002 from Lodford s
in Archaeological Sciences having a provide a second concernation of solution of a second concernation of a second concer
Geophysics. He subsequently sfinded in the MSc in
Archaeological Prospection, also at E
Prior to joining Archaeological Sarvice 2004
Sam worked for Stratascan Ltd her nce in
shallow sub-surface archaec jica uding
magnetometry, earth resistance grade data data de dectro-
magnetic methods. Sam is fam ar visit and a state of an such
as the Geoscan FM36/256, Geoscan Roll 2019/2019 10:00
and MS2/D and software programs in a lan Coord 3, and Map,
MapInfo and ArcGIS.
Since joining ASWYAS Sam has malage in ancient projects
from small scale Heritage Lottery
infrastructure projects.
Sam is a member of the Institute for / Same and Sa
(AlfA) and a member of the Internal Cochet, for Antopological

Name:- Ian Wilkins BSc MSc

Current Position: - Archaeological Geographics

Prospection (ISAP). Sam is also CSCS of the lade

Proposed Role:- Geophysical Surveyor

Ian graduated in 1984 from Aston Cultersity with a Boomons) in Geological Science. After this period the worked takes member of companies including British Rail, North clear oil and generation companies and Scott Wilson where he worked on read and rail projects with Radar and Seismic equipment. In 1059 Ian grachated free the MSc course at Bradford University in Archae Is neal Prost ention. After this he worked for T&A survey, a Dutch geop winal special treatment, Geoservices International and GSB Prospection in Bradford.

lan is experienced in the used of magnetic, earth remains and electromagnetic equipment. Although an experienced geophysicist lan also has experience of excavating Mesolithic and Iron Age archaeology. Ian is CSCS certified.

Name:- Emma Watson BSc PG Dip

Current Position: - Archaeological Geophysicist

Proposed Role:- Geophysical Surveyor

Emma graduated from the University of Bradford in 2006 with an Honours degree in Archaeological Sciences. Following this she remained at Bradford studying towards an MSc in Archaeological Prospection due for completion in late 2008. Emma joined Archaeological Services May 2007 and has since gained experience in environmental sampling, excavation and more recently geophysical survey. Emma is CSCS certified.

Name:- Alex Harrison BSc

Communt Position: - Assistant Geophysicist

Photosed Role:- Geophysical Surveyor

A constrained from the University of Bradford in 2005 with an Honours and a far Arch of Indical Sciences. Following this Alex remained at and as a tenching assistant to the Principals and Methods of Survey In the Since J and ASWYAS Alex has been gaining experience in a state of icces and recently was appointed as a geophysical state or. Alex has now over one year of experience in geophysical survey. In this contrast,

s-1 arina BSc

Supervisor

s a los supervisor

arcauction in a Sc in Archaeology from the University of mouth in 57 Larina Rose has worked continuously in okay, privide lay excavation and field survey on a wide range of the base aloo of all periods in, first working for Worcestershire of by Unit i mina has a long-term involvement with the Wood Hall manor burlect and supervised a project on the River Aire dimension of all sth-century river craft and associated industrial multi-period settlement site at Easington, East with d for Archaeological Services WYAS since and d.

Archa e	·	S	ect personnel may be subject to change.
Prepare		Э	
© Archa			

Andrew Josephs Environmental Consultant

Specialist in Archaeology and EIA

Lucie Hawkins Development Control Archaeologist North Yorkshire County Cou Racecourse Lane Northallerton North Yorks

12th July 2009

via e:mail

Dear Lucie

Promosed Extensions to Ripe a Quarry

Hanson I to has commissioned us to manage pre-planning application archaeological work at Ripon Quarry, We understand Hanson will submit a formal EIA scoping request to NYCC in the coming weeks in relation to a proposed extension to the Quarry. This letter seeks to propose the scope of the field evaluation post-harvest this year, so that we have advance warning of potential archaeological constraints early in the planning of the extensions, the maximum a cas of which are hown on Figure 1.

We record e that the extensions lie in an area of archaeological potential and are therefore provide the set approach to evaluating that potential. There is also the setting and CO

The aim of this letter is therefore to propose the scope of that field evaluation either for your are solval or retinement. First, lowever, we set out the background information necessary for you to condition the scope of contration required.

Review of information

River themay is located in the valley of the Ure, a rich Prehistoric landscape of national schelded i ses at Thornborough to the north and Nunwick and Hutton in tres other as pit all them of possibly contemporary date lies 100m north of the N enter ion boundary (HER MNY24218) a further 11(31. a neuroscience, The deserts I medieval settlement of East Tanfield (MNY21024) lies 500m -net set. Work by State Moorhouse suggests the possible presence of a medieval mill 11 fills, to the existing quarry. si

Anus a couth west of 1.5 reca Ch. 1

man villa with a sociated defences, Castle Dykes (HER MNY21030) lies is southern extension area. A square cropmark enclosure is ing the sectensic surea and to the west of The Batts (MNY 24031). Inside the nosable in angular enclosure (MNY 19916), and group of

tered Office Actrobus House, 18 College St. Fetersfield, GU31 4AD. Sc Andreas "mergin stration no 117360 • VAT Registration no 5.376000

Andrew Josephis 🗢 Environmental 1

cropmarks have been plotted by the National M give flood plain of the Ure and would probably have a set	me 11 - c - i -	d on the
Work within the existing quarty As part of previous planning applications, the Usersi of evaluation works and watering briefs with both extension. No work has been pried out in the the including aerial photographic to assment and prints pitting and trial-trenching were undertaken during to 15 and		erios hern sment king, test-
The land examined comprised river terrace at an analyzing of	r 4taa liif	
In November and December 1998 a 100% geoperation the existing quarry area that lies to the south of the survey undertaken by GSB utilised a Magneton and (Good with the reading being taken at Imetre intervals. The new within the area and some of these correlated with the There were also indications of linear trends, for the modern deep ploughing. A few potential feature and indicative of Prehistoric activity. However, when the test archaeological.	151 a 1. Y .0 1 Y .0 40.1 - 0 6 f.a - 7 8. 1 5 . 5 . 5 . 1 Y .0 6 . 1 Y .0 7 . 1 Y .0 1 Y .0 7 . 1 Y .0 7 .	hin ical ter) a contalies tographs. A five of possibly to be non-
Fieldwalking (ENY207) was undertaken using the same of Thornborough Henge project by Dr Jan Har particularly useful at identifying early Prehistor and the detectable by geophysical survey or random treacting and the a total of 35 test pits were dug.	ds a Ter- Let I. When Carl	d on the t is sily sectaside,
Only 4 artefacts of potential on haeological or each a 25ha – 'a possible flint tool and slake, a potential contract a might be late Medieval pottery." Despite strong inclusion the aerial photographs and from the geophysical screece archaeological sites from fieldwalking.	re I i. s. srg R f rehosol i bane s	exceeding <i>ce of what</i> s, on both ations of
Trial-trenching (ENY208/209) was therefore un stake based assessment, geophysical survey and field was ingetered 10m), were placed across anomalies and a further trench sta 20m).	≥ck] g. ≿ix ass aseri. a	the desk- ex (5in by
None of the trenches proved to have any archa. And is the although a number did possess evidence of palaeo-channels.	ns, déa las report com	artefacts,
<i>'It would therefore appear that it is features within a geophysical survey has detected and that there is little, or t</i>	under Thae	that the
Further geophysical survey was carried out on the west of extension in 1998. A few possible geophysical anomalies 2002, a watching brief (ENY2624) was carried out on the we extension along the line of a new access track. The area com- was no evidence of the geophysical anomalies identified activity within the corridor, other than the dumping of was entrance and signs of post-medieval night soiling.	ige of the oright of the origh	d northern result, in e northern 5m. There aeological mto a field

In 2005 a watching brief over the was undertaken on the surrent plant she tree that was considered to hold high archaeological potential (based or peophysical are bland aerial photographic evidence). The work revealed only one possible archaeological disture. This

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was the base of an undated pit, heavily truncated by ploughing. The most obvious remains were the 'herring bone' pattern of field drains. These correlated with the linear trends identified in the earlier geophysical survey.

Despite a thorough approach to identifying potential archaeological features, supported by watching brief, no significant archaeological features have been identified within the current quarry since 1998.

Historical Assessment

An britial eventiew of information contained in previous reports and in the HER, coupled with an assemant of aerial photographs, clearly demonstrated that the potential for arelated leave the proposed extensions was strongly influenced by the River Ure. It was even identified the extension of aerial detailed historical assessment with the aim of both receptible used in the Use is recent history and providing landscape context for guiding possible working and restoration strategies.

The absence may was carried out by Anthony Breen at the Yorkshire Archaeological Society's Liberry and A. hives in Leed and at the North Yorkshire Record Office in Northallerton. His remot is carried ed.

In blick he are is clear evidence of the river shifting course on a regular base i solution difficulties is land management. Quite drastic and expensive measures were the for the production exclusion area; the for in the Pennycroft area would be allowed to hill provide and flood unbindered. An important feature on 12. is second as the parliamentary and rural district boundary that a long "It's addad a control convers to the east and North Stainley with 110 figure : the west. The Loundary almost certainly marks an earlier course of the river \leq the that the the shifted position in the medieval period by up to 300m. 229 show the area to the east of the boundary as being In. It is shown as woodland (probably bogey) sandwiched between the Ure to 11 west Figure 2). e grander therefree progical potential version areas has been undertaken to A. s to be made based upon terrain I have a second of the extentions to known archaeology in the 1]] V. I a till nordern es in los mares in height from 38.18m AOD on the northern to a proximited 3 and in the southern boundary nearest the river. The edge the state is either a shown by a break of slope, running north-west/south-east Ċ: a. can be a strike stopes towers the river from 30m in the north-11 \$* tof this area to been prone to flooding. Aerial all ochannes of braided channels as soil and a transfer a area. C i 1 and to the north of Thornborough Henge Complex X AOD and work fit this model, but the henge at 1 N and does not about 29m and does not t... I cannot be directly applied this

Andrew Josep is 🛇 Environmental Con. Juni

far downstream on the Ure.	ting it was not protector.	en e		sve
Studying the topographical for vicinity of the Ure, it is sugge, would have been dry in the e have been prone to flooding. I may mark the edge of the riv archaeological potential.	of the landscap. I dearly I that for the non-arm ext y prehistoric p d. T is would seggest at the in this period, the task	Alexis feat for each and of for each construction diabetee air air diabetee air air a		al in iy ite ave
For the southern area it is orthogy. Thus during the early pro- to regular flooding and it is co- period to be present.	ated that local address of the second corie, this area with the second correct that there is very the	i no Elision Sam i Elision Salatana qLi		ntly rone this
Later prehistoric, Roman and I	t-Roman			
There is no evidence from the topography, the potential exist 1998 and 2002 on the wester Within this area the National M	northern area rehe or Previous cyalunt and a boundary revea are pping Program are pion	ci i perio ming : fre- mos et	- - 8	on cen cest.
Cropmarks have been plotted western cropmarks would appoint one is shown on the OS of the been in a zone of seasonal floor occupation or management of t mill, lying as they do at the cor- In the medieval period this wo No feature is shown in this are Cleared aims and the	the southern of asian to be post-nedited tield but not before the ea- ding and suggest of they e river and its restrices. T fluence of the Light Water Id have been on the same at on the Estate due of the	may to why the carries the based on the culture of the former of of the former of of the former of of the former of of the former of		the ding ve al f a Ure. ers. Ox
Close) give any clue.				

The northern area was most probably in agricultual task from the carry of the crivit onwards, whereas until the post medieval period, the southern extension was goal day low as ways marginal land (see above). By the 17^{th} century some crofts is a been of table is that ingle house for a shepherd or cowherd probably lay within the most – most likely curved as until higher ground in the north-west.

Proposed evaluation

Geophysical survey

Evidence from the evaluation that was under sen on the existing quarter that geophysical survey does recognise anomalies, although these were later proven through evaluation to be non-archaeological.

Land within the northern area will be examined in detail by a synctometry.

Within the southern extension, the presence of coopmarks suggests that architecting of later prehistoric, Roman or post-Roman date may be present although their intermittent may suggest that they are partly masked from detection by all to allow don. Geophy address may help to plot their extent and it is recommended that detailed survey is earned cut ends the cropmarks and their vicinity. Scanning may be appropriate scross the rest of the network with detailed work as necessary (taking advice from geophysicist), and this is likely to pick up the courses of the numerous palaeochannels that have crossed the area.

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Trenching

The extent and number of trenches cannot be determined until the results of the geophysics have been obtained. However, trenches should clearly be targeted at the cropmarks in the southern area and any potential archaeological anomalies identified by the geophysical survey, together with a control sample. In the northern area, trenching of land above 36m which has been identified as having the potential to have been dry during the earlier prehistoric period, as well as the interface between wet and dry land would be appropriate. This is therefore likely to cover the whole of the northern area. Based upon the results of previous work in the existing quarry, the results of watching briefs and assessment of topography, it is considered that on the whole the archaeological potential of the northern extension. Is moderate, and the southern extension moderate-to-low. Archaeology will probably be bualised and it is not considered that extensive random trenching would be efficient at LLC tifying the archaeological resource, although this viewpoint may change after the results of the geophysical arvey.

Fie hyali.ins

Fieldwall in the existing quarry was extremely unproductive, despite lying in zones of granting the optical potential than the proposed extensions based on cropmark evidence. It we drive a productive however to carry out fieldwalking of the northern extension as this has the conduct of the identify predictoric sites. Alluviation of the southern area as a result of finance and data its inaccessibility to early-prehistoric occupation, would suggest that finance is being the northern becaution of the informative.

En internet to prove Assessment

The result of the evaluation will be discussed together with the desk-based assessment and his check and a sment to identify zones of archaeological potential within the proposed encoded to the labeling structure will be designed that much include preservation *in situ* or by $r_{\rm c} = 3$.

The entropy of the destrated the produced somethern extension agon Norton Convers Hall and its R and the destrated for the destrated of the assessed, and the results will influence the working and $r_{\rm entropy}$ and r_{\rm

7

It is the second of earry out the field-based evaluation in a staged manner starting with generating a second of earops have been harvested at the beginning of August. The results of the standard with VCC and a strategy for therebing agreed. After ploughing, field of the standard with the phase of the more extension of the advallking. Written Schemes of the standard of the standa

C)

Image: International extension retains evidence of the northern bank of a former course of the

The second work have been to be water or regularly flooded during the second se

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medieval period. The river has shifted position several times and this will note in the refect on the preservation of archaeology. Cropmarks identified by the NMP merodule is to later prehistoric, but it is tempting to suggest that they may be related to the site of a constraint mill that originally lay on the eastern bank of the Ure, and which was possibly about back when the river shifted course isolating it from Norton Convers.

I look forward to hearing from you.

Yours sincerely,

Andrew Josephs Director

Attachment: Figures, Historical Assessment.