

The Landscape Research Centre

28 FEB 2011
DEVELOPMENT
MANAGEMENT

Archaeological Recommendations arising from the archaeological assessment of two potential house plots at The Old Vicarage, Sherburn.
Friday, 10 December 2010



Figure 1: Sherburn Village with archaeological geophysical surveys undertaken by the LRC, indicating intense past activity to the North, East and West of the village, implying intense past activity reflecting continuity of settlement from the Prehistoric period to the present day.

The village of Sherburn is unusual in that it is an example of a village which appears to have been continually settled in the same location since the late prehistoric period. Archaeological geophysical survey has revealed aspects of the Prehistoric, Romano-British and Anglo-Saxon settlements in fields that abut the village to the East, North and West (Figure 1). This sort of settlement continuity is rare in Britain and may owe something to the presence of an early church which

effectively anchored the village in contrast to others where there seems to have been widespread settlement shift in the eighth and ninth centuries. The core of modern Sherburn has suffered from extensive infill development, much of which has occurred with only limited archaeological observation. Given the exceptional nature of the settlement evidence in Sherburn, which is of national rather than simply regional importance, it is critical that all developments in and around the village are accompanied by appropriate archaeological investigations to recover evidence that would otherwise be lost as part of the development process.

Geophysical survey and evaluation trenches in garden of the Old Vicarage confirmed the high levels of past activity that we might have expected in this location, although the limited cover of the geophysical survey gave a result that was difficult to interpret in detail. The two evaluation trenches opened were designed to test two potential house plots, one at the southern end of the garden lawn and a second cut through a raised bed with an east-west brick retaining wall c.1m high that extends to the southern boundary of the garden.

Whilst the high level of activity identified in the trench cut into the lawn area (trench AA, Assessment Report 117, Figure 2) was to a large degree anticipated the depth of the archaeological deposits was a little surprising. In Trench AA an ill-defined layer of chalk rubble identified at a depth of .45m appears to define the upper boundary of the archaeological deposits which at the deepest extend to a depth of about one meter. In trench AB an identifiable archaeological horizon was identified at 1.3m, which had been buried by mixed and re-deposited material. One is tempted to suggest that the rubble layer identified in trench AA marks the horizon also identified in trench AB, which has simply been buried when the 'raised bed' was established.

Before attempting to identify a written scheme of works to deal with the archaeology of this site during building works it is important to review alternative approaches to development that may reduce the archaeological impact of the development. Clearly Sherburn has an exceptional importance with reference to the archaeological evidence of human settlement in the Vale of Pickering, and may owe some of this importance to its situation, with a plentiful water supply and slightly elevated position on a spur, the remnants of the Wykeham moraine, which provided a route across the wetlands that dominated the centre of the Vale in antiquity. Tony Brewster's excavations of the parts of the Manorial complex undertaken ahead of housing developments in the 1950's and 1960's, to the west of the old vicarage garden, showed the relatively high levels of preservation of the buried archaeology owing to the presence of wind-blown sands which have gradually accumulated over time in this part of the Vale (Brewster and Hayfield 1994). Infill development within the village and large scale building works at the Wards factory, over the last 30 years, have compromised or destroyed large areas of archaeology, most of this happening either without any or only limited archaeological observation.

Excavation of the building footprints of the proposed houses would most likely cost well over £15k and whilst the intellectual return gained from such work would no doubt be considerable, the preferred option is to preserve the archaeology in situ if possible. If conventional foundations were deployed these would probably have to be excavated by hand to natural which, given the depth of the deposits would be both difficult and may need to be shored to comply with health and safety regulations. An alternative and in my opinion a better option would be to employ either a shallow raft or shallow strip-foundations and use modern light weight timber framed construction. Modern timber framed constructions have a long life and generally have high insulation values and eco credentials with lower running costs. It is appreciated that the service trenches will have to be fully examined archaeologically regardless of the type of foundation deployed.

Present evidence indicates that in the garden lawn area the archaeological deposits are well compacted, as they are essentially cut into and backfilled with sand, and are protected by up to .45m of compacted sandy soils. In the raised bed area, the location for the second dwelling, there is a much greater depth of overburden, in which the upper metre is less compacted and, in the area tested, appeared to be re-deposited material presumably brought in to make up the raised bed. Some of this material would no doubt have to be removed, and whether it could be spread over the lawn area and compacted to raise the ground level is matter of civil engineering in which I am not qualified to comment. But by levelling the whole area by reducing the raised bed area

raising the garden area the sealed deposits may be better protected. If the foundations did not penetrate the ground beyond a depth of .35m it is likely that the archaeological impact would be slight.

Whatever the case the client has agreed that the archaeological impacts of the development should be dealt with during the building process, in accordance with standard practice.

All subsurface disturbance will be observed by an archaeologist and any features that will be impacted by the development will be examined to establish their nature, date and possible function, those exposed but not disturbed will similarly have to be recorded and in some cases sampled.

Full and detailed archaeological records supported by drawings and photographs will be created and where appropriate samples will be retrieved for environmental analysis.

Once the fieldwork is complete and the archive created, appropriate analysis of the material evidence will be undertaken to clarify details of date range in particular and a full report will be compiled for inclusion in the North Yorkshire Heritage and Environment Record (HER).

All recording and excavation strategies will follow standard Landscape Research Centre (LRC) practice, using techniques applied in the sand and gravel landscape of the area for more than 30 years.

What level of publication is required can only be determined once the excavation work is complete, at a minimum the report will be made available on the internet and archived with NYCC HER. Since our objectives are to preserve the deposits in situ wherever possible, the quantity of finds such as ceramics and faunal material is likely to be low, an arrangement would need to be made to transfer these to a local museum, in the case of Sherburn this could be Malton or Scarborough.

With a commitment to deal with the archaeology in an appropriate and professional fashion already declared, I am satisfied that once the form of foundation and building plans are agreed and an appropriate archaeological condition attached to any planning permission, this development can both contribute to our archaeological knowledge base whilst at the same time preserve the majority of the archaeological evidence in situ.

Professor Dominic Powlesland FSA

Director

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References:

Brewster, T.C.M. and Hayfield, C, 1994, 'Excavations at Sherburn East Yorkshire' *Yorkshire Archaeological Journal*, 66

The Landscape Research Centre

A fluxgate gradiometer survey report



carried out over an area
to the south of the Old Vicarage, Vicarage Lane, Sherburn,
North Yorkshire

11/00166/FUL on behalf of Mr Preston Lovegrove

RYEDALE DM

16th September 2010

28 FEB 2011

DEVELOPMENT
MANAGEMENT

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Report information

Client	Mr Preston Lovemore
Report type	Fluxgate gradiometer survey
Parish	Sherburn
County	North Yorkshire
Central grid reference	SE 9583328 7720152
Report number	LRC 116
Site code	540
Date of Fieldwork	16/09/2010
Date of report	16/09/2010
Fieldwork personnel	James Lyall MA (Hons), MSc
Report by	James Lyall MA (Hons), MSc
Produced by	The Landscape Research Centre Ltd

11/09/2010

Summary

The Landscape Research Centre Ltd (LRC) carried out a fluxgate gradiometer survey on behalf of Mr Preston Lovemore over a small area to the south of the Old Vicarage, Vicarage Lane, Sherburn, North Yorkshire (see Figure 1 for location). The magnetic response of the site was good, with a number of features of potential archaeological origin (including ditches and a potential Grubenhaus) were detected.



Figure 1 The extent of the area covered by the geophysical survey (in red) on a background map of Sherburn taken from Google Earth

Methodology

It was initially hoped to conduct the survey using a *Foerster Ferex 4.032 DLG* fluxgate gradiometer 4 probe array. This machine allows for high resolution data collection, and takes readings every 10cm along the traverse axis and every 50cm along the grid axis (thus taking 18000 readings in a 30m grid). This machine collects samples at a 0.2 nT sensitivity. Because the cart uses a real time kinematic GPS to position itself, each data point of the survey has an inbuilt sub 2cm accuracy. However, due to the location of tall trees to either side of the area, apart from a tiny area in the centre of the lawn this was not possible.

The survey was thus conducted using a Bartington Grad 601-2 fluxgate gradiometer. The zigzag traverse method of survey was used. The survey was carried out by taking readings every 25cm along the traverse (walking) axis and every metre along the grid axis (thus 3600 readings for each 30m by 30m grid). The sensitivity of the machine was set to detect magnetic variation in the order of 0.1 nanoTesla (nT).

The data from the magnetometer has been processed and presented using G-Sys (an in-house developed Geographic Database Management program which can also display, process and present digitised plans and images). This report was produced using Microsoft Word 2000 and Adobe Photoshop 6 for further image manipulation. All maps have north pointing to the top of the page.

The field is currently a small open grass area, and has been given a site number of 540 in the LRC numbering system. As initially proposed, the full extent of the area (some 30m by 60m) was to be surveyed, but this was not possible for a number of reasons.



Figure 2 Tree coverage along eastern border

Tree coverage along the eastern boundary and a shrub border along the western boundary meant that no survey could take place there. The southern part of the site was bounded by a brick wall, and contained a greenhouse and two vegetable beds, again not suitable for survey. In the end, only the lawn area was surveyed, with a total area of 0.057 Ha.

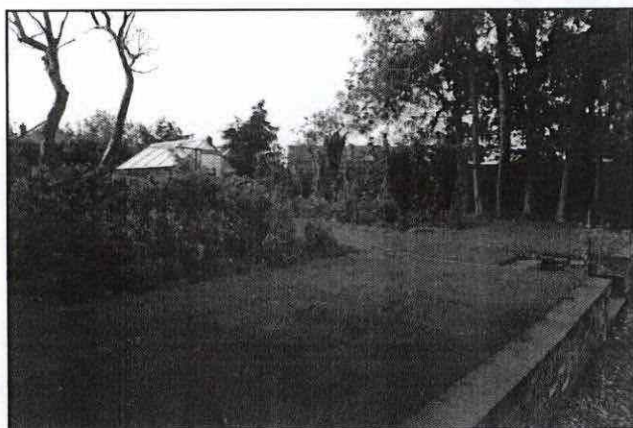


Figure 3 Southern vegetable beds and greenhouse

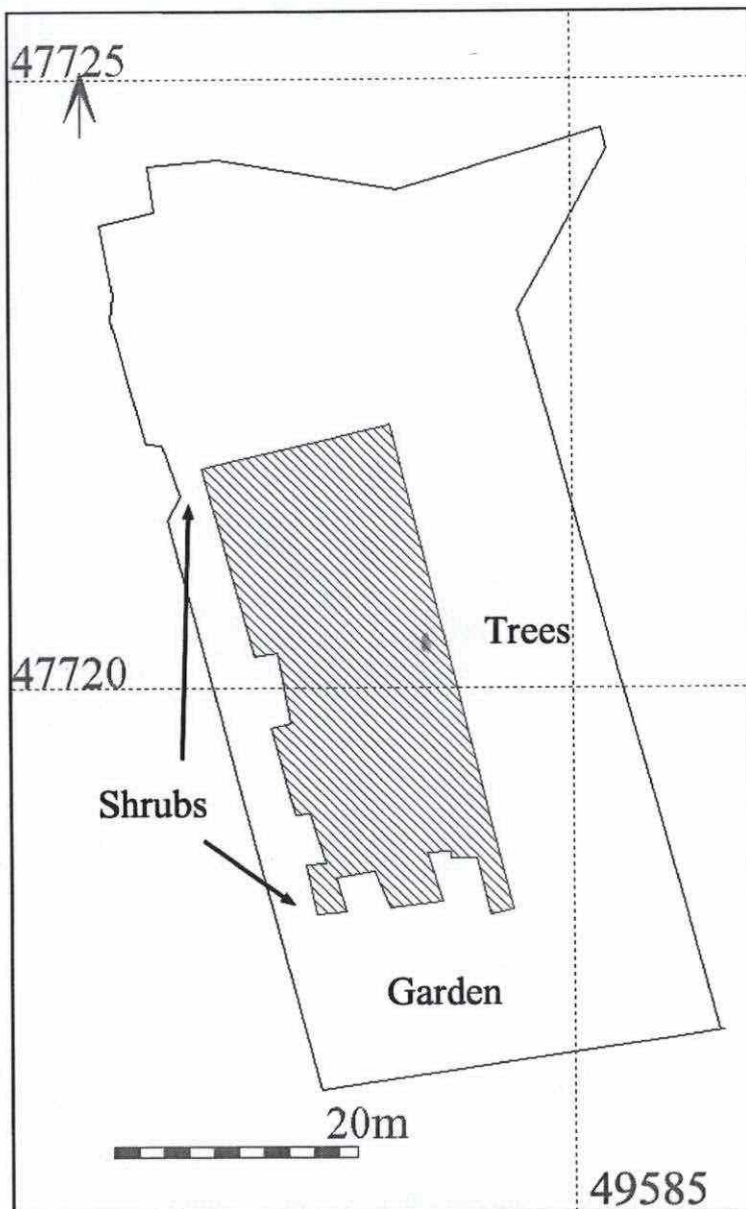


Figure 4 Area surveyed (red) showing location of obstacles within property boundary (black)

Gradiometer results and interpretation

The results of the survey are displayed as a greyscale image (see Figure 5) and as interpretative plans (see Figure 6). Features discovered by magnetic survey techniques are referred to as “anomalies”, defined as such because they are different from the background norm. When using a gradiometer, these anomalies can be either positive (greater) or negative (less) than the background norm. Figure 5 indicates that all anomalies in this survey were positive (lighter areas in the greyscale image).

The small black and white areas in the greyscale image are dipoles (iron spikes), which indicate the presence of iron objects. These are generally found in the topsoil, and although they could indicate the presence of archaeological objects, it is much more likely that they relate to more modern detritus, such as broken ploughshares, iron horseshoes, shotgun cartridges etc.

A total of 6 anomalies were discovered, of which 5 were linear anomalies and a single example was localised or a discrete anomaly.



Figure 5 A greyscale image of the magnetic data from the Bartington survey

The linear anomalies

A total of five linear anomalies were detected (see Figure 6 for numbers and location). Number 1 (indicated in blue in Figure 6) clearly cuts through anomaly 2 (in red in Figure 6), and appears to run through the centre of the lawn before turning to the north-east and heads for the corner. It may be no coincidence that a drain is located here, indicating that linear anomaly 1 is of a relatively recent date.

Linear anomaly 2 is cut by anomaly 1, and has a NNW-SSE alignment. It may relate to a ditch of some description, although at 2.6m wide it is more likely be the result of a number of recuts (cleaning and redefinition of the original ditch), rather than a single event.

Anomaly 3 was a slightly curvilinear anomaly, detected towards the southern extent of the surveyed area (between the rose gardens). Because of the location of the roses, it is not possible to say which direction the ditch takes to the east, and it could follow one of two different lines (joining with either anomaly 4 or anomaly 5).

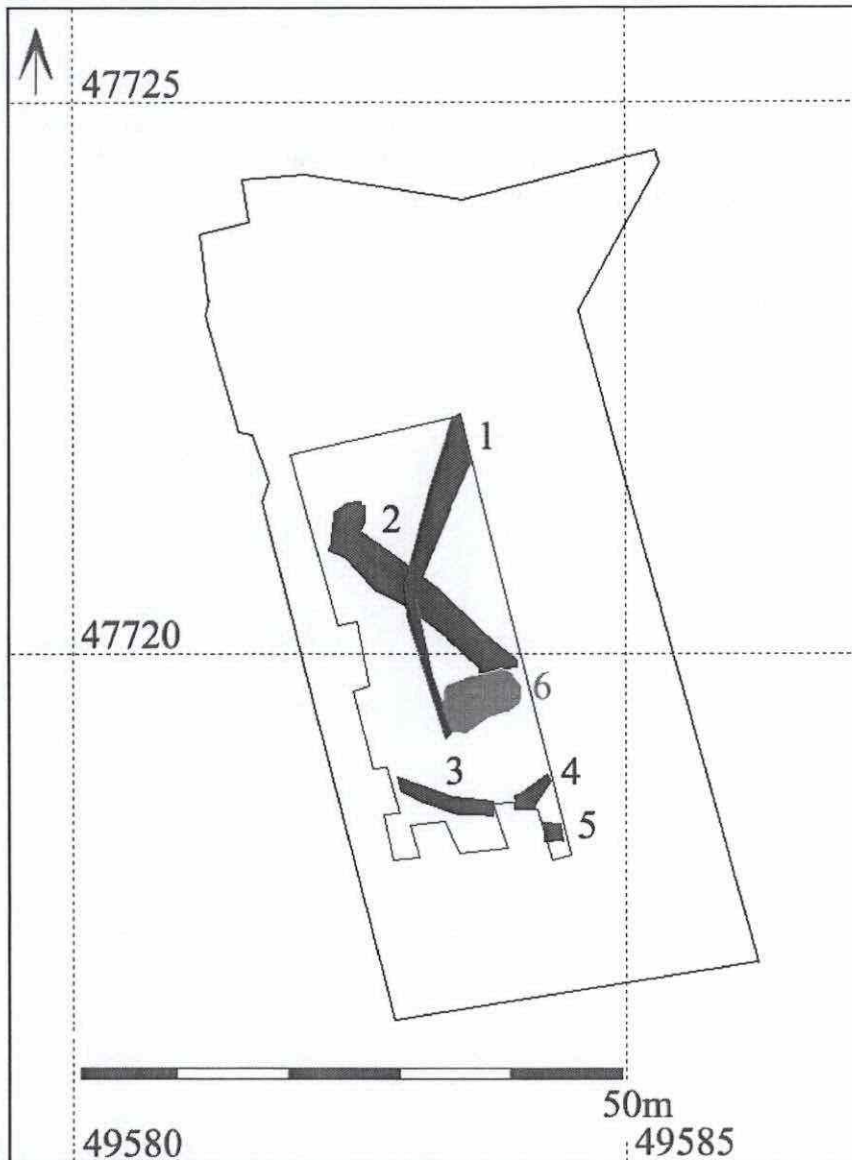


Figure 6 Interpretative plot of anomalies

The localised anomaly

A single large (6.2m by 4.3m) localised anomaly (number 6 in Figure 6) was detected, located towards the central eastern part of the surveyed area. Although a number of interpretations are possible, it is currently believed to be a possible Grubenhaus. Grubenhaus is a German term which describes a specific form of Anglo-Saxon structure which involved the initial excavation of a large hole in the ground which was subsequently covered by a timber framed superstructure. When the building went out of use, the hole was generally used as a convenient rubbish dump, thus providing the enhanced magnetic signal common for these structures. Although these features are normally found in groups, the small survey area means that others could be in close proximity (see Figure 7 in Appendix One).

Conclusions

In conclusion, it can be stated that the area was conducive to magnetic survey techniques, and 6 anomalies of potential archaeological significance were detected. These included 5 linear features (one of which is likely to be recent) and one possible Grubenhaus (an Anglo-Saxon structure).

Survey report by James Lyall MA (Hons), MSc

On behalf of the Trustees
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The Old Bridge Barn
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16th September 2010

Appendix One

It is worth noting that the LRC has previously conducted surveys of the fields to the west and east of Sherburn village, and these surveys demonstrate that the Sherburn is surrounded by intense settlement activity, particularly of the Iron Age, Romano-British, Anglo-Saxon and Middle Saxon phases.

The entire field to the west of Vicarage Lane was surveyed in 2002, and indicated intense archaeological activity in the immediate vicinity (see Figure 7). In particular, it can be seen that a number of Grubenhäuser as well as ditches similar in character to those detected at the Old Vicarage survey are present.

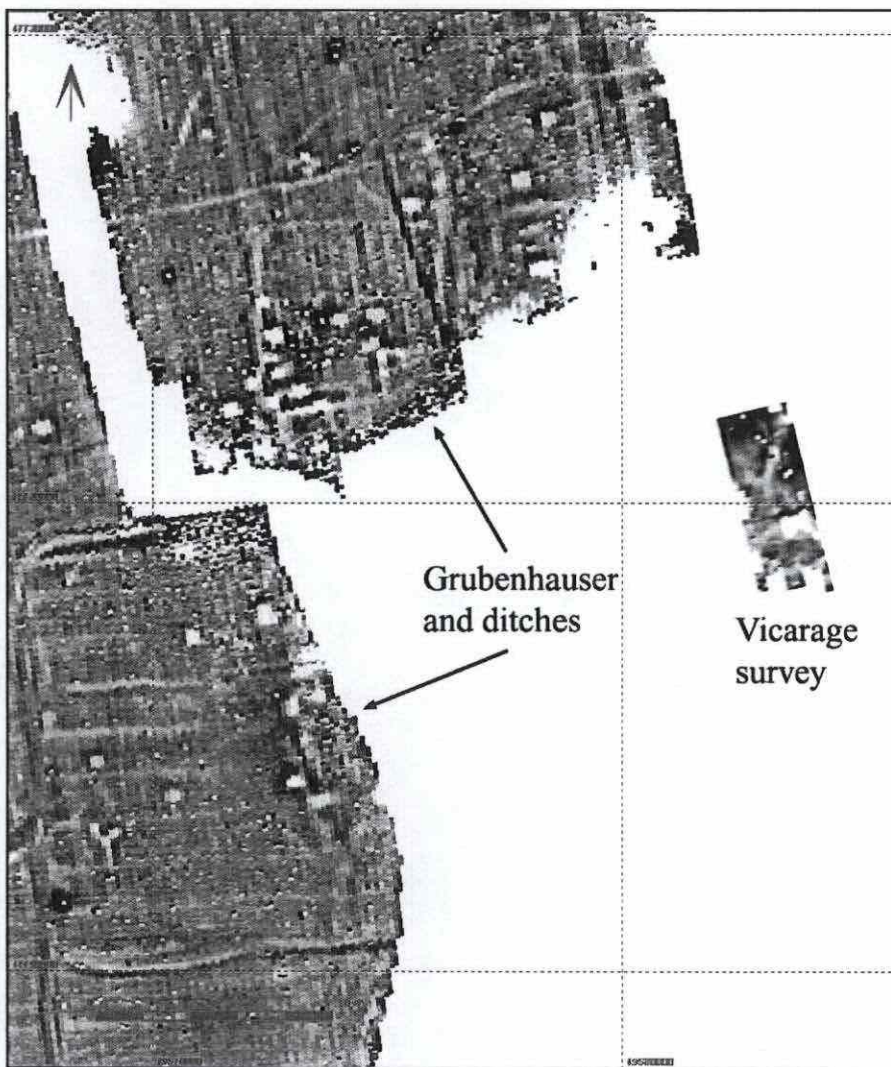


Figure 7 Grubenhäuser and ditches previously detected by LRC surveys

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DEVELOPMENT
MANAGEMENT**TREE REPORT**
The Old Vicarage, Sherburn

01482 872873

1. Instructions.

To carry out an inspection of the trees in the grounds of the Old Vicarage and record information in relation to BS 5837: trees in relation to construction (2005).

To advise on trees suitable for retention in the proposed development of the grounds.

To advise on measures required for the protection of those trees to be retained during the period of construction.

2. Date of inspection.

The trees were inspected on the 11th January 2010.

3. Background information:

The trees within the grounds of the Old Vicarage form a backdrop to the vicarage and have recently been made the subject of a Tree Preservation Order. The Order was served on the 16th December 2009 and comprises an 'Area' Order covering all trees within the garden. The survey will consider the health and condition of all trees within the grounds which will allow the local authority to modify the order so that only those individual or groups of trees considered worthy of protection need be retained.

4. Condition of trees.

Please see Appendix No 1 attached to my report which gives information on each tree and groups of trees in relation to the following:

- Tree types and groups with reference number
- Species
- Height
- Stem / trunk diameter at 1.5m above ground level
- Crown spread
- Height from ground level to lowest part of crown
- Age Class
- Physical condition

M Waller BScFor(Hon).PD Arb.FArborA.
On behalf of Waller Tree Consulting

TREE REPORT
The Old Vicarage, Sherburn



Structural condition
Other Comments
Preliminary Management Recommendations
Safe useful life expectancy
Tree Quality Assessment in relation to 'BS 5837 - Trees in relation to construction' 2005.
Photographs

The trees are located on the attached drawing.

5. Wildlife and countryside Act:

Where birds and bats may be affected by work to trees and hedges, consideration should be given to the timing of the work and whether the work is essential.

Bats are protected under the Wildlife & Countryside Act 1981 and subsequent legislation and it is an offence to deliberately or recklessly disturb them or damage their roosts. Trees should be inspected before any works commence and if the presence of bats is suspected advice will need to be sought from either Natural England via the Bat Line on 0845 1300228. Further advice on bats is available from 'The Bat Conservation Trust' (020 7627 2629).

6. Development Comments:

6.1. General:

The area for the proposed construction of new dwellings is to the rear of the existing Old Vicarage.

6.2. Tree Constraints Plan

The locations of the trees are shown on the attached drawing along with my grades for each tree as shown in Appendix No.1 and in relation to BS5837 (2005).

6.2.1. Root Protection Areas:

I have indicated my considered Root Protection Areas on the attached drawing for the possible protection of all trees of grades 'A' and 'B' with the

TREE REPORT
The Old Vicarage, Sherburn



Grade 'C' trees that could be retained where they do not affect the design of the site.

6.2.2. Above ground constraints:

The above ground constraints relate to the crown spread of the trees and their ultimate size. The actual crown spreads are shown on the attached drawing.

7. Arboricultural implications assessment:

7.1. Tree constraints and design:

- The existing access to the grounds of the Old Vicarage is to be changed to service the existing property and the proposed new dwellings. As Beech trees 1- 4 are either grade R or Grade C, in my opinion then I have no objections to their removal as long as replacement Beech trees are planted in suitable locations to compensate. I would suggest that consideration could be given to the upright form of Beech, *Fagus sylvatica* 'Dawyck'.
- The access road to service the dwellings to the rear should be constructed directly between the row of Beech on the eastern boundary and the group of Hollies, G1. The Holly trees of group 1 will provide a good screen between the access road and the rear garden of the Old Vicarage. Some crown lifting of the hollies would be required but a non-dig road of 3m wide could be constructed, allowing 0.5m from the stems of the beech and 0.5m from the stems of the hollies. The road should be constructed as detailed in section 9 and located as shown on the attached drawing.
- Services to supply the new dwellings must be directed outside of the Root Protection Areas unless they can be installed by thrust boring at a depth of greater than 750mm. Or, I would recommend that they be installed through the rear lawn of the Old Vicarage which will require only minor intrusion into the Root Protection Area of Beech 5 near to the vicarage.

7.2. Proximity of trees to structures:

Please see section 6.1.

8. Arboricultural method statement and tree protection plan:

M Waller BScFor(Hon).PD Arb.FArborA.
On behalf of Waller Tree Consulting

TREE REPORT
The Old Vicarage, Sherburn



When trees are retained then the Root Protection Areas indicated on the attached drawing should be protected during development. The protected areas will be the Construction Exclusion Zones. Fencing must be erected prior to any demolition or construction works commencing. No storage of materials, mixing of concrete, parking of vehicles etc is to take place within the protected areas designated on the attached drawing. These areas to be protected with secure fencing which will prevent access throughout the development and which will be installed prior to starting and not be removed until completion. Depending on the scale of the development and the trees to be protected, the protection fencing should be appropriate to the degree of protection required. On small scale developments such as this, the fencing may be 'Heras-type' fencing some 2m tall with supports *driven* into the ground. The fencing must be clearly labeled "TREE PROTECTION, DO NOT MOVE".

All fencing should be checked on site by a Tree Consultant to ensure it is placed in the correct locations and is adequate for the purpose.

9. Non-dig roads and driveways

Method statement for the Construction of Non-dig roads and driveways;

The section of non dig roadway should be constructed prior to any site development as it will be required for access of machinery and materials to the site.

Protective fencing must be erected along the proposed sections of non-dig driveway prior to construction. This fencing should be set at a sufficient distance to allow construction to take place but which excludes any further access below the trees.

No construction of the non-dig roadway will be allowed within a distance of 0.5m of the stem of retained trees. There will be no excavations or soil stripping within the line of the roadway.

Any surface vegetation on the section of road will be treated with a contact herbicide and not one that will allow any leaching into the underlying soil. Sharp sand is to be used to even out ground irregularities. A Geo-textile oil resistant membrane will then be placed on top of the roadway. A geo-grid / cell web structure of depth 200mm will then be installed. The geo-grid will then be filled with 20/40 mm clean angular stone. On top of the geo-grid and infill, a further geo-textile membrane will be incorporated. On top of the additional membrane, there must be 30mm sharp sand. Final surfacing

TREE REPORT
The Old Vicarage, Sherburn



must be with block paving, Eco-block or decorative gravel. The side of the construction must utilise treated timber edging.

The construction of the non-dig driveway should be installed under the supervision of a tree consultant.

10. Tree works:

All tree works can be carried out prior to any construction works commencing if it does not involve vehicles crossing the root protection areas.

Otherwise, it can be carried out after construction of the non-dig roadway which can then be used for crane or lorry access. Any works to trees required for the access of machinery and vehicles must be approved by the local authority prior to works commencing.

11. Tree Planting:

Any replacement planting required by the local authority can be the subject of a planning condition and be required if the site is given planning approval.

12. Restrictions:

The Old Vicarage is the subject of an 'Area' Tree Preservation Order which requires written approval for any tree works.

The Old Vic	Date of Shipment No. 10	Location The
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REPEATED OF TERMS

Key: 28 FEB 2011

DINGS Structural Condition (SC)	Age	class quality assessment (AC) based on BS5837:2005 (TOA)	physiological condition	Condition
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the number which may refer to the trees highlighted in Good Ref - Reference

Old Vic	Date of Survey: 10/01/2010	Location: The
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Preliminary Recommendations	Remarks	Bulb Height (m)	Stem Dia (mm)	Crown Spread	Ht of						
M	<p>1.8 M diameter bright 5 stems between ground level and 2m.</p> <p>One stem has been lost to North east at 2.5m above ground level.</p> <p>Deadwood through crown.</p> <p>Bark damage to west between 0.5-1.8m</p>		(gl) 2	<table border="1"> <tr> <td>S</td> <td>5</td> </tr> <tr> <td>W</td> <td>7</td> </tr> <tr> <td>E</td> <td>10</td> </tr> </table>	S	5	W	7	E	10	3
S	5										
W	7										
E	10										

The Old Vic	Damage Description	Priority	Location	Threat
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No Urgent action	<p>Minor damaged wood (DoE) Beech through brown.</p> <p>Stem damage ground level to 0.75m to west.</p> <p>Exposed wood in damaged area appears sound.</p>	<table border="1"> <tr> <td>W</td> <td>8</td> </tr> <tr> <td>E</td> <td>10</td> </tr> </table>	W	8	E	10	2
W	8						
E	10						

Cutlery at ground level	<p>Beech and adjacent trees</p> <p>Part of group of 5 Beech trees (Nos 5-9).</p>	<table border="1"> <tr> <td>W</td> <td>3</td> </tr> </table>	W	3	2
W	3				

the Old Vine Stage, Shumway N2010 Location Th

No Mrgent action required closely spaced 208 up of Nees1
 A No's 10-13. 40
 Sound and healthy.

S	5
W	7
E	4

No Mrgent action required closely spaced 4928 up of Nees6
 but could be considered for 20 9
 felling and replanting east at 40 degrees.

S	6
W	0
E	10

The Old Vidette	Dutch Elm Disease	Location The
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Cut Ivy at ground level from ground level
 leave to die back Dutch Elm Disease obvious
 present time.
 Ivy present to 12m.
 Deadwood through crown.
 Bark damage to stem to north between
 1-2m.
 Wood sound.

N	10
S	5
W	6
E	7

The Old Vic	Damage, Boundary No 10	Location Th
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E	M	F	P 2 Decay ground level to 55022st	int	N	5
A			heartwood.	23	S	4
			Centre hollow.		W	5
			Close to house.		E	2
			Danger to property.			

No Mrgent	at	23	No Mrgent at 23	A69324	N	4
			No Mrgent at 23		S	7

The Old Vic	Stage, Apartment No 10	Location Th
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FeIM A	G	P27 No sign of Dutch Elm Rise Wound north side ground level to 2m Decay present in wound.	N S W E	5 4 1 5	C
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No Mrge A	G	P210 Carefully examined stone at 24 20	N S W E	3 2 3 1	C
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