

# Archaeological Hedgerow Survey on Land to the West of Broad Lane, Rochdale



By J.M Trippier Archaeology and Surveying Consultancy

For Wainhomes (North West) Ltd

NGR: SD 9110 1080

December 2013- June 2014

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## SUMMARY

Archaeological fieldwork was required in pursuit of a planning condition attached to the proposed residential development of some 3 ha of pastureland on the outskirts of Rochdale. Following a desk based assessment it was concluded that the only features of heritage interest were two hedgerows that were present in 1844 or earlier and which therefore constituted historic hedgerows. Accordingly it was required that they should be subject to a hedgerow survey, a topographical (earthwork) survey and trial trenching. This work was carried out on behalf of Wainhomes (Northwest) Ltd by J.M. Trippier Archaeological and Surveying Consultancy. The field boundaries were found to be fairly regular, suggesting a largely post-medieval date as originating from organised forms of enclosure, rather than the more irregular boundaries of the late Medieval period (Baker & Butlin 1973; Adkins *et al* 2008). The fieldwork concluded that the hedgerows were of the full hedgebank type with double ditches one of which utilised what may have been the valley of a natural watercourse and was possibly of an earlier date than the others.

## ACKNOWLEDGMENTS

Thanks are due to Wainhomes Developments Ltd. who instructed us and to the Greater Manchester Archaeological Advisory Service (GMAAS) for their advice and support. The topographic survey was carried out by CPS Surveys Ltd of Wigan. The trenching of the hedgerows was carried out under the archaeological supervision of Steven Price who also recorded and analysed the results and contributed to the report as well as preparing and amending the required drawings. John Trippier carried out the hedgerow survey and managed the project.

## 1. INTRODUCTION

- 1.1 Wainhomes (NorthWest) Ltd are carrying out the residential development of approximately 3 hectares of land (NGR SD 9110 1080) some 2.5 km to the south of Rochdale Town Centre. Town Centre on the land shown edged red on the plan at Figure 2.
- 1.2 As a result of a planning appeal by Wainhomes re Application No112/D55400 a condition was inserted by the Inspector which stated that *No development shall take place until a programme of archaeological work has been implemented in accordance with a written scheme of investigation which has been submitted to and approved in writing by the local planning authority. No part of the development shall be occupied until the site investigation has been completed in accordance with programme set out in the approved written scheme of investigation and provision made for completion of all elements of the*

*programme*. The land edged blue on Fig. 2, which is being developed by Messrs Taylor Wimpey has been treated in a similar manner

- 1.3 Following an archaeological desk based assessment (DBA) by J.M. Trippier Archaeological and Surveying Consultancy (JMTASC) the Heritage Management Director (Archaeology) at Greater Manchester Archaeological Advisory Service (GMAAS) agreed that the principal interest on the land edged both red and blue was in the surviving historic field boundaries which were in existence in the mid-19th century but may have been considerably older and which in places retain hedgerows and evidence of banks and ditches. Accordingly JMTASC was required to establish which boundaries and other features of archaeological interest will be affected by the groundwork's for the development and to devise a Written Scheme of Investigation (WSI) setting out a programme of survey, excavation and recording. This was to comprise a historic hedgerow survey, earthwork survey and trench excavation across features of archaeological interest and the preparation of a report on the results which would be lodged with the Historic Environment Record. The WSI was agreed with GMAAS with the result that the proposed programme of fieldwork was set in train. This report is in respect of the red land which is in the possession of Wainhomes sets out the results of the fieldwork on their land. The work on the blue land, which is in the possession of Taylor Wimpey, has been reported previously.
- 1.4 The Written Scheme of Investigation (WSI) referred to above is at Appendix 1 of this report and incorporates relevant elements of the DBA also referred to above. This covers such matters as 'location, topography and geology; historical and archaeological background; the results of a 'walk-over' survey, the assessment of significance of any heritage assets' and the methodology for carrying out the required fieldwork. The latter is summarised below and is followed by the results of the various types of field work.
- 1.5 Two historic hedgerows, which are to be removed as part of the development process, were identified from historic mapping as dating back to at least 1844 (Tithe Map) and are predominately marked by hedges with some evidence of banks and ditches. The hedges generally comprise a mixture of mature hawthorn and elder. These are pointed up on the plan at Fig 2 and are referred to as Hedge 1 &2 respectively.

## 2. METHODOLOGY

2.1 The archaeological requirements were to carry out a historic hedgerow survey, an earthwork survey and a trench excavation across the field boundaries and hedgerows specified at para. 1.5 above. The methodology for each of these requirements will be as described below.

## 2.2 **The Hedgerow Survey**

2.2.1 A standard survey method has now been developed by Natural England's Hedgelink project and is contained in the [Hedgerow Survey Handbook](#) the second edition of which was published by Defra on behalf of Hedgelink in 2007. This method has been adopted and the survey field notes are contained at Appendix 3 of this report.

2.2.2 In brief the standard survey method involves the collection of the following information:

- Total hedgerow length
- Number and location of centrally positioned 30m lengths per 100m
- Number of different wood species per 30m length
- Presence of any 3 woody species per 30m length
- Number of standard trees
- Hedgerow shape & dimensions (including canopy)
- Total length of gaps
- Number of connected hedgerows, ponds or areas of woodland
- Presence and description of associated banks, walls and ditches, footpaths, bridleways, roads and byways
- Presence and description of species of resident animals, birds or plants

The standard survey information is supplemented with photographs at Appendix 4

## 2.3 **The Earthwork Survey**

2.3.1 The analytical survey of earthworks is a valuable method of providing a scaled representation of the form and condition of visible features of archaeological interest (Ainsworth et al, 2007, 3). In this case it will comprise a topographic survey of the lines of the hedgerows and the associated banks and ditches. The survey was undertaken using electronic surveying equipment (total station) by the clients' surveyors. The results were then given an archaeological overlay by Steven Price on behalf of JMTASC to produce results in accordance with English Heritage's Level 2 survey record which will typically comprise

- A diagrammatic plan showing the location or extent of the features

- A metrically accurate site plan, typically at 1:1000 or 1:2500 scale showing the form of the feature in plan. The plan should relate to topographical features and to modern detail (field boundaries etc) whether or not they are depicted on OS maps. The use of larger scales (e.g. 1:500 or 1:250) may occasionally be justified where relatively intricate detail need to be shown (unlikely in this case)

2.3.3 Drawings have been produced using the standard conventions the preferred method of presenting the results by means of hachures (Ainsworth 2007 33 et seq). These are contained at Figs. 3-6 of this report. A location plan showing the hedgerows' positions is at Fig.3 and earthwork survey and trench location plans are at Figs.4 and 5. A drawing of the trench sections is at Fig. 6. Spot heights related to the Ordnance datum are also shown.

## 2.4 The Trench Excavation

2.4.1 The trench excavation involved excavating trenches across the field boundaries and hedgerows specified above which appear to comprise a ditch and bank arrangements upon which the hedgerows are located. These excavations enabled the archaeological consultant to draw sectional profiles illustrating the shape of the earthworks in terms of their angles and slopes. The trenching was carried out by a mechanical excavator provided by the client developer under the supervision of the archaeological consultant.

## 3. RESULTS

3.1 **Hedgerow survey.** Both hedgerows were found to be similar comprising largely untrimmed and now shrubby hawthorn bushes but, with some elderberry and an occasional holly, now set out set out intermittently with some gaps where access points from field to field are located. The median height was 5m and the width at the widest part of the canopy was between 4 and 6m with the base of the canopy being approx 500mm above the ground. The ground flora was largely field grass. The hedgerows appeared to sit on a full hedgebanks. Hedgerow 1 appeared to have shallow dry ditches on either side. Hedgerow 2 appeared to have a shallow ditch on the east side with a much deeper one, possibly containing a culverted stream on the west side. These ranged from 1 to 2m wide. The trial trenching showed a similar if somewhat more complex picture

3.2 **Earthwork survey.** The hedge banks and ditches were surveyed by the geomatics contractors but under archaeological supervision. The hedges were found to sit on a single bank sloping away on both sides and with slight ditches on both sides but with a deeper and wider one on the west side of hedge 2. The spot heights taken did not really reflect the observed profiles but this may be because they fell away sharply under the hedges where it may have been difficult to take satisfactory readings.

- 3.3 **Trenching.** Due to logistical constraints trench 2 was excavated first, followed by trench 1. Following this an area approximately 10m square was excavated to try and locate some stone slabs recorded in the ground investigation report.
- 3.3.1 **Trench 1 (Plates B1 - B4)** revealed a shallow subsoil (02), c0.4m deep lying above the natural surface (03). The natural was mainly yellow clay containing small and medium stones, which patches of yellow sand. A central bank was recorded in line with the hedgerows with shallow ditches to either side. The ditches were c. 0.3m deep with the bank then rising by 0.4m. The profile is clearly shown at Plate **B4**. No artefacts were found.
- 3.3.2 **Trench 2 (Plates B5 - 8)** revealed a similar situation with a thin (c. 0.4m) subsoil (02) over the natural yellow clay (03). In this case there was a western ditch which was quite deep with sides which were steeply sloped (c. 55°). The bottom could not be found due to the waterlogged conditions which appeared to confirm that it was a natural stream or drainage channel (see Plates **B7 & B80**. A shallower ditch similar to those in trench 1 lay to the east of the hedge which appeared to stand on the upcast. No artefacts were found.
- 3.3.3 An area of open ground (**Plates 9 & 10**) was opened between the trenches in order to locate some stone slabs noted in the ground survey however nothing of archaeological relevance was discovered. The ground make up was the same as the other areas of the site, with a subsoil (02) c. 0.4m deep onto natural yellow clay (03).

#### 4. CONCLUSION

- 4.1 Both surveyed hedgerows were found to be on full hedgebanks with slight ditches on either side with the exception of the west side of hedge 2 where there was a deep ditch described at para. 3.7.4 of the desk-based assessment (Trippier 2013) as ‘a small length of open ditch in a shallow valley with a rising to the east and a sink to the north-west suggesting that potentially this ditch structure may be piped over a portion of its length or there may be natural rising groundwater at this location (REFA 2012)’. The latter reference refers to the client’s ground condition survey Drawing No 12005/02 confirms the line of this ditch.
- 4.2 The maps show that the field boundaries were fairly regular, suggesting a post-medieval date as originating from organised statutory forms of enclosure, rather than the more irregular boundaries of the late medieval period (Baker & Butlin 1973; Adkins *et al* 2008). However it should be noted that whilst these hedgerows have been identified as of the full hedgebank type with double ditches those to the south which were surveyed for Messrs. Taylor Wimpey (Trippier,2014) only appear to

have single ditches. It may be that the deep ditch on the west side of hedge 2 was a very early boundary respecting and making use of an existing watercourse and hedge 1 may possibly reflect this arrangement suggesting that the 'Taylor Wimpey' ones are somewhat later? In all cases the hedgerows were of the usual hawthorn, elderberry and occasional holly mix found in this part of the world although the greater abundance of elderberry in this survey compared with the more uniform presence of hawthorn on the 'Taylor Wimpey' land may also suggest different dates for the two sets of hedges.

## **5. REPORTING AND ARCHIVE**

- 5.1 Copies of this report will be supplied to the Greater Manchester Archaeological Advisory Service on the understanding that it will become a public document after an appropriate period (a maximum of 6 months after the completion of the assessment unless another date is agreed in writing with the Archaeological Advisor).
- 5.2 The archive resulting from the work, together with a copy of the report, will be deposited with the Rochdale Local Studies Library. The site archive, including finds and environmental material, shall be conserved and stored according to the UKIC Guidelines for the preparation of excavation archives for long-term storage (1990) and the Museum and Galleries Commission Standards in the Museum Care of Archaeological Collections (1992) 'Standards for the preparation and transfer of archaeological archives'.
- 5.3 The archaeological contractor will complete the online OASIS form at <http://ads.ahds.ac.uk/project/oasis/>. Contractors are advised to contact the HER Officer at the Greater Manchester Archaeological Advisory Service prior to completing the form. Once a report has become a public document by submission to or incorporation into the HER, Greater Manchester HER may place the information on a web-site. Provision and agreement will be made for the appropriate academic publication of any results that are not to form part of any further work.

## **6. COPYRIGHT**

- 6.1 Full copyright of this commissioned report and other project documents shall be retained by the author of the report under the Copyright, Designs and Patents Act 1988

## **7. BIBLIOGRAPHY**



## Abbreviations

OS Ordnance Survey

## Maps

OS, 1851, *1:10560 Scale Lancashire sheet 89*, Southampton

OS, 1894, *1: 2500 Scale sheet 80:5* Southampton

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### **Unpublished Sources**

Trippier, J.M., 2013, *Broad Lane, Rochdale, Greater Manchester: Archaeological Desk-based Assessment*, Client report for Wainhomes.

Trippier, J.M., 2014, *Archaeological Hedgerow Survey on Land to the West of Broad Lane, Rochdale*, Client report for Taylor Wimpey

## **Appendix 1: Written Scheme of Investigation (WSI) for Archaeological Fieldwork on Land to the West of Broad Lane, Rochdale**

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## SUMMARY

A proposal for the erection of 60 dwellings on 7.46 acres /3.02 hectares of land (NGR SD 9110 1080) approximately 2.5 km to the south of Rochdale Town Centre is subject to an archaeological condition. A desk based assessment required by the condition identified a number of historic field boundaries that will be affected by the development. The Heritage Management Director (Archaeology) at the Greater Manchester Archaeological Advisory Service has recommended a number of methods for recording these features and the resultant report will be entered on the Historical Environment Record for Greater Manchester. This Written Scheme of Investigation outlines the methodology for the recording exercise proposed by the developer's archaeological consultant and is submitted for agreement by the planning authority as required by the planning condition.

## 1. INTRODUCTION

1.1 The proposal is for the erection of 60 dwellings on 7.46 acres /3.02 hectares of land approximately 2.5 km to the south of Rochdale Town Centre. Planning permission for this development was granted on appeal by Wainhomes Developments Ltd against Rochdale MBC's refusal of permission (Application No112/D55400). The Appeal Inspector inserted a condition (No 4) which stated that *No development shall take place until a programme of archaeological work has been implemented in accordance with a written scheme of investigation which has been submitted to and approved in writing by the local planning authority. No part of the development shall be occupied until the site investigation has been completed in accordance with programme set out in the approved written scheme of investigation and provision made for completion of all elements of the programme.*

1.2 J.M. Trippier Archaeological and Surveying Consultancy has been instructed

by Wainhomes Developments Ltd to respond to this condition on their behalf. Further research revealed that the above condition is an abbreviated version of one that was recommended by Mr Norman Redhead, the Heritage Management Director (Archaeology) at the Greater Manchester Archaeological Advisory Service University, in respect of an earlier planning application by Taylor Wimpey (Application No.12/55581/OUT) in respect of the subject site and the land between it and the Motorway which together comprised part of the former holding of Ginnell Farm. That recommendation read in full:

***No development shall take place until the applicant or their agents or their successors in title have secured the implementation of a programme of archaeological works. The programme is to be undertaken in accordance with a Written Scheme of Investigation (WSI) submitted to and approved in writing by the local planning authority. The development shall not be occupied until the programme has been completed in accordance with the approved WSI. The WSI shall cover the following:***

- 1. A phased programme and methodology of site investigation and recording to include:***
  - a more detailed archaeological desk based assessment***
  - a more detailed targeted archaeological recording***
- 2. A programme for post investigation assessment to include:***
  - analysis of the site investigation records and finds***
  - production of a final report***
- 3. Dissemination of the results commensurate with their significance***
- 4. Provision for archive deposition of the report, finds and records of the site investigation.***
- 5. Nomination of a competent person or persons/organisation to undertake the programme set-out within the approved WSI.***

1.6 The appointed archaeological consultant carried out the more detailed archaeological desk based assessment required by recommendation 1 of the above addendum to the planning condition and submitted their report to the planning authority and the Heritage Management Director (Archaeology) GMAAS on 30 August 2013 for their consideration.

1.4 The Heritage Management Director (Archaeology) GMAAS has now confirmed that the principal interest on this site is in the historic field boundaries which survive across it and which were in existence in the mid-19th century but may be considerably older and which in places retain hedgerows and evidence of banks and ditches. The archaeological consultant is now required to establish which boundaries and other features of archaeological interest will be affected by the ground works for

development and to devise a Written Scheme of Investigation (WSI) which sets out a programme of survey, excavation and recording. This will comprise a historic hedgerow survey, earthwork survey and trench excavation across features of archaeological interest and preparation of a report on the results which will be lodged with the Historic Environment Record. This WSI accords with that requirement.

## **2. SITE LOCATION**

- 2.1 The site currently comprises an elongated stretch of east-west orientated undeveloped land immediately to the west of Broad Lane from which it is accessed and which crosses the M62 motorway in a north-south direction. The site is separated from the motorway by another strip of undeveloped land of an approximately similar size and shape. It is bounded to the north by existing residential development and to the west and northwest by more intermittent development. The site is centred on national grid reference NGR SD 9110 1080. The general location is shown with a red arrow on the map at Appendix 1 and the site is shown edged black at Appendix 2. It currently comprised three closes of grassland running from west to east.
- 2.2 The developer has advised the archaeological consultant that the old hedges along the northern boundary of the site and the northern boundary of the western close where the sunken way and possible 'ha ha' are situated are to remain as open space and will not be affected by ground works for development. The northern boundary of the central and eastern closes is now somewhat intermittent in terms of both survival and access as it forms the southern boundary of the house plots to the north and the degree of access to southern boundary which is shared with the adjoining owner is currently unclear. The required survey will therefore be concentrated on the two hedgerows dividing the west close from the central one and the latter from the eastern close as these are the most complete and representative of those that still remain and the northern boundary will be included as far as circumstances allow.

## **3. METHODOLOGY**

- 3.1 The archaeological requirements are now to carry out a historic hedgerow survey, earthwork survey and trench excavation across features of archaeological interest; namely the field boundaries and hedgerows specified at para. 2.2 above. The methodology for each of these requirements will be carried out as described below.
- 3.2 **The Hedgerow Survey**
- 3.2.1 The historic field boundaries within the subject site were identified from historic mapping as dating back to at least 1844 (Tithe Map) and are predominately marked by hedges with

some evidence of banks and ditches. The hedges generally comprise a mixture of mature hawthorn and elder, some mature and semi-mature ash and oak trees.

3.2.2 Useful guidance on the approach to be adopted in recording historic hedgerows is contained in UMAU, 1998, *Implementation of the Hedgerow Act 1997 A Pilot Project for Trafford MBC* and in Chapter 6 of the DEFRA *Guide to the Law and Good Practice* (nd). A standard survey method has now been developed by Natural England's Hedgelink project and is contained in the [Hedgerow Survey Handbook](#) the second edition of which was published by Defra on behalf of Hedgelink in 2007. This method will be adopted in this case using the report proformas contained in the hand book.

3.2.3 In brief the standard survey method will involve the collection of the following information:

- Total hedgerow length
- Number and location of centrally positioned 30m lengths per 100m
- Number of different wood species per 30m length
- Presence of any 3 woody species per 30m length
- Number of standard trees
- Hedgerow shape& dimensions (including canopy)
- Total length of gaps
- Number of connected hedgerows, ponds or areas of woodland
- Presence and description of associated banks, walls and ditches, footpaths, bridleways, roads and byways
- Presence and description of species of resident animals, birds or plants

The standard survey proforma will be supplemented with photographs and additional information as appropriate and there will be a summary report

3.2.4 Natural England has produced a research note which defines locally distinctive hedgerow types in the English landscape and there will also be a range of Local Biodiversity Action Plans for Greater Manchester produced for various woodland types and ground flora which will help to inform this survey

### 3.3 The Earthwork Survey

3.3.1 The analytical survey of earthworks is a valuable method of providing a scaled representation of the form and condition of visible features of archaeological interest (Ainsworth et al, 2007, 3). In this case it will comprise a topographic survey of the lines of the hedgerows and the associated banks and ditches. The survey may be undertaken using traditional techniques using compasses and tapes ( Bowden 2002 and Farrar 1987) but is more likely to be undertaken using electronic surveying equipment (total station).

3.3.2 English Heritage has identified 3 levels of recording standards: Level 1 comprises a basic

map/plan depiction and brief annotation whilst Level 3 is an enhanced and multi-disciplinary field record. So far as the earthwork survey is concerned Level 2 which is a metrically accurate and analytical interpretive record is most appropriate

### 3.3.3 The Level 2 survey record will typically comprise

- A diagrammatic plan showing the location or extent of the features
- A metrically accurate site plan, typically at 1:1000 or 1:2500 scale showing the form of the feature in plan. The plan should relate to topographical features and to modern detail (field boundaries etc) whether or not they are depicted on OS maps. The use of larger scales (e.g. 1:500 or 1:250) may occasionally be justified where relatively intricate detail need to be shown (unlikely in this case)

3.3.4 Report drawings will be produced using the standard conventions referred to in (Ainsworth 2007 33 et seq). Although the preferred method of presenting the results has traditionally been by means of hachures contouring may be used for large but straightforward features as in this case. Whichever method is used spot height related to the Ordnance datum should also be shown at strategic points.

## 3.4 The Trench Excavation

3.4.1 The trench excavation will involve excavating trenches across or through the primary features of archaeological interest; namely the field boundaries and hedgerows specified at para. 2.2 above which appear to comprise a ditch and bank arrangements upon which the hedgerows are located. These excavations will enable the archaeological consultant to draw sectional profiles which will be of value in illustrating the shape of the earthworks in terms of their angles and slopes.

3.4.2 The trenching will be carried out by a mechanical excavator provided by the client developer (Wainhomes). The machine driver will excavate a trench across the banks and ditches under the supervision of the archaeological consultant.

3.4.3 The location of the trenches will be determined by the archaeological consultant subject to agreement with the client who will be able to amend the consultant's proposals where they are likely to interfere with existing watercourses. (*Within the northern central area of the site there is a small length of open ditch in a shallow valley with a rising to the east and a sink to the north-west suggesting that potentially this ditch structure may be piped over a portion of its length or there may be natural rising groundwater at this location (see REFA 2012 in previous WSI).*)

3.4.4 The archaeological consultant will cease work and consult with the client where previously unknown watercourses or other features are discovered during the course of the excavations. Similarly if unexpected archaeological features are discovered the work will be



suspended whilst the consultation takes place with the Heritage Management Director (Archaeology) GMAAS.

- 3.4.5 It is not expected that the trenches will extend any deeper than 1.4 metres below the existing ground surface but if they do then archaeological consultant will need to liaise with both the client and the Heritage Management Director (Archaeology) GMAAS as to the appropriateness of extending the trenches to provide for the battering required to ensure the health and safety of the on-site archaeologist.
- 3.4.6 An adequate written site record will be maintained of archaeological features and finds encountered. Context recording will be to Liverpool Museum standard method and all contexts identified in face sections will be given unique numbers and described on proforma sheets. Sections and plans of archaeological features will be drawn on dimensionally stable media at 1:20 or 1:10 scale as appropriate.
- 3.4.7 An adequate photographic record of the evaluation will be prepared using digital photography to illustrate in both detail and general context the principal features and finds discovered. The photographic record will also include more general photographs that illustrate the nature of the works undertaken and their site context.
- 3.4.8 A short written report will be produced explaining the trenching programme and the results. Section and plan drawing will be included which will include metric spot heights related to ordnance datum. Their position should also be plotted on the diagrammatic plan (see para. 3.3.3 above). Standard conventions should be used so that it is clear what feature the section cuts through. If necessary the vertical/horizontal scale ratio will be varied on the reported drawings if the gradients are too slight to be adequately represented but this will be stated on the drawings where adopted. The photographic record will also be included.

#### **4. REPORTING AND ARCHIVE**

- 4.1 A composite report will be prepared incorporating the reports of the various parts of the project outlined at paras. 3.2.3, 3.3.4 & 3.4.7 above. Copies of the report will be supplied to the Greater Manchester Archaeological Advisory Service on the understanding that it will become a public document after an appropriate period (a maximum of 6 months after the completion of the assessment unless another date is agreed in writing with the Archaeological Advisor).

- 4.2 The archive resulting from the work, together with a copy of the report, will be deposited with the Rochdale Local Studies Library. The site archive, including finds and environmental material, shall be conserved and stored according to the UKIC Guidelines for the preparation of excavation archives for long-term storage (1990) and the Museum and Galleries Commission Standards in the Museum Care of Archaeological Collections (1992) 'Standards for the preparation and transfer of archaeological archives'.
- 4.3 The archaeological contractor will complete the online OASIS form at <http://ads.ahds.ac.uk/project/oasis/>. Contractors are advised to contact the HER Officer at the Greater Manchester Archaeological Advisory Service prior to completing the form. Once a report has become a public document by submission to or incorporation into the HER, Greater Manchester HER may place the information on a web-site. Provision and agreement will be made for the appropriate academic publication of any results that are not to form part of any further work.

## **5. COPYRIGHT**

- 5.1 Full copyright of this commissioned report and other project documents shall be retained by the author of the report under the Copyright, Designs and Patents Act 1988

## **6. TIMETABLE AND STAFFING**

- 6.1 The work will be undertaken by suitably qualified and experienced staff. These will be managed by Mr. John Trippier BA (Hons), MRICS, PIFA who has been managing archaeological projects in the north of England for over 15 years and will carry out the hedgerow survey. The names and experience of the on-site staff who will be carrying out the earthwork survey and trenching will be provided to the Heritage Management Director (Archaeology) GMAAS prior to the commencement of fieldwork.

## **7. MONITORING ARRANGEMENTS**

- 7.1 It is understood that the Greater Manchester Archaeological Advisory Service Planning Officer may visit the site at any time and normally requires seven days notice of on-site work.

## **8. HEALTH AND SAFETY CONSIDERATIONS**

- 8.1 The archaeological contractor will comply with the requirements of all relevant Health & Safety legislation and with the Institute of Field Archaeologists Bye-Laws of Approved Practice and will adopt procedures according to guidance set out in the Health & Safety Manual of the Standing Conference of Archaeological Unit Managers. Before any fieldwork commences a risk assessment will be carried out by the appointed archaeological contractor.

## 9. INSURANCE

- 9.1 The archaeological consultant has both professional indemnity (£250,000) and public liability insurance (£2,000,000). Details will be provided if required.

## 10. CONTRACT

- 10.1 The archaeological consultant will enter into a written agreement with the client. That agreement and this project design will form a contract binding on both

## 11. BIBLIOGRAPHY

### Abbreviations

OS Ordnance Survey

### Maps

OS, 1851, 1:10560 Scale Lancashire sheet 89, Southampton

OS, 1894, 1: 2500 Scale sheet 80:5 Southampton

OS, 2002 1:25000 Explorer 277, Southampton

### Published Sources

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## **APPENDIX 2: FIGURES**

**Fig. 1: General Location Plan**

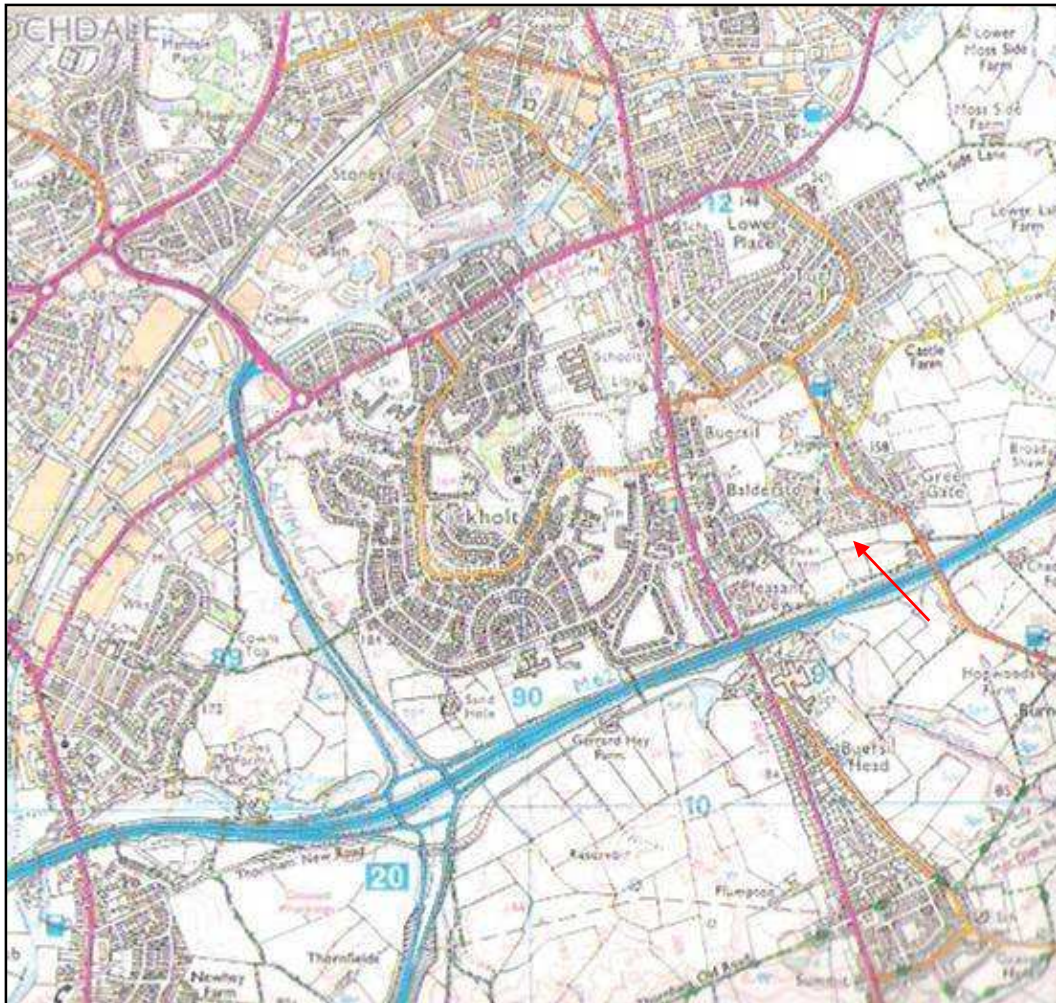
**Fig 2: Site Plan: Wainhomes land edged red; Taylor Wimpey land edged blue**

**Fig 3: Earthwork Survey and Trench Location Plan**

**Fig 4: Earthwork Survey of Hedgerow1 and Trench 1 Location Plan**

**Fig 5: Earthwork Survey of Hedgerow2 and Trench 2 Location Plan**

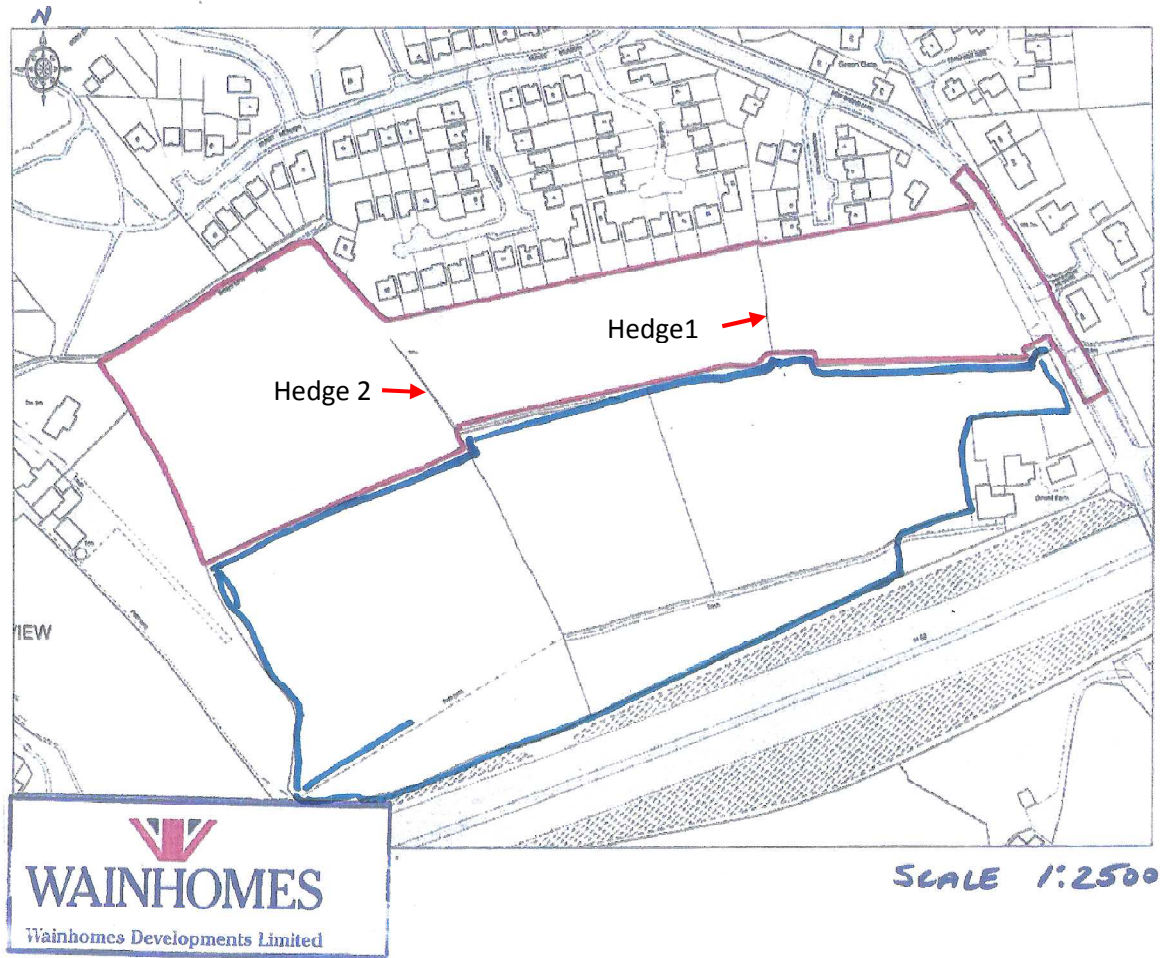
**Fig 6: Section Drawings**



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**Fig. 1: General Location Plan**



**Fig 2: Site Plan: Wainhomes edged red; Taylor Wimpey Land edged blue**

**Fig 3: Hedgerow Earthwork Survey Location Plan**



**Fig 4: Earthwork Survey of Hedgerow1 and Trench 1 Location Plan**

**Fig 5: Earthwork Survey of Hedgerow2 and Trench 2 Location Plan**



**Fig 6: Section Drawings**

## **APPENDIX 3: HEDGEROW SURVEYS**

## Field Survey Form

Local Hedgerow Field Survey Form											
PART A - ESSENTIAL ASSESSMENTS (To be completed for all local hedgerow surveys)											
TITLE OF SURVEY: Broad Lane Rochdale for Wainhomes											
Grid Ref	100km	Easting					Northing				
	Letters or numbers	10km	1km	100m	10m	1m	10km	1km	100m	10m	1m
SD	9	1	0	7	4	1	07	7	5	9	

Date	1	9	1	2	2	0	1	3	Hedgerow No	WH1-east
Surveyor(s): J Trippier; S. Price									Side Surveyed - Both Yes	
Eastern north-south hedgerow 1									Side A	E
									Side B	W

WHOLE HEDGEROW		
1 - NAME OF LANDOWNER/CONTACT DETAILS		
Name: Wainhomes (Northwest) Ltd	Address Cedarwood 2, Kelvin Close, Birchwood, Warrington, WA3 7PB	Tel: 01925 859650
1a - Permission granted to enter details onto database YES		
1b - Permission granted to publish ownership information (if relevant) YES		

2 - SURVEY TIMES AND WEATHER/OTHER CONDITIONS THAT MAY AFFECT THE SURVEY		
2a - Start time: 9.00	2b - Finish time: 11.00	2c - Weather: fine & sunny
2d - Were there any difficulties in surveying the hedgerows? If so please describe.		yes
Difficulty (i.e.): Lack of foliage due to time of year hindered identification-particularly of ground cover.		
At the time it was thought that development was imminent but in the event it was delayed for some 6 months		

3 - HEDGEROW TYPE		
3a - Shrubby hedgerow	Yes	3b - Line of trees
		3c - Shrubby with line of trees

4 - LENGTH (m) - between nodes or intersections with other hedgerows, to nearest 5m	50m
---	-----

5 - CONNECTIONS - total number of other hedgerows connected to each end of the hedgerow	End 1 north	End 2 south	Total
	2	2	4

6 - EXTENT OF SURVEY	6a - Whole hedgerow	√	6b - 30m Section(s)	
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WHOLE HEDGEROW OR 30m SURVEY SECTION (Sections 7-16)
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7 - ADJACENT LAND USE							
		Side A	Side B			Side A	Side B
7a - Arable	Arable crop			7e - Road/Route	Major Road		
	Uncropped margin				Minor Road		
7b - Grass	Improved	√	√		Track (unsurfaced)		
	Semi-improved				Footpath		
	Unimproved				Rail		
7c - Woodland	Young				Canal		
	Semi-mature			7f - Water	River		
	Mature				Stream		
7d - Other					Lake/pond		

8 - ASSOCIATED FEATURES – See also Part B section 18				
	Side A	Side B		
8a - Bank - Height (in metres) to nearest 25cm	30cm	30cm	8f - Ditch - internal - Dry (tick)	
8b - Average herb vegetation height (cm) to nearest 5cm	10cm	10cm	8g - Ditch - internal - Wet (tick)	
8c - Fence (tick)				
8d - Ditch - external - Dry (tick)	√	√		
8e - Ditch - external - Wet (tick)				

9 - UNDISTURBED GROUND (measured from the centreline of the hedgerow)			Side A	Side B
9a - Average width of undisturbed ground (m) to nearest 50cm*			2m+	2m+
9b - Average width of perennial herbaceous vegetation (m) to nearest 50cm*			1m+	1m+
NB * mark N/A or road etc if a road or built feature or hedge is adjacent to grassland or woodland				


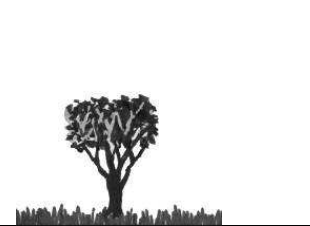
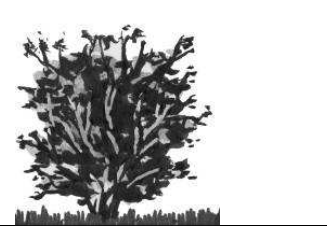


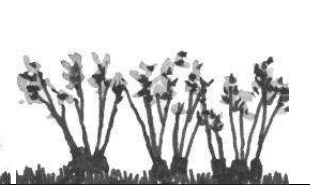
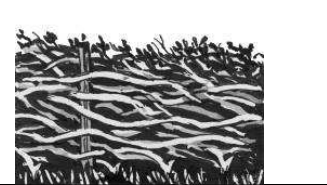
10 – NUTRIENT ENRICHMENT GROUND FLORA INDICATOR SPECIES								
Estimate % cover of each species within a 2m wide band alongside the hedgerow (to nearest 5%)								
10a – Nettles	Side A	Side B	10b - Cleavers	Side A	Side B	10c - Docks	Side A	Side B
	1%	1%		1%				1%

11 - RECENTLY INTRODUCED, NON-NATIVE SPECIES			
11a - RECENTLY INTRODUCED, NON-NATIVE GROUND FLORA SPECIES			
	Species	Side A	Side B
% cover of introduced species in the hedge-bottom (to nearest 5% or enter just the name if <5%)			
11b - RECENTLY INTRODUCED, NON-NATIVE WOODY SPECIES			
	Species	Side A	Side B

% cover of introduced species in the shrub layer (to nearest 5% or enter just the name if <5%)			

**12 - HEDGEROW SHAPE – See also Part B section 19a**

What shape is the hedgerow? - Circle diagram of cross-section that most closely resembles hedgerow.

			
a) Trimmmed & dense	b) Intensively managed	c) Untrimmed <b>Yes</b>	d) Tall & leggy
			
e) Untrimmed, with outgrowth	f) Recently coppiced (facing view)	g) Recently laid (facing view)	h) Other - Sketch

**13 - DIMENSIONS**

13a - Average Height (m) Excluding bank, to nearest 25cm	6m	13b - Average Width (m) At the widest point of canopy; excluding bank, to nearest 25cm	6m
---	----	---	----

**14 - INTEGRITY - Continuity and height of canopy along hedgerow**

14a - % GAPS - percentage gaps, to nearest 5%		40
14b - Any gaps >5m? (Y/N) Y	Y	14c - Average height of base of canopy (m) to nearest 25cm
		1m

**15 - ISOLATED HEDGEROW TREES – See also Part B section 21**

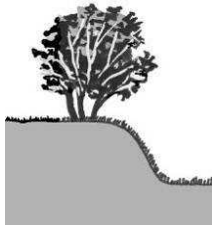
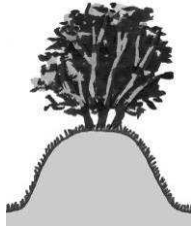
Use one row per specimen or one row and a number if there are many individuals of the same species in the same size class. Estimate DBH to nearest 5cm or nearest 1cm if DBH less than 5cm.

Species- <b>None</b>	DBH (cm)	Species	DBH (cm)
Oak	50	10m high	
Sycamore	1m	14m high	



16 – NOTES – Whole hedgerow or 30m survey section			
16a - Fauna (evidence of) None			
16b - Features (including evidence of recent planting)			
None			
16c - Photograph numbers – <b>Plates 1-11</b>			
30m SURVEY SECTION ONLY			

17 - WOODY SPECIES IN 30m SURVEY SECTION ONLY – Add any others, including non-natives.					
Species	Shrubs % cover	Trees No.	Species	Shrubs % cover	Trees No.
Alder, common ( <i>Alnus glutinosa</i> )			Plum, wild ( <i>Prunus domestica</i> )		
Apple, crab ( <i>Malus sylvestris</i> )			Poplar, black ( <i>Populus nigra betulifolia</i> )		
Ash ( <i>Fraxinus excelsior</i> )			Privet, wild ( <i>Ligustrum vulgare</i> )		
Aspen ( <i>Populus tremula</i> )			Rose, dog- ( <i>Rosa canina</i> )		
Beech ( <i>Fagus sylvatica</i> )			Rose, field- ( <i>Rosa arvensis</i> )		
Birch, downy ( <i>Betula pubescens</i> )			Rose ( <i>Rosa</i> sp.)		
Birch, silver ( <i>Betula pendula</i> )			Rowan ( <i>Sorbus aucuparia</i> )		
Blackthorn ( <i>Prunus spinosa</i> )			Spindle ( <i>Euonymus europaeus</i> )		
Broom ( <i>Cytisus scoparius</i> )			Sycamore ( <i>Acer pseudoplatanus</i> )		
Buckthorn ( <i>Rhamnus cathartica</i> )			Wayfaring-tree ( <i>Viburnum lantana</i> )		
Cherry, wild ( <i>Prunus avium</i> )			Willow, grey ( <i>Salix cinerea</i> )		
Dogwood ( <i>Cornus sanguinea</i> )			Willow, goat ( <i>Salix caprea</i> )		
Elder ( <i>Sambucus nigra</i> )	35%	6			
Elm, English ( <i>Ulmus procera</i> )					
Elm, wych ( <i>Ulmus glabra</i> )					
Elm, ( <i>Ulmus</i> sp.)					
Gorse ( <i>Ulex europaeus</i> )					
Gorse, western ( <i>Ulex gallii</i> )					
Guelder rose ( <i>Viburnum opulus</i> )					
Hawthorn ( <i>Crataegus</i> sp.)	65	8			
Hazel ( <i>Corylus avellana</i> )					
Holly ( <i>Ilex aquifolium</i> )					
Hornbeam ( <i>Carpinus betulus</i> )					
Lime, large-leaved ( <i>Tilia platyphyllos</i> )					
Lime, small-leaved ( <i>Tilia cordata</i> )					
Maple, field ( <i>Acer campestre</i> )			Bramble ( <i>Rubus fruticosus</i> agg.)		
Oak, pedunculata ( <i>Quercus robur</i> )			Honeysuckle ( <i>Lonicera periclymenum</i> )		
Oak, sessile ( <i>Quercus petraea</i> )			Ivy ( <i>Hedera helix</i> )		
Pear ( <i>Pyrus communis</i> sensu lato)			Traveller's-joy ( <i>Clematis vitalba</i> )		
Pine, Scots ( <i>Pinus sylvestris</i> )			% Gaps/access openings		

18 - ASSOCIATED FEATURES						
18a – Banks						
Typical cross section of hedgerow-banks where present (please circle one)						
						
a) Half-bank	b) Full hedge-bank-YES		c) Other (sketch)			
Bank type and management						
	Bank type		Bank Management			
	Stone	Earth	None	Fenced off	Grazed	Mown/cut
Side A	None	Y	None	None	None	None
Side B*		Y	None			
18b - Ditches/						
					Side A	Side B*
Ditch- Width at base (m) to the nearest 25cm					1m	-
18c - Walls and Fences -√None						
Fence	Side A	Side B*	Dry-stone Wall - Condition		Side A	Side B*
Height (m), to nearest 25cm			Good			
Type	Side A	Side B*	Poor			
Post & rail			Remnant			
Post & netting			Other feature - State		Side A	Side B*
Post & wire						
Other fence - state	Side A	Side B*				

19 - HEDGEROW/MARGIN MANAGEMENT									
19a - Hedgerow Management			Failed/ trimmed	Coppiced	Laid	Planting/ Gapping	Pollarding trees	None	
Signs of Recent Management <2 years								√	
Signs of Management 2-10 years								√	
Signs of older Management >10 years								√	
19b - Hedge-bottom Management			Mowing/cutting	Herbicides	Cultivation	Grazing	None		
Signs of Recent Management <2 years								√	
Signs of Management 2-10 years								√	
19c - Margin/Headland Management-None									
Average width (m)		Side A		Side B*					
Margin Management									
Grazed	Side A	Side B*	Cut	Side A	Side B*	Unmanaged	Side A	Side B*	
								√	
20 - GROUND FLORA SPECIES PER 30M									
Species			% cover		Species			% cover	
			Q1	Q2				Q1	Q2
<i>Agrostis</i> sp. Bent			25	25	<i>Plantago lanceolata</i> - Ribwort plantain				
<i>Alopecurus pratensis</i> - Meadow foxtail					<i>Plantago major</i> - Greater plantain				
<i>Anthoxanthum odoratum</i> - Sweet vernal-grass					<i>Potentilla reptans</i> - Creeping cinquefoil				
<i>Arrhenatherum elatius</i> - False oat-grass					<i>Primula vulgaris</i> - Primrose				
<i>Cynosurus cristatus</i> - Crested dog's-tail					<i>Pteridium aquilinum</i> - Bracken				
<i>Dactylis glomerata</i> - Cocksfoot					<i>Ranunculus repens</i> - Creeping buttercup				
<i>Elytrigia repens</i> - Couch					<i>Rubus fruticosus</i> - Bramble				
<i>Festuca rubra</i> - Red fescue					<i>Rumex</i> sp. - Docks				
<i>Holcus lanatus</i> - Yorkshire fog					<i>Senecio jacobaea</i> - Ragwort				
<i>Holcus mollis</i> - Creeping soft-grass					<i>Silene dioica</i> - Red Champion				
<i>Lolium perenne</i> - Perennial rye-grass					<i>Stellaria holostea</i> - Greater stitchwort				
<i>Phleum pratense</i> - Timothy					<i>Trifolium pratense</i> - Red clover				
<i>Poa annua</i> - Annual meadow-grass					<i>Trifolium repens</i> - White clover				
<i>Poa trivialis</i> - Rough meadow-grass			25	25	<i>Urtica dioica</i> - Common nettle				
					<i>Veronica chamaedrys</i> - Ivy-leaved speedwell				
					<i>Viola</i> sp. - Violet				
<i>Achillea millefolium</i> - Yarrow									
<i>Alliaria petiolata</i> - Garlic mustard									
<i>Anemone nemorosa</i> - Wood anemone									
<i>Anthriscus sylvestris</i> - Cow parsley									

<i>Arum maculatum</i> - Lords-and-ladies											
<i>Centaurea nigra</i> - Common knapweed											
<i>Cirsium arvense</i> - Creeping thistle											
<i>Cirsium vulgare</i> - Spear thistle	1										
<i>Galium aparine</i> - Cleavers											
<i>Galium mollugo</i> - Hedge bedstraw											
<i>Geranium dissectum</i> - Cut-leaved cranesbill											
<i>Geranium molle</i> - Dove's-Foot cranesbill											
<i>Geranium robertianum</i> - Herb-Robert											
<i>Glechoma hederacea</i> - Ground ivy				Bryophytes - mosses & liverworts							
<i>Hedera helix</i> - Ivy				<b>Bare ground</b>							
<i>Heracleum sphondylium</i> - Hogweed				Location of quadrats							
<i>Hyacinthoides non-scripta</i> - Bluebell				Under canopy							
<i>Mercurialis perennis</i> - Dog's mercury				Bank							
Record all ground flora species within each of the two 2 x 1m quadrats and estimate percentage cover to the nearest 5%.				Verge							
				Field edge							
<b>21 - VETERAN TREE FEATURES-None</b>											
To be recorded on any tree of 1 metre DBH and over, or any tree smaller if in the truly ancient class for that species											
Species											
Surveyor											
Grid Ref				Hedgerow reference							
				Date							
	100km	Easting				Northing					
	Letters or numbers	10km	1km	100m	10m	1m	10km	1km	100m	10m	1m
Diameter at Breast Height (1.3m) in metres (To nearest 5cm)							m				
Form	Maiden	Pollard		Coppice		Other:					
Condition											
Percentage of live canopy (To nearest 5%)						%					
						Tick					
Dead wood attached to the tree, any piece more than 1m long and 8cm in diameter											
Loose, split, missing and dead bark, any piece more than 30cm x 30cm											
Bark sap runs											
Tears, splits, scars, lightning strikes more than 30cm long											
Hollow trunks or hollow major limbs											
Major rot sites, any more than 15cm across											
Notes - e.g. photograph numbers, threats, landscape/social importance, bracket fungi, mosses, lichens, nest holes etc.											

## Field Survey Form

Local Hedgerow Field Survey Form												
PART A - ESSENTIAL ASSESSMENTS (To be completed for all local hedgerow surveys)												
TITLE OF SURVEY: Broad Lane Rochdale for Wainhomes												
Grid Ref	100km	Easting					Northing					
	Letters or numbers	10km	1km	100m	10m	1m	10km	1km	100m	10m	1m	
	SD	9	1	0	7	4	1	07	7	5	9	

Date	1	9	1	2	2	0	1	3	Hedgerow No	WH2-WEST		
Surveyor(s): J Trippier; S. Price									Side Surveyed - Both Yes			
									Side A	W		
									Side B	E		

WHOLE HEDGEROW		
1 - NAME OF LANDOWNER/CONTACT DETAILS		
Name: Wainhomes (Northwest) Ltd	Address Cedarwood 2, Kelvin Close, Birchwood, Warrington, WA3 7PB	Tel: 01925 859650
1a - Permission granted to enter details onto database YES		
1b - Permission granted to publish ownership information (if relevant) YES		

2 - SURVEY TIMES AND WEATHER/OTHER CONDITIONS THAT MAY AFFECT THE SURVEY		
2a - Start time: 11.00	2b - Finish time:	2c - Weather: fine & bright
2d - Were there any difficulties in surveying the hedgerows? If so please describe.		NO
Difficulty (i.e.): Lack of foliage due to time of year hindered identification-particularly of ground cover.		
At the time it was thought that development was imminent but in the event it was delayed for some 6 months		

3 - HEDGEROW TYPE			
3a - Shrubby hedgerow	√	3b - Line of trees	3c - Shrubby with line of trees

4 - LENGTH (m) - between nodes or intersections with other hedgerows, to nearest 5m	30m
---	-----

5 - CONNECTIONS - total number of other hedgerows connected to each end of the hedgerow	End 1 NORTH	End 2 SOUTH	Total
	2	2	4

6 - EXTENT OF SURVEY	6a - Whole hedgerow	√	6b - 30m Section(s)	
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**WHOLE HEDGEROW OR 30m SURVEY SECTION (Sections 7-16)**
**7 - ADJACENT LAND USE**

		Side A	Side B			Side A	Side B
7a - Arable	Arable crop			7e - Road/Route	Major Road		
	Uncropped margin				Minor Road		
7b - Grass	Improved	√	√		Track (unsurfaced)		
	Semi-improved				Footpath		
	Unimproved				Rail		
7c - Woodland	Young				Canal		
	Semi-mature			7f - Water	River		
	Mature				Stream		
7d - Other					Lake/pond		

**8 - ASSOCIATED FEATURES – See also Part B section 18**

	Side A	Side B		
8a - Bank - Height (in metres) to nearest 25cm	50cm	-	8f - Ditch - internal - Dry (tick)	
8b - Average herb vegetation height (cm) to nearest 5cm	10cm	10cm	8g - Ditch - internal - Wet (tick)	
8c - Fence (tick)				
8d - Ditch - external - Dry (tick)	√			
8e - Ditch - external - Wet (tick)				

**9 - UNDISTURBED GROUND (measured from the centreline of the hedgerow)**

	Side A	Side B
9a - Average width of undisturbed ground (m) to nearest 50cm*	2m+	2m+
9b - Average width of perennial herbaceous vegetation (m) to nearest 50cm*	1m+	1m+
NB * mark N/A or road etc if a road or built feature or hedge is adjacent to grassland or woodland		

**10 – NUTRIENT ENRICHMENT GROUND FLORA INDICATOR SPECIES**

Estimate % cover of each species within a 2m wide band alongside the hedgerow (to nearest 5%)

10a – Nettles	Side A	Side B	10b - Cleavers	Side A	Side B	10c - Docks	Side A	Side B
	5%							

**11 - RECENTLY INTRODUCED, NON-NATIVE SPECIES**
**11a - RECENTLY INTRODUCED, NON-NATIVE GROUND FLORA SPECIES**

	Species	Side A	Side B
% cover of introduced species in the hedge-bottom (to nearest 5% or enter just the name if <5%)			





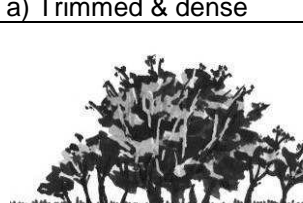


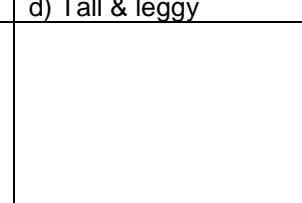
**11b - RECENTLY INTRODUCED, NON-NATIVE WOODY SPECIES**

	Species	Side A	Side B
% cover of introduced species in the shrub layer (to nearest 5% or enter just the name if <5%)			

--	--

**12 - HEDGEROW SHAPE – See also Part B section 19a**

What shape is the hedgerow? - Circle diagram of cross-section that most closely resembles hedgerow.

			
a) Trimmed & dense	b) Intensively managed	c) Untrimmed <b>Yes</b>	d) Tall & leggy
			
e) Untrimmed, with outgrowth	f) Recently coppiced (facing view)	g) Recently laid (facing view)	h) Other - Sketch

**13 - DIMENSIONS**

13a - Average Height (m) Excluding bank, to nearest 25cm	5m	13b - Average Width (m) At the widest point of canopy; excluding bank, to nearest 25cm	6m
---	----	---	----

**14 - INTEGRITY - Continuity and height of canopy along hedgerow**

14a - % GAPS - percentage gaps, to nearest 5%		25
14b - Any gaps >5m? (Y/N) Y	6m	14c - Average height of base of canopy (m) to nearest 25cm

**15 - ISOLATED HEDGEROW TREES – See also Part B section 21 None**

Use one row per specimen or one row and a number if there are many individuals of the same species in the same size class. Estimate DBH to nearest 5cm or nearest 1cm if DBH less than 5cm.

Species- <b>None</b>	DBH (cm)	Species	DBH (cm)

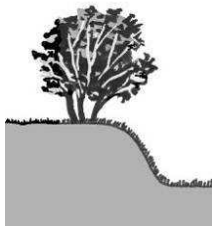
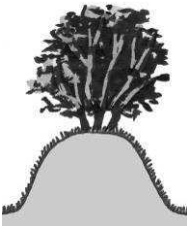
16 – NOTES – Whole hedgerow or 30m survey section
16a - Fauna (evidence of) None
16b - Features (including evidence of recent planting)
None
16c - Photograph numbers –Plates 11-18

30m SURVEY SECTION ONLY
-------------------------

17 - WOODY SPECIES IN 30m SURVEY SECTION ONLY – Add any others, including non-natives.
--

Species	Shrubs % cover	Trees No.	Species	Shrubs % cover	Trees No.
Alder, common ( <i>Alnus glutinosa</i> )			Plum, wild ( <i>Prunus domestica</i> )		
Apple, crab ( <i>Malus sylvestris</i> )			Poplar, black ( <i>Populus nigra betulifolia</i> )		
Ash ( <i>Fraxinus excelsior</i> )			Privet, wild ( <i>Ligustrum vulgare</i> )		
Aspen ( <i>Populus tremula</i> )			Rose, dog- ( <i>Rosa canina</i> )		
Beech ( <i>Fagus sylvatica</i> )			Rose, field- ( <i>Rosa arvensis</i> )		
Birch, downy ( <i>Betula pubescens</i> )			Rose ( <i>Rosa</i> sp.)		
Birch, silver ( <i>Betula pendula</i> )			Rowan ( <i>Sorbus aucuparia</i> )		
Blackthorn ( <i>Prunus spinosa</i> )			Spindle ( <i>Euonymus europaeus</i> )		
Broom ( <i>Cytisus scoparius</i> )			Sycamore ( <i>Acer pseudoplatanus</i> )		
Buckthorn ( <i>Rhamnus cathartica</i> )			Wayfaring-tree ( <i>Viburnum lantana</i> )		
Cherry, wild ( <i>Prunus avium</i> )			Willow, grey ( <i>Salix cinerea</i> )		
Dogwood ( <i>Cornus sanguinea</i> )			Willow, goat ( <i>Salix caprea</i> )		
Elder ( <i>Sambucus nigra</i> )	30	5			
Elm, English ( <i>Ulmus procera</i> )					
Elm, wych ( <i>Ulmus glabra</i> )					
Elm, ( <i>Ulmus</i> sp.)					
Gorse ( <i>Ulex europaeus</i> )					
Gorse, western ( <i>Ulex gallii</i> )					
Guelder rose ( <i>Viburnum opulus</i> )					
Hawthorn ( <i>Crataegus</i> sp.)	60	12			
Hazel ( <i>Corylus avellana</i> )					
Holly ( <i>Ilex aquifolium</i> )	10	1			
Hornbeam ( <i>Carpinus betulus</i> )					
Lime, large-leaved ( <i>Tilia platyphyllos</i> )					
Lime, small-leaved ( <i>Tilia cordata</i> )					
Maple, field ( <i>Acer campestre</i> )			Bramble ( <i>Rubus fruticosus</i> agg.)	20	
Oak, pedunculata ( <i>Quercus robur</i> )			Honeysuckle ( <i>Lonicera periclymenum</i> )		
Oak, sessile ( <i>Quercus petraea</i> )			Ivy ( <i>Hedera helix</i> )		
Pear ( <i>Pyrus communis</i> sensu lato)			Traveller's-joy ( <i>Clematis vitalba</i> )		
Pine, Scots ( <i>Pinus sylvestris</i> )			% Gaps/access openings		



18 - ASSOCIATED FEATURES						
18a – Banks						
Typical cross section of hedgerow-banks where present (please circle one)						
						
a) Half-bank	b) Full hedge-bank-YES	c) Other (sketch)				
Bank type and management						
	Bank type		Bank Management			
	Stone	Earth	None	Fenced off	Grazed	Mown/cut
Side A	None	√	None	None	None	None
Side B*						
18b - Ditches/						
					Side A	Side B*
Ditch- Width at base (m) to the nearest 25cm					1m	
18c - Walls and Fences -√None						
Fence	Side A	Side B*	Dry-stone Wall - Condition		Side A	Side B*
Height (m), to nearest 25cm			Good			
Type	Side A	Side B*	Poor			
Post & rail			Remnant			
Post & netting			Other feature - State		Side A	Side B*
Post & wire						
Other fence - state	Side A	Side B*				
* Where visible						

19 - HEDGEROW/MARGIN MANAGEMENT									
19a - Hedgerow Management			Flailed/ trimmed	Coppiced	Laid	Planting/ Gapping	Pollarding trees	None	
Signs of Recent Management <2 years								√	
Signs of Management 2-10 years								√	
Signs of older Management >10 years								√	
19b - Hedge-bottom Management			Mowing/cutting	Herbicides	Cultivation	Grazing	None		
Signs of Recent Management <2 years							√		
Signs of Management 2-10 years							√		
19c - Margin/Headland Management-None									
Average width (m)		Side A		Side B*					
Margin Management									
Grazed	Side A	Side B*	Cut	Side A	Side B*	Unmanaged	Side A	Side B*	
								√	
20 - GROUND FLORA SPECIES PER 30M									
Species			% cover		Species			% cover	
			Q1	Q2				Q1	Q2
<i>Agrostis</i> sp. Bent					<i>Plantago lanceolata</i> - Ribwort plantain				
<i>Alopecurus pratensis</i> - Meadow foxtail					<i>Plantago major</i> - Greater plantain				
<i>Anthoxanthum odoratum</i> - Sweet vernal-grass					<i>Potentilla reptans</i> - Creeping cinquefoil				
<i>Arrhenatherum elatius</i> - False oat-grass					<i>Primula vulgaris</i> - Primrose				
<i>Cynosurus cristatus</i> - Crested dog's-tail					<i>Pteridium aquilinum</i> - Bracken				
<i>Dactylis glomerata</i> - Cocksfoot					<i>Ranunculus repens</i> - Creeping buttercup				
<i>Elytrigia repens</i> - Couch					<i>Rubus fruticosus</i> - Bramble				
<i>Festuca rubra</i> - Red fescue					<i>Rumex</i> sp. - Docks				
<i>Holcus lanatus</i> - Yorkshire fog					<i>Senecio jacobaea</i> - Ragwort				
<i>Holcus mollis</i> - Creeping soft-grass					<i>Silene dioica</i> - Red Campion				
<i>Lolium perenne</i> - Perennial rye-grass					<i>Stellaria holostea</i> - Greater stitchwort				
<i>Phleum pratense</i> - Timothy					<i>Trifolium pratense</i> - Red clover				
<i>Poa annua</i> - Annual meadow-grass					<i>Trifolium repens</i> - White clover				
<i>Poa trivialis</i> - Rough meadow-grass					<i>Urtica dioica</i> - Common nettle				
					<i>Veronica chamaedrys</i> - Ivy-leaved speedwell				
					<i>Viola</i> sp. - Violet				
<i>Achillea millefolium</i> - Yarrow									
<i>Alliaria petiolata</i> - Garlic mustard									
<i>Anemone nemorosa</i> - Wood anemone									
<i>Anthriscus sylvestris</i> - Cow parsley									

<i>Arum maculatum</i> - Lords-and-ladies					
<i>Centaurea nigra</i> - Common knapweed					
<i>Cirsium arvense</i> - Creeping thistle					
<i>Cirsium vulgare</i> - Spear thistle	1				
<i>Galium aparine</i> - Cleavers					
<i>Galium mollugo</i> - Hedge bedstraw					
<i>Geranium dissectum</i> - Cut-leaved cranesbill					
<i>Geranium molle</i> - Dove's-Foot cranesbill					
<i>Geranium robertianum</i> - Herb-Robert					
<i>Glechoma hederacea</i> - Ground ivy				Bryophytes - mosses & liverworts	
<i>Hedera helix</i> - Ivy				<b>Bare ground</b>	
<i>Heracleum sphondylium</i> - Hogweed				Location of quadrats	
<i>Hyacinthoides non-scripta</i> - Bluebell				Under canopy	
<i>Mercurialis perennis</i> - Dog's mercury				Bank	
Record all ground flora species within each of the two 2 x 1m quadrats and estimate percentage cover to the nearest 5%.				Verge	
				Field edge	

## 21 - VETERAN TREE FEATURES-None

To be recorded on any tree of 1 metre DBH and over, or any tree smaller if in the truly ancient class for that species

Species															
Surveyor															
Grid Ref									Hedgerow reference						
									Date						
	100km	Easting					Northing								
	Letters or numbers	10km	1km	100m	10m	1m	10km	1km	100m	10m	1m				
Diameter at Breast Height (1.3m) in metres (To nearest 5cm)								m							
Form	Maiden	Pollard		Coppice		Other:									
Condition															
Percentage of live canopy (To nearest 5%)											%				
											Tick				
Dead wood attached to the tree, any piece more than 1m long and 8cm in diameter															
Loose, split, missing and dead bark, any piece more than 30cm x 30cm															
Bark sap runs															
Tears, splits, scars, lightning strikes more than 30cm long															
Hollow trunks or hollow major limbs															
Major rot sites, any more than 15cm across															

Notes - e.g. photograph numbers, threats, landscape/social importance, bracket fungi, mosses, lichens, nest holes etc.

**APPENDIX 4. PLATES**

Plate 1 –East hedge 1 from east



Plate 2 – Sycamore tree and north end of east hedge 1 from east



Plate 3 –Sycamore tree and north end of east hedge 1 from west



Plate 4- South end of section of east hedge 1 north of access track from east



Plate 5 - South end of section of east hedge 1 north of access track from west



Plate 6- Detail of south end of section of east hedge 1 north of access track from east



Plate 7- North end of south part of east hedge 1 south of access track from east



Plate 8- Detail of north end of south part of east hedge 1 south of access track from east



Plate 9- South part of East hedge 1 south of access track from east –oak tree at south end



Plate 10 - Original gate posts beneath oak tree at south end of east hedge 1 looking west





Plate 11 –West hedge 2 from east



Plate 12 –South end of west hedge 2 from east



Plate 13 –South end of west hedge 2 from west



Plate 14 – Deep ditch on west side of west hedge 2 looking south east



Plate 15 –Deep ditch on west side of west hedge 2 looking southeast across access gap



Plate 16 –Deep ditch on west side of west hedge 2 looking northeast across access gap



Plate 17 –Central section of west hedge 2 from east



Plate 18 –Central section and north end of west hedge 2 from east



Plate B1: Trench 1 viewed from the Southeast



Plate B2: Detail of the bank and ditch



Plate B3: Trench 1 viewed from the southwest



Plate B4: Detail of bank and ditch viewed from the southwest



Plate B5: Trench 2 viewed from the southwest



Plate B6: Shallow ditch at west side of trench



Plate B7: Detail of deep central ditch in trench 2



Plate B8: Detail of east end of trench 2





Plate B9: Open area excavation viewed from the south



Plate B10: Open area excavation viewed from the north

