ARBORICULTURAL SURVEY AND REPORT

on trees at

REAR OF FRANKLEA
HIGH STREET
BARROW UPON HUMBER
DN19 7AA

CLIENT

BIRCHWOOD DEVELOPMENTS (LINCS) LTD

CONTENTS

APPENDICES

1.0 Introduction

1.1 Purpose of the Report

This report is intended for use by my client as an assessment of trees and hedges on the site in connection with proposals to develop one detached house and garage. It shall not apply to any other use or purpose.

1.2 Terms of Reference

I am instructed to prepare the report by my client -

Birchwood Developments (Lincs) Ltd
4 Birch Gardens
Barton upon Humber
DN18 5LD

The instruction was issued in a telephone call by Mr Robert Johnson, Director, on 21 April 2008.

1.3 Documents Received

Copies of the J D Associates (Design Consultants) Ltd drawing number 052007-05 of the site were issued to assist in the preparation of this report.

1.4 Scope of the Report

The client has requested that I consider the following points when preparing the survey and report;

1 Specifically inspect and assess the trees and hedges growing beside the boundaries and within the centre of the plot.
2 Comment on their condition and suitability for retention or removal as part of the development.
3 Make appropriate management recommendations for each tree or hedge including setting out a tree protection plan and arboricultural method statement.

1.0 Introduction
continued

1.5 Limitations

The report is limited to providing a record of a visual inspection of 15 trees and 3 hedges growing within and around the margins of the site. The inspection was made from ground level. No other tests have been conducted, either by myself or by others under my direction, nor have I recovered any samples for testing by a third party.

2.0 Site Description and Status

2.1 The Site

The plot occupies a quadrilateral area in the rear garden of the property known as Franklea in the centre of Barrow upon Humber. The building at the front of the site was formerly a shop and adjoining residence which is in the process of being converted back into residential accommodation. A small garden with a double garage built of brick with a pantile roof occupies the land between the former shop and the proposed development plot. There is concrete hard-standing located immediately to the rear of the garages.

The plot itself is the main garden of the former shop premises. It comprises a large lawn behind the garage and hard-standing surrounded by shrub borders on the eastern, western and northern margins. An unkempt conifer hedge dominates the southern boundary. There are some interesting plants in the garden but, regrettably, they have been planted with rather more enthusiasm than knowledge. Consequently, there are several quality plants now being overtaken by unmanaged material of inferior value. A large, protected ash stands above the northern corner of the site but grows within the grounds of a third party property on Thorngarth Lane known as Winterbourne House.

2.2 Status of the Site

The site lies within the Barrow upon Humber Conservation Area and the ash in Winterbourne House is protected by the North Lincolnshire Council (Barrow upon Humber) Tree Preservation Order 1999. It is listed in the First Schedule of the Order as T1. As such, none of the recommended works to the trees detailed in Appendix A can commence until the Council has given formal consent.

3.0 Survey Conditions and Methods

3.1 Date and Time of Inspection

An initial site meeting and preliminary inspection took place at 10.00am on Monday 12 May 2008 with my client.

The comprehensive tree survey was subsequently carried out on the morning of Tuesday 20 May.

3.2 Persons Present

Survey

John F Robinson	- Lindsey Tree Services Ltd
Robert Johnson	- Birchwood Developments (Lincs) Ltd
Maria Johnson	- Birchwood Developments (Lincs) Ltd
Vic Fowler	- J D Associates (Design Consultants) Ltd

3.3 Weather Conditions

Weather conditions at the time of the inspection were bright but overcast with a light south-easterly breeze.

3.4 Survey Methods

The trees have been visually inspected from ground level. The following apparatus has been used to determine the tree data and other measurements quoted;

Height	- Clinometer
DBH (Diameter at breast height)	- Diameter tape measure
Crown spread	- Surveyor's tape measure

3.5 General Survey Information

The tree data includes a value for the Root Protection Area (RPA) where applicable. This figure is taken as the crown spread of a given tree, or is calculated using its DBH value in accordance with BS 5837 : 2005, whichever is the greater.

4.0 Discussion, Conclusions and General Recommendations

4.1 Under the constraints of BS 5837 : 2005 'Trees in relation to construction – Recommendations', I have marked out the Root Protection Areas (RPAs) for all the retained trees. These areas must be fenced off in accordance with the Standard in order to prohibit them being disturbed by excavation, the storage of spoil, fuels or materials (no matter how temporary) and the parking of vehicles and plant. Appendix B sets out an arboricultural method statement giving relevant procedures by which to mitigate the potentially adverse effects of the project on these trees.

4.2 The woody vegetation on the plot is arranged such that the plot can be suitable for the development of a single dwelling without entailing the loss of trees, or significant damage to most of the retainable ones. In this respect, it is helpful that they are largely located on or close to the boundaries. Primarily, there are only three trees and the northern part of cypress hedge Group 3 located in central positions which would need to be removed as part of the development. However, it is also likely that the successful retention of T13 will be compromised by the position of the garage.

4.3 The main area of concern will be the demolition of the existing garages and the hardstanding to the rear of it, along with the construction of the new access from that point into the proposed location of the new garage. This work directly affects the gean cherry T10 which is a fair tree in a crucial position for future screening. Its continued presence will make a desirable and valuable contribution in softening the appearance of a new house. The demolition of the garages can be easily carried out by hand since the bricks and pantiles of the structure are reclaimable. More care will be required when removing the concrete which abuts the base of the tree. It will need to be carefully broken by hand-held power tools and manually removed to reduce the risk of significant bark damage occurring.

4.0 Discussion, Conclusions and General Recommendations
continued

4.4 The construction of the drive and forecourt will need to be exercised with similar attention to detail. It must be completed before any of the construction works are started except for the positioning of services. These must be hand-dug past the tree, retaining intact any roots encountered above 20mm diameter. A possible alternative may be to employ directional drilling techniques ("mole" technology) to mitigate the impact of installing service conduits. However, as soon as this work is completed, a suitable no-dig, load-bearing forecourt base must be put in place to ensure that the roots of T10 are not irreparably damaged. Details of a suitable mode of construction are set out in Appendix C. Following the construction of the sub-base, the tree's RPA must be fenced off. The fencing must only be removed after the house has been completed and immediately before the final paved surface is to be laid.

4.5 The small trees which will have to be removed to allow the positioning of the house are all located in a central planting in the main lawn. They comprise the Scots pine T8, the Laburnum T9 and a mixed group of insignificant semi-dwarf conifers. The Laburnum appears healthy but is flawed by bark inclusions throughout its main branch structure. The pine is a reasonably good example but is so as to make the scheme unworkable. The group is not sufficiently large as to be visible from the street. I also consider that the retention of the ultimately large Deodar cedar T13 is unsustainable in close proximity to the garage. It is a tree of slightly impaired form and a mere 5m in height which would not be a significant loss to local amenity.

4.6 The proposed conservatory will be located within the optimum RPA of the sumach T3 based on its crown spread. However, the tree's root flare indicates an RPA of 3.27m² and it will only be disturbed on the eastern side. *Rhus typhina* is a species which generally tolerates crown reduction very well, regenerating vigorously after pruning. Pruning will be required to reduce and reshape the eastern half of the crown in order to fit the conservatory into the crown. It would therefore be more appropriate to reduce the entire canopy in order to encourage a more even crown habit thereafter. Reducing the crown will also enable the tree to withstand any root disturbance it may suffer in the process of excavating the foundations for the conservatory.

4.0 Discussion, Conclusions and General Recommendations
continued

4.7 Whilst the protected ash T5 stands beyond the eastern boundary, its sheer bulk and crown spread impact on the plot. Its structural integrity is suspect, having been weakened by a splitting main fork union at 5m. I inspected this tree for a different client in February 2001 and made recommendations to reduce and reshape the crown to alleviate much of the stress on the fork union. Since then, there has been some extremely poor tree work carried out, including the fitting of a load binder in an attempt to brace the two main halves of the crown. Neither the workmanship demonstrated nor the product used comply with British Standard 3998: 1989 'Recommendations for Tree Work". The southern quarter of the crown would overhang the edge of the building and be too low to allow development of a three-storey house if it remained un-pruned. However, corrective pruning is still required to assist the future stability of the tree and in so doing, would remove the lowest growth, reshaping it to a more vertical habit and giving sufficient space for the building and temporary scaffolding.

4.8 The sycamore T12 is not directly affected by the proposals. However, I am recommending its removal for two pertinent reasons. Of greatest significance at the present time is the proximity of the root collar to the old garden boundary wall of Winterbourne House with which it is now in contact. As the tree expands with each annual growth ring, it is gradually exerting an increasing amount of pressure on the foundations. This is an historic wall some 3m in height and is a key structural element within the Conservation Area. The tree is a self-set plant which is badly flawed by the presence of a severely included main fork union at 2m. Whilst the defect is not of critical importance at present, the tree should be removed before it causes the collapse of the wall.

4.9 In summary, I consider that the plot can be developed without undue loss or damage to vegetation being inflicted. The trees are mainly exhibiting levels of vigour typical of their age classes and most will be unaffected by the proposals. Careful management of the project should enable those more closely located to the development to tolerate the change in their environment without suffering undue damage or stress. This is, of course, providing that the recommendations of this report and BS 5837 : 2005 are adhered to. However, because of the restricted area available for the access drive, the client must appreciate that continued arboricultural supervision will be required during the initial phase of the construction.

John F Robinson NDArb
Arboricultural Consultant and Managing Director
16 June 2008

APPENDIX A

TREE SURVEY DETAILS

GLOSSARY OF TERMS AND ABBREVIATIONS USED

AGE CLASSIFICATIONS

Y	Young	Very vigorous tree aged less than 15% of the projected normal life expectancy for the recorded species/cultivar. (Cultivar is the abbreviation for cultivated variety.)
SM	Semi-mature	Tree exhibiting good or moderate vigour and aged between 15% - 30% of projected normal life expectancy.
EM	Early maturity	Tree exhibiting good or moderate vigour and aged between 30% - 50% of projected normal life expectancy.
M	Mature	Tree exhibiting moderate vigour and aged between 50% - 80% of projected normal life expectancy.
FM	Fully mature	Tree exhibiting reduced vigour or static growth signifying its full size has been attained.
OM	Overmature	Tree entering senescence and displaying associated symptoms of decreasing vigour, crown decline and decay.
V	Veteran	Ancient tree with large, hollow trunk and greatly reduced crown exhibiting static or declining growth.

TREE CONDITION

Description	Physiological	Structural
Good	Tree exhibiting robust vitality with vigorous growth and healthy foliage. No discernible pathogenic (especially fungal) activity. Long projected life expectancy exceeding 25 years.	Tree in sound state with no discernible weaknesses or pathogenic activity. No alteration in adjacent ground conditions.
Good/Fair		
Fair	Tree of moderate or low vigour and reasonable health. No discernible pathogenic activity. Projected life expectancy of 10 – 25 years.	Tree in generally sound state with occasional minor rectifiable defect or storm damage. No discernible pathogenic activity or alteration in adjacent ground conditions.
Fair/Poor		
Poor	Tree of declining vitality with abnormally small or discoloured foliage. Fungal pathogens may/may not be present. Projected life expectancy of less than 10 years.	Tree exhibiting significant structural defects, storm damage and/or fungal pathogens. Ground conditions may have been significantly altered so as to impair or weaken root structure.
Dead or Dying	Tree crown has minimal or no foliage present in summer. Bark may be loosened or removed by desiccation or foraging/nesting actions of birds or animals. Fungal pathogens may/may not be present.	Absence of fine twig structures in outer canopy. Dead branchwood throughout crown. Larger limbs may/may not be failing. Ground surface may/may not be cracking as roots degrade or tree becomes progressively less stable. Fallen dead wood littering ground below.

GLOSSARY OF TERMS AND ABBREVIATIONS USED
continued

DBH	Diameter at Breast Height measured at 1.5m above ground level (on the uphill side of trunk where the land is sloping).
RF	Root Flare measured around base of trunk where tree is multiple-stemmed or forked below 1.5m.
N, SW, E etc.	Compass points
N/A	Not Applicable - applying to trees where data is not required or tree is to be removed as part of the project.
±	Estimated value – eg where dense ivy prevents the accurate measurement of DBH or the crown overhangs a boundary beyond which access is prevented.

APPENDIX B

ARBORICULTURAL METHOD STATEMENT FOR TREE PROTECTION AND MANAGEMENT

Site – Rear of Franklea, High Street, Barrow upon Humber

1 Scope of Works

The proposal for the site is the creation of a new detached three-storey house and detached double garage within the existing rear garden. Timing of the works is yet to be decided.

2 Potential Risk to Trees

There will be 5 retained trees in varying stages of maturity, all growing in locations where they may be at risk of being affected by the site operations, along with 2 groups affording hedging or screening value. If damage occurs within the Root Protection Areas, the overall health and condition of the trees may be impaired in the future.

3 Control Measures / Sequence of Operations

3.1 The key points of this method statement must be incorporated into the CDM programme for the project. The actions detailed below must then be carried out at the appropriate times.

3.2 Conduct a pre-development meeting with all interested parties present including the developer, site agent, architect, planning officer, tree officer and arboricultural consultant. The discussions must agree the extent and timing of the tree works and the positions of the protective fencing.

3.3 Where required, competent arboricultural contractors must be appointed and the tree works must be completed to the satisfaction of the arboriculturalist / tree officer before any other site works begin, unless special considerations apply (see 4.0).

3.4 The building contractor must review the method statement at this point. Set out the protective fencing to seal off the Root Protection Area (RPA) in accordance with BS 5837:2005 “Trees in relation to construction - Recommendations” and as agreed on the site with the arboricultural consultant and the tree officer. The fencing must be sufficiently robust and permanent to withstand the duration of the construction phase. It shall bear No Entry notices and remain in position throughout (as specified in the Standard).

APPENDIX B
ARBORICULTURAL METHOD STATEMENT FOR TREE PROTECTION

3 Control Measures / Sequence of Operations
continued

3.5 Begin site works on the demolition and / or construction phase.

3.6 The removal of fencing and subsequent storage (no matter how temporary) of spoil, materials, fuel, chemicals or plant and vehicles within the RPA is *strictly prohibited*. The burning of waste materials, mixing of mortar and the cleaning of cement mixers and containers is also *strictly prohibited* within the RPA.

3.7 The site manager / building contractor must review the method statement as the project nears completion. The protective fencing is only to be removed once all the construction works are finished. In certain cases, pathways may pass over the RPA. These works must be left until the main construction is complete and be formed using approved, no-dig techniques. Remedial tree works may be necessary and should be completed at this stage.

3.8 Landscape finishes should take account of the trees and deep cultivation in the root zones previously protected is prohibited. Surface cultivation by light, hand-operated machinery may be permitted. Ground cover planting and mulch surfacing are more appropriate than grass seeding which is usually unsuccessful beneath the shade of tree crowns.

4 Special Considerations

4.1 Foundation design must take the potential impact of the adjacent trees on a shrinkable clay soil into consideration and the advice of a structural engineer should be sought.

4.2 The careful demolition of the existing garages and hardstanding must be followed immediately by the construction of a suitable, load-bearing, no-dig driveway before the remaining construction is started (see Appendix C). Service conduits may have to be laid before the sub-base is completed and will involve either hand digging or directional drilling techniques past the RPA of the retained trees, in particular T10. Protective fencing must be erected around tree following the construction of the sub-base.

4.3 There is likely to be insufficient parking available within the plot. On-street parking is possible although inconsiderate positioning of vehicles may lead to tension with local residents.

APPENDIX B
ARBORICULTURAL METHOD STATEMENT FOR TREE PROTECTION

4 Special Considerations
continued

4.4 Waste arisings for removal offsite must be loaded into skips or lorries parked outside the RPAs.

4.5 All cement mixing and cleaning operations will take place in an agreed location and not on areas where the caustic effects of contaminated run-off will be detrimental to tree root function.

4.6 The project will be subject to routine arboricultural inspections given the proximity of certain trees to the project operations. The frequency of these inspections will be agreed at the outset of the project unless unexpected difficulties arise, in which case urgent interim assessment may be necessary.

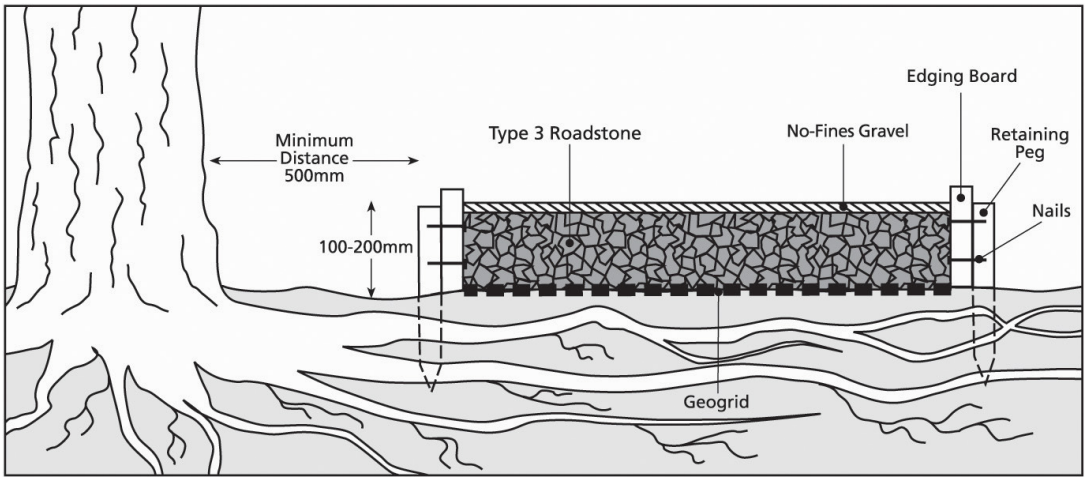
5 Temporary Amendments
None at present.

6 Circulation List
Copies of this document are retained by or issued to the following;

Company/Organisation	Person/Officer
Lindsey Tree Services Ltd	John F Robinson
Birchwood Developments (Lincs) Ltd	Bob Johnson
J D Associates (Design Consultants) Ltd	Vic Fowler
North Lincolnshire Council	Various
Building Contractor's site agent	To be named

APPENDIX C

RECOMMENDED DESIGN AND IMPLEMENTATION FOR DRIVEWAYS OR TEMPORARY ROADS WITHIN TREE ROOT PROTECTION AREAS



PTO for construction method statement

APPENDIX C continued

METHOD

1 Ideally, construction should take place between May and October when ground conditions are at their driest and are least prone to compaction. It will also be helpful if the works can be timed to coincide with a period of dry weather.

2 Spray ground vegetation with a translocated herbicide such as Glyphosate. Rake off the treated organic material once it has been killed. Decomposing organic matter may lead to anaerobic conditions occurring beneath the construction if retained. The lack of oxygen will then have a detrimental effect on tree root growth and health.

3 Remove major protrusions such as rocks or tree stumps. Stumps must be mechanically chipped out with a stump grinder rather than excavated to minimise root damage. Any remaining voids or hollows must be backfilled with sharp sand.

4 Lay a geogrid (eg Tensar SS30) or an appropriate geotextile (eg Terram) directly onto the soil over the whole of the drive/roadway/parking area with a cellular confinement system laid above. (Systems such as CellWeb or Geocell use a hexagonal cell pattern to contain and confine the roadstone, negating the use of edging boards unless a permanent neat margin is required.)

5 If necessary, fix gravel boards inside the grid margin, pegged or pinned in place to retain the aggregate base. The fixings must be long enough to support the construction.

6 Infill the confinement system with a minimum 150mm (200mm for construction traffic) depth of no-fines aggregate such as Type 3 roadstone or washed sharp gravel. The stone must not be tipped straight onto the grid but placed at one end and carefully infilled along the road, being graded as the machine moves along it. It must not be tipped or applied from the ground to the sides of the grid.

7 Compact the sub-base by roller or vibro-plate to ensure it binds with the grid and minimises the potential for ruts to form in the future.

8 Apply the final surface (if construction is permanent). This can be no-fines gravel, tarmac or block paviors. Paviors are acceptable provided they are they are not grouted or sealed, thus preventing the exchange of gases (oxygen and carbon dioxide) from the roots and soil beneath, and the infiltration of rainwater.

- Adapted from Arboricultural Practice Note 1 published by the Arboricultural Advisory and Information Service, Alice Holt Lodge, Wrecclesham, Farnham, Surrey GU10 4LH from whom further information can be obtained.

John Fraser Robinson

Professional Qualifications and Experience

Qualifications

National Diploma in Arboriculture (BTEC)
Professional Tree Inspection Award (LANTRA)

Experience

John Robinson has been involved in working with trees on a full time basis since 1976. His career started as a trainee with the Forestry department of the Earl of Yarborough's Estate, Brocklesby Park, Lincolnshire from 1976 - 1978.

1978 - 1981 Merrist Wood College, Worplesdon, Guildford
Whilst on industrial placement during the second year of the 3 year course, he gained further experience as an arboricultural trainee with Sheffield City Recreation Department. Individual placements within the department yielded specific experience in tree surgery operations, tree inspections and surveys, plant material handling, nursery practices and landscape design and implementation.

In September 1981, he established Lindsey Tree Services as a partnership with Thomas James Robinson. The firm became incorporated in October 2001 and is based in Grimsby, serving the northern parts of Lincolnshire and surrounding districts as arboricultural contractors and consultants. In addition to both directors, the firm employs 6 staff.

The daily organisation of the business yields routine experience in hazard tree evaluation, decay detection assessments and in compiling arboricultural method statements and risk assessments.

He acts as a consultant preparing reports for various departments within several local authorities on a wide range of tree issues, as well as a number of utilities, health authorities and conservation organisations. Further wide experience has been gained in reporting for landowners, developers, consulting engineers, architects, insurance companies, loss adjusters and solicitors. He has been called as an expert witness on several occasions, giving evidence both in court and to planning appeals and inquiries on matters involving trees.

Professional Association

He has been an Associate member of the Arboricultural Association since 1981 and subscribes to its programme of Continuing Professional Development. He has served on the Association's Northern Branch Committee since March 2001.