



**WATSON
LINDSEY**
ARBORICULTURE

2 Church View, Main Street
Searby
Barnetby
DN38 6BG

Phone: 07779071638

Email: [REDACTED]

**Arboricultural
Report and
Impact Assessment
to BS 5837:2012**

Site Address:

Land at Ferry Road East,
Barrow upon Humber

Issue Date:

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Report No:

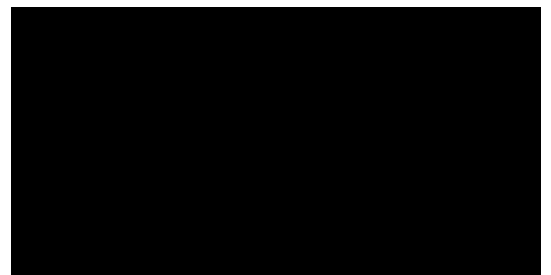
210329

Prepared For:

Keigar Homes Ltd
Keigar Lodge, Canberra View
Barton Upon Humber
DN18 5GR

Prepared By:

Daniel Kendall, TechArborA



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1. Introduction

1.1. Purpose of the Report

- 1.1.1. This report is required to provide detailed, independent, arboricultural advice on the trees present in the context of potential development.
- 1.1.2. The purpose of this report is to outline the condition of the existing vegetation on site and to define areas where development and existing trees have the potential to conflict. In addition, recommendations will be made based on the current context of the site.

1.2. Terms of Reference

- 1.2.1. We have been instructed to conduct a tree survey and prepare an arboricultural report for the site. The arboricultural report is to include an impact assessment based on the design proposal provided. The arboricultural survey and report conforms to the most recent specifications outlined in BS 5837: 2012 Trees in relation to design, demolition and construction - Recommendations.
- 1.2.2. We have been supplied with a drawing (FE145/205) which details the proposed development. This provides the basis for which this Arboricultural Impact Assessment has been prepared. The tree data has been overlaid onto the proposed designs to create the Tree Protection Plan, which can be found at in the appendices.

1.3. Scope of the Report

- 1.3.1. This report is compiled in accordance with BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations' and is based on an objective assessment of the existing vegetation.
- 1.3.2. Preliminary recommendations are given with a view to the long-term management of a sustainable tree cover and to uphold the interests of health and safety.
- 1.3.3. All trees within the survey area with a stem diameter above approximately 75mm are included.
- 1.3.4. Where applicable trees outside the site boundary, but close enough to be affected by the proposed development, are included.

1.4. Survey Details

- 1.4.1. The survey took place on the 29th March 2021. The weather was fine and dry with light winds.
- 1.4.2. During this survey, all trees were inspected from ground level. Further investigation, such as climbed inspections or decay detection surveys, have not been undertaken but may be recommended where this is considered appropriate.
- 1.4.3. Measurements were obtained using clinometers, specialist tapes or electronic distometers. Where this was not possible, measurements were estimated to the best ability of the surveyor. We endeavour to provide accurate information and will always take measurements unless inhibited by restricted access or other mitigating circumstances.

2. Site Description

2.1. Land Use

2.1.1. The site identified for survey is an area of agricultural land lying to the north of Ferry Road East (B1402). The site is flanked by residential premises to the east and an ongoing residential development to the south with further agricultural land beyond the northern and western boundaries.

2.2. Topography and Geology

2.2.1. Generally speaking, the site is level. At the time of survey, the site appeared to be well drained, however it may be prone water-logging during wetter times of the year.

2.2.2. A desktop investigation was made into site geology using the British Geological Survey iGeology application. The local geology was defined as superficially till over chalk bedrock.

2.2.3. Till deposits may contain significant clay content as such independent expert advice should be sought to better define site geology. Where significant clay content exists, due consideration must be given in relation to foundation design in close proximity to trees. Failure to do so may lead to subsidence and heave related issues.

2.3. Treescape & Visual Amenity

2.3.1. The neighbouring residential areas are interspersed with a reasonable number of mature and semi-mature trees. The agricultural land to the north and south of the site is almost totally devoid of trees.

2.3.2. Some of the trees subject to survey form a very modest green feature when viewed from Ferry Road East. The trees surveyed make-up a minor part of the local treescape.

2.3.3. Group G2 contains specimens of a reasonable size and quality. The group stands between the site and the neighbouring residential area, but is visible only at a distance from areas of public access. These trees have a low visual amenity value. The remaining tree on site convey no visual amenity value.

2.4. Rooting Conditions

2.4.1. In areas likely to be affected by tree rooting the site is free from subterranean structures and significant changes in ground level. As such the Root Protection Areas of all trees surveyed is assumed to be symmetrical and centred on the trees' stems.

3. Status of the Trees

3.1. A status check was made on 30th March 2021 with North Lincolnshire District Council via their online planning portal. We are informed that there are no Tree Preservation Orders (TPO) in force and that the site is not within a Conservation Area.

3.2. Due to the large potential penalties for illegally carrying out work to protected trees, we recommend that a further check is carried out prior to any works being undertaken. This is especially relevant as the Council is able to serve a TPO at any time.

3.3. Hedge H2 is offered protection under the Hedgerows Regulations 1997. The regulations prevent the partial or whole removal of qualifying hedges without prior permission from the local authority.

4. Discussion

4.1. Tree Condition & Recommended Works

- 4.1.1. During the survey the details of four individual trees were recorded. One tree was identified as retention category B, the remaining trees as retention category C.
- 4.1.2. During the survey the details of three groups of trees were recorded. One group was identified as retention category B and two as retention category C.
- 4.1.3. During the survey the details of two hedges were recorded. One hedge was identified as retention category B and one as retention category C.
- 4.1.4. Within the survey, tree works may have been identified for reasons of public safety, to ensure the long-term health of the trees or for general maintenance purposes. Such recommendations have been made without regard to any projected layout and should be undertaken irrespective of development. These are summarised in the following sections.
- 4.1.5. For the full details of all vegetation surveyed and recommendations made, please refer to Appendix 1.

4.2. Removals Irrespective of Development

- 4.2.1. On this occasion, no trees have been identified as category 'U' and as such no trees are recommended for removal in the current context of the site.

4.3. Remedial Tree Works Irrespective of Development

- 4.3.1. On this occasion, no remedial works were deemed necessary at this time.

4.4. Monitoring/Further Investigations Irrespective of Development

- 4.4.1. In this case, no monitoring (re-inspecting and re-assessing) or further investigation works are considered necessary. However, all trees to be retained within the proposed development should be inspected on a regular basis in the interests of risk management.

5. Arboricultural Impact Assessment (AIA)

5.1. Proposed Development

- 5.1.1. The proposal for the site includes the construction of 18 detached dwellings with associated accessways and a number of detached garages.
- 5.1.2. This Arboricultural Impact Assessment is based on drawing no. FE145/205, which forms the basis for the Tree Protection Plan that accompanies this report.

5.2. Tree Removals for Development

- 5.2.1. To make way for new boundary infrastructure G1 and T2 will be removed. The trees have no visual amenity value and their loss will be compensated for by new planting elsewhere on site.

5.2.2.To make way for a proposed footpath the north western half of G3 will be removed. The trees have no visual amenity value and their loss will be compensated for by new planting elsewhere on site.

5.3. Remedial Tree Works and Pruning for Development

5.3.1.To improve tree form and aesthetics T4 will be pruned as detailed in Appendix 1. The works are minor in nature and will have no lasting ill effects.

5.4. Monitoring/Further Investigations to Accommodate Proposed Development

5.4.1.No monitoring or further investigations are required to facilitate the development.

5.5. The Protective Barrier

5.5.1.In order to ensure the effective protection of retained trees during development, a protective barrier will be installed, in accordance with BS5837: 2012 and may comprise of protective fencing and/or ground protection. This will be the first job on site following the tree removal and pruning works. The fencing and ground protection should be positioned to protect the entire crown and Root Protection Area (RPA) of the retained trees.

5.5.2.Routes for pedestrian and site traffic should ideally be located outside, and diverted away from, the RPAs of the retained trees. Where this is not possible, temporary protective surfaces (ground protection) must be laid over the exposed RPAs which will distribute the weight of site vehicles, machinery or pedestrians whilst allowing moisture to reach the tree rooting area beneath. Such surfaces should be constructed in accordance with BS5837: 2012.

5.5.3.The position of protective fencing is detailed on the Tree Protection Plan. The specifications for the construction of a protective barrier can be found in the appendices.

5.6. Access/Construction of Hard Surfacing

5.6.1.New hard surfacing in the form of a footpath is proposed within the RPA of G2. Given the very modest size of the incursion, and the health, vigour and age of the trees concerned, these works are unlikely to result in any ill effects.

5.7. Demolition

5.7.1.In this instance no demolition is required within the RPA of retained trees.

5.8. Construction/ Foundation Design

5.8.1.In this instance no new foundations fall within the RPA of retained trees.

5.9. Utilities

5.9.1.The routing of utilities is not available at present however there is no foreseeable reason why they should not be diverted away from the RPA of retained trees.

5.10. Landscaping

5.10.1. Any proposed fence lines may be constructed within the RPA if necessary, providing that appropriate considerations are made to the protection of the tree. This is providing that no continual trenching is

undertaken (e.g. for small walls onto which panel fencing is installed). Excavation must be kept to a minimum and therefore only fence designs requiring intermittent posts will be acceptable within the RPA of retained trees.

5.10.2. Any patios, garden paths or other hard surfaces within RPAs which may not be shown on the plans provided may be constructed using no-dig techniques, providing that they do not cover more than 20% of the RPA of any tree and are implemented in accordance with BS5837: 2012. If there is any concern of damaging retained trees, further advice should be sought from a qualified Arboriculturalist.

5.10.3. No ground level changes are to be undertaken within the RPA of retained trees, unless otherwise stated or agreed with the appointed Arboricultural consultant or the LPA. The requirement to raise/lower ground levels within RPAs should be communicated to these parties at the earliest practical convenience.

5.11. Shading

5.11.1. In this instance there are no significant detrimental shading effects on the proposed habitation areas.

6. Arboricultural Method Statement – Operations for Inclusion

6.1.1. No operations are required within the RPA or crown spread of retained trees as such an Arboricultural Method Statement (AMS) is not required.

Appendix 1: Survey Schedule

Tree ID	Common Name	Maturity	Height (m)	Stem Diameter (mm)					RPA Radius (m)	Crown Spread (m)				Structural Condition	Retention Category	Life Expectancy	Physiological Condition	Comment	Recommendations
				1	2	3	4	5		N	E	S	W						
T1	Downy Birch	Semi-mature	10.5#	140					1.7	3.5	3	1	3	Good	C2	>40 yrs	Good	Standing 2.25m over current E site boundary. Significantly suppressed to S by neighbouring tree. An unremarkable specimen.	
T2	Common Hawthorn	Semi-mature	2.5	75 ⁷					2.4	1	1	0.5	1	Poor	C1	>40 yrs	Good	Multi stemmed with a congested and heavily pruned crown. A poor specimen.	Development Recommendation: Remove
T3	Common Hawthorn	Semi-mature	4	85 ⁶					2.5	1.5	1.5	1.5	1.5	Fair	C1	>40 yrs	Good	Multi stemmed with a congested crown.	
T4	Common Ash	Semi-mature	9.5	220	290	240			5.2	4.5	4.5	4	4	Good	B1	20 to 40 yrs	Good	Multi stemmed from 0.5m with an adequate main union. Poorly pruned leaving stubs in lower crown to SE. Minor stem to NW with partially failed union at 2m. Otherwise a reasonable specimen with a well-balanced crown.	Development Recommendation: To improve aesthetics remove stubs to SE and minor stem to NW with partly failed union.
G1	A Group			140 ^a					1.7	1.5	1.5	1.5	1.5		C2	10 to 20 yrs		Group of elder with one young ash. Ash tree directly beneath power lines not suitable for long-term retention.	Development Recommendation: Remove

Tree ID	Common Name	Maturity	Height (m)	Stem Diameter (mm)					RPA Radius (m)	Crown Spread (m)				Structural Condition	Retention Category	Life Expectancy	Physiological Condition	Comment	Recommendations
				1	2	3	4	5		N	E	S	W						
G2	A Group	Semi-mature	16#	600# ^a					7.2	6.5	6.5	6.5	6.5	Good	B2	>40 yrs	Good	Standing 3m E of current site boundary. Group of 6-8 sycamore and one horse chestnut. Reasonable single stemmed specimens to N and S with multi-stemmed or slender specimens between. Crown height over site of 4m.	
G3	A Group	Young	3.5	150 ^a					1.8	2	2	2	2		C2			Trees currently standing over E boundary. Group of predominantly young ornamentals. Species include cedar, horse chestnut, cypress and blackthorn.	Development Recommendation: Remove north western half of group.
H1	A Hedgerow		4	80					1.0	1.5	1.5	1.5	1.5		C2	>40 yrs		Unmanaged hedge containing elder, young elm, black thorn and hawthorn.	
H2	A Hedgerow		2.75							1.5	1.5	1.5	1.5		B2	>40 yrs		Well established hedge, recently topped and sided. Provides good screening. Predominantly hawthorn with very infrequent ash and elder.	Development Recommendation: Reduce height to 1.5m and crown spread to E to 0.5m. Remove ash/elder and gap plant with hawthorn.

^a denotes average diameter of most significant stems (groups of trees)

⁶ denotes an average stem diameter and the number of stems (individual trees)

denotes estimated measurement

Appendix 2: Retention Categories

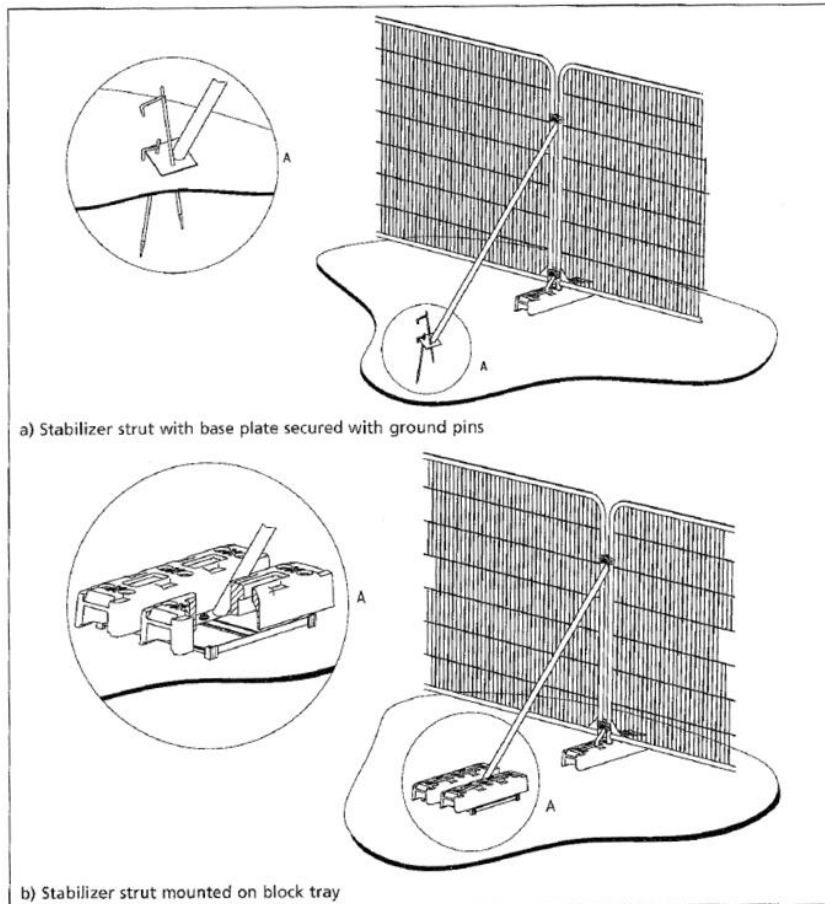
Trees Unsuitable for Retention	
<p>Category U</p> <p>Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.</p>	<ul style="list-style-type: none"> • Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning). • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality. <p><i>NOTE Category U trees can have existing or potential conservation value, which it might be desirable to preserve; see [BS5837: 2012] 4.5.7</i></p>

Tree to be Considered for retention	1 For Arboricultural Reasons	2 For Landscaping Qualities	3 For Cultural Values, Including Conservation
<p>Category A</p> <p>Trees of high quality with an estimated remaining life expectancy of at least 40 years.</p>	<p>Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue).</p>	<p>Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.</p>	<p>Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).</p>

Tree to be Considered for retention	1 For Arboricultural Reasons	2 For Landscaping Qualities	3 For Cultural Values, Including Conservation
<p>Category B</p> <p>Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.</p>	<p>Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation.</p>	<p>Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.</p>	<p>Trees with material conservation or other cultural value.</p>
<p>Category C</p> <p>Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm.</p>	<p>Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.</p>	<p>Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits.</p>	<p>Trees with no material conservation or other cultural value.</p>

Appendix 3: Tree Protection Fencing

Figure 1. Specification for Above Ground Stabilised Protective Fencing



The protective fencing will be installed in accordance with BS 5837: 2012 and will comprise of weld mesh panel fencing, situated in rubber or concrete feet. Panels will be joined together using a minimum of two anti-tamper couplers, positioned so that they can only be removed from inside the barrier. The fencing will be supported at each joint (where two panels meet) with a stabiliser strut, attached to the fencing at one end and a base plate at the other, which will be secured with ground pins, driven into the underlying soil.

Figure 2. Example Signage for Protective Fencing

TREE PROTECTION AREA

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND ARE SUBJECTS OF A
TREE PRESERVATION ORDER
(TOWN & COUNTRY PLANNING ACT 1990)

CONTRAVENTION OF TREE PRESERVATION ORDERS MAY LEAD TO CRIMINAL PROSECUTION

THE FOLLOWING MUST BE OBSERVED BY ALL PERSONS:-

- THE PROTECTIVE FENCING MUST NOT BE REMOVED
- NO PERSON SHALL ENTER THE PROTECTED AREA
- NO MACHINE OR PLANT SHALL ENTER THE PROTECTED AREA
- NO MATERIALS SHALL BE STORED IN THE PROTECTED AREA
- NO SPOIL SHALL BE DEPOSITED IN THE PROTECTED AREA
- NO EXCAVATION SHALL OCCUR IN THE PROTECTED AREA

**ANY INCURSION INTO THE PROTECTED AREA MUST BE
WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY**

KEEP OUT!

Appendix 4: Guidelines & Limitations

All work must be to BS 3998: 2010 - 'Recommendations for tree work'.

Staff carrying out the work must be qualified, experienced contractors, and should be covered by adequate public liability insurance.

This report is based upon a visual inspection. The consultant shall not be responsible for events which happen after this time due to factors which were not apparent at the time, and the acceptance of this report constitutes an agreement with the guidelines and the terms listed in this report.

Any defects seen by a contractor or the employer that were not apparent to the consultant must be brought to the consultant's attention immediately.

No liability can be accepted by the consultant in respect of the trees unless the recommendations of this report are carried out as outlined and within the stated timescales.

It is advisable to have trees inspected by an arboricultural consultant regularly. In this instance it is recommended that these inspections are made as per the recommended re-inspection timings in this report. Furthermore it is recommended that trees be re-inspected following certain events. These include; severe weather events, significant changes to site usage, changes that affect wind loading on the trees (e.g. Removal of neighbouring trees, erection/demolition of buildings).

Appendix 5: Tree Protection Plan

See A0 PDF (Tree Protection Plan - 210329 FerryRoadEastBarrow.pdf) for Details