

Belfarm Avenue, York

Arboricultural Survey

August 2023

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1 Introduction

- 1.1.1.1 This report presents the results of an Arboricultural Survey undertaken on the site of Bellfarm Avenue, Middleham Avenue, and Huntington Road. The site area is approximately 0.4 ha and is centred on Grid Reference YO31 9AZ.
- 1.1.1.2 The Arboricultural Survey has been undertaken to provide supporting information for proposed development of the site.
- 1.1.1.3 The Arboricultural Survey included a Tree Constraints Survey which was conducted on 9th August 2023 by Daniel Brown (FdSc, TechArborA) under supervision and approval of Andrew Westgarth (CEnv BS 5837:2012)

Figure 1. Site location and approximate site boundary (Aerial imagery dated 2022)



2 Methodology

- 2.1.1.1 This Arboricultural survey covers those trees or groups of trees which are considered relevant for the brief. During the survey all relevant individual trees and groups of trees located within and close to the boundary of the site were assessed.
- 2.1.1.2 The objective of the survey was to collect tree data relevant to the proposed works at the site and to categorise individual trees or tree groups in accordance with BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'¹ based on their condition, quality and future potential.
- 2.1.1.3 The purpose of the categories within BS 5837:2012 is not to determine whether retention of trees is desirable, 'The purpose of the tree categorization method, which should be applied by the arboriculturist, is to identify the quality and value (in a non-fiscal sense) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained in the event of the development occurring.' (BS 5837:2012, Section 4.5.2). This survey should therefore be regarded as an initial appraisal with observations recorded for trees within and adjacent to the site. Remedial tree works, foundation design and material specification are not covered within this report.
- 2.1.1.4 The location of the trees is shown within the attached Tree Constraints Plan (TCP) (Appendix 3). A detailed inspection of the trees with respect to decay, defects and hazard is not included. The tree locations are as shown on the topographical drawing supplied.
- 2.1.1.5 The site survey was conducted on 9th August 2023 by Daniel Brown (FdSC) in accordance with the BS 5837:2012 methodology¹. This was under supervision of and then approved by Andrew Westgarth (CEnv BS 5837:2012).
- 2.1.1.6 Information collected during the survey included species, height, stem diameter, branch spread, height of crown clearance, age class, physiological condition, structural condition, estimated remaining contribution and category grade. The survey was made at ground level using visual assessment of the tree canopy and stem. No removal of vegetation, digging or drilling was undertaken during the survey and parts of the stems of some trees remained partly obscured by vegetation.
- 2.1.1.7 The TCP in Appendix 3 shows the positions, canopy spreads and Root Protection Areas RPA of the trees included within the survey. The RPA's have been calculated in accordance with Section 4.6 of BS 5837:2012. Where significant ground constraints, such as roads, walls, buildings, water bodies are likely to restrict and influence root development, the RPA circles have been adjusted to form a polygon of equivalent area, in order to show the likely rooting area for trees subjected to significant constraints, in accordance with paragraph 4.6.2 of BS5837:2012.
- 2.1.1.8 When considering the layout of the site and the retention of trees, proposals should generally be kept outside of both the RPA and the canopy spreads. However, it may be possible to encroach into these with access roads, footpaths and parking areas assuming the existing ground levels can be maintained, and the appropriate construction methods are used. No liability can be accepted by Quants Environmental in respect of the trees or for events which happen after the time of the survey.

¹ British Standards Institution (BSI) BS 5837:2012. Trees in relation to design, demolition and construction – Recommendations. Published by BSI Standards Limited 2012. ISBN 978 0 58069917 7.

3 Results

- 3.1.1.1 The survey results are shown in Appendix 2 (Tree Survey Results – Table 1) and Appendix 3 (Tree Constraints Plan). The trees included within this survey comprise of 21 individual trees, 1 group of trees and 4 hedgerows.
- 1 group of trees were classified as Category B;
 - 16 trees were classified as Category C;
 - 4 hedgerows were classified as Category C; and
 - 5 individual trees were classified as category U.
- 3.1.1.2 The species on site consisted of Norway maple *Acer platanoides*, Birch *Betula* spp., Cherry *Prunus* spp., Whitebeam *Sorbus* spp., Ash *Fraxinus excelsior*, Copper beech *Fagus sylvatica* 'purpurea'. The hedge species consist of Box *Buxus sempervirens* and Leylandii *Cupressus x leylandii*.
- 3.1.1.3 The site consists of several properties which are located along Bell farm Avenue, Middleham Avenue, and Huntington Road, with most houses located on Bell farm Avenue. The site is approximately 2 miles North away from the city centre. The area is surrounded by residential properties on all sides, with the River Foss Northwest of the site approximately 200 m away.
- 3.1.1.4 A TPO check for the site was carried out via the York council website, and no trees were found to have TPOs or be situated in conservation areas.
- 3.1.1.5 Most trees are in the front gardens of the properties, with only a small number of trees situated in back gardens. Most of the trees within the site area were found to have special qualities or provide a significant Arboricultural or landscape value to the area.
- 3.1.1.6 G1 consists of two silver birch which are in one of the back gardens to the property. They are in a healthy condition, with balanced crowns, and are visible from the roadside. With the visual quality they provide to the area, and with no other trees of a similar size, they have been classified as Category B.
- 3.1.1.7 T2 and T11 are trees located in front gardens which face out towards the road. Both trees have Ganoderma fungal brackets, and a decline in crown vitality. As these trees are near public access, the risk of failure and likelihood of impact is moderate, and so both trees have been classed as Category U trees.
- 3.1.1.8 T3 is a young cherry which is growing next to a boundary wall at the front of a property. Due to the proximity of the wall, it is likely that this will cause damage to the wall in the future with the further spreading of roots underneath. Therefore, this tree has been classed as unretainable, and classified as Category U.
- 3.1.1.9 T10 is a moderately sized silver birch which is in one of the back gardens of a property. The trees crown is balanced, with canopy hanging over the ginnel which runs East along the property fence line. The tree has lost all crown vitality, with branches have starting to dieback from the outer canopy. The tree appears to be in a severe state of decline or has recently died. As the tree is in such a poor condition, and being in a location where failure could impact significant targets, it has been classified as Category U.

4 Conclusions and Recommendations

- 4.1.1.1 During the survey 21 individual trees, 1 group of trees and 4 hedgerows were surveyed.
- 4.1.1.2 Most trees are in the front gardens, along boundary walls which run alongside the public footpaths and roads. Some of the trees within these areas have large stems, and with the road providing a site constraint, it is likely that the roots will favour root growth towards the unmade ground of the garden areas of the properties.
- 4.1.1.3 G1, T13 and T14 are likely to be main constraints in relation to development to the rear of the properties, with most ground incurring into RPAs being unmade ground with little to no restriction to root growth.
- 4.1.1.4 It is recommended that all category B trees are retained where possible.
- 4.1.1.5 Where possible Category C trees should be retained to allow retention of existing canopy within the site, however, where removal is required, suitable replacement planting with trees of improved form will likely increase the longevity of the canopy of these trees.
- 4.1.1.6 It is recommended that all Category U trees are to be removed due to their lack of retainability, and their proximity to targets.
- 4.1.1.7 All tree works are to be conducted by a qualified arborist and are to be in accordance with BS 3998:2010.
- 4.1.1.8 All retained trees will require protection of their RPA's and canopies during any development of the site.
- 4.1.1.9 When a proposed site plan is available, an Arboricultural Impact Assessment should be completed to determine the impact of the development on the trees on site. The information presented in this report should be used to inform the layout of the development. Further survey work may subsequently be required in order to inform the development and to guide mitigation options.
- 4.1.1.10 An Arboricultural Tree Protection Plan and Working Method Statement should be produced prior to works commencing on site. This should be informed by the Arboricultural Impact Assessment based on the final site layout.
- 4.1.1.11 The Arboricultural Tree Protection Plan and Working Method Statement should cover detailed methods for construction and operation within any of the RPAs in order to minimise the potential for adverse effects on these trees, e.g., digging using hand tools and supervision by a suitably qualified arboriculturist, in accordance with BS5837:2012.
- 4.1.1.12 During supervised work within the RPAs and canopies, if trees are considered to become unsafe (e.g., due to unavoidable severance of significant roots), such trees may need to be felled by a qualified tree surgeon. Any such loss of trees should be mitigated where practicable with replacement tree planting on site, to be agreed with the Local Planning Authority. The Arboricultural Tree Protection Plan and Working Method Statement should cover compensation planting as required.
- 4.1.1.13 Detailed methods for construction and operation should be developed in order to minimise the potential for adverse effects on trees.
- 4.1.1.14 Where appropriate, all the trees to be retained should be protected with a tree protection fence in line with BS5837:2012 current recommendations.
- 4.1.1.15 The loss of any trees should be mitigated where practicable with suitable replacement tree planting on site, to be agreed with the Local Planning Authority. Any new landscaping should be maintained to promote longevity.

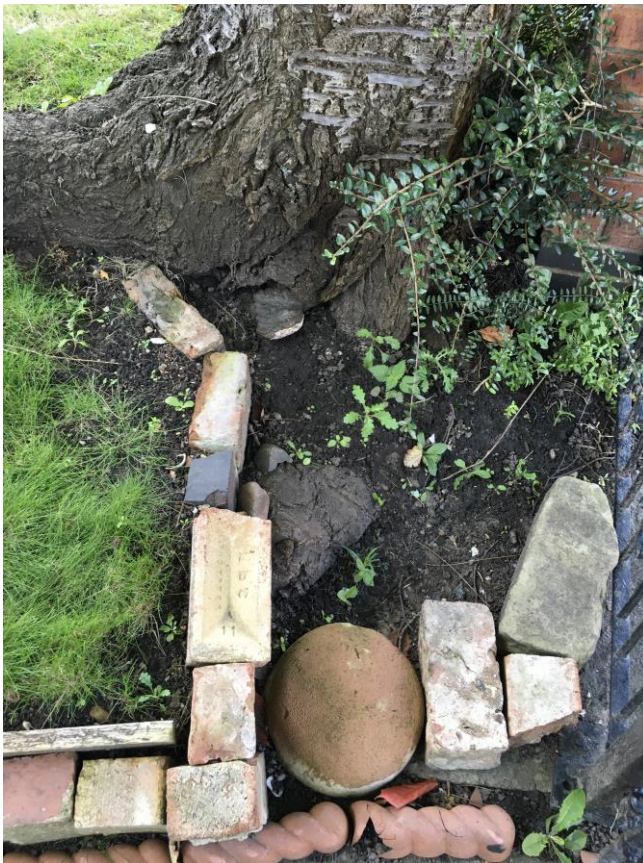
Appendix 1. Photographs



Photograph 1. T1



Photograph 2. T2



Photograph 3. Ganoderma bracket at base of T2



Photograph 4. T3



Photograph 5. T5



Photograph 6. T6



Photograph 7. T7 and T8



Photograph 8. Ginnel which runs underneath T10



Photograph 9. T11



Photograph 10. T21



Photograph 11. G1



Photograph 12. T14



Photograph 13. T15



Photograph 14. T16



Photograph 15. T17



Photograph 16. T18

Appendix 2. Table 1 - Tree Survey Results

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Lowest significant branch &	Stem diameter (mm)	Age class	Phys. Condition	Struct. Condition	Comments	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			N	E	S	W												
T1	Sorbus sp.	11	5	4	4	5	3	3,S	610	M	G	G	BT wire running through crown South. Mature for its species. Balanced crown.	Retain or remove as per development plans	20+	C1	7.32	168.33
T2	Cherry	9	5.5	5	4	5.5	2.5	2,W	550	M	F	F	Ganoderma fruiting body at base of stem roadside. 110mm width fruiting body.	Remove	20+	U	6.6	136.85
T3	Cherry	6	2.5	3	2.5	3	2	2,w	140	Y	G	F	Compression fork at base with wall acting as a natural bracing roadside.	Remove	<10	U	1.68	8.87
T4	Ash	7	1	1	1	1	1	1,S	160	Y	G	G	Wounds indicative of ash dieback but has since recovered.	Retain or remove as per development plans	30+	C1	1.92	11.58
T5	Sorbus sp.	7	4.5	4.5	2	2	2	2,S	180	SM	G	G	Tree along pavement outside site border South.	Retain or remove as per development plans	30+	C1	2.16	14.66
T6	Sorbus sp.	8	3	4.5	3.5	3	2.5	2.5 E	230	SM	G	G	As above. Canopy growing E into property.	Retain or remove as per development plans	30+	C1	2.76	23.93

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Lowest significant branch &	Stem diameter (mm)	Age class	Phys. Condition	Struct. Condition	Comments	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			N	E	S	W												
T7	Cherry	8	1	2	2	2	2	2.5 S	150	Y	G	G	Stem leaning South over pavement. Wound on stem North which hasn't fully occluded.	Retain or remove as per development plans	30+	C1	1.8	10.18
T8	Whitebeam	11	4.5	4.5	4.5	4.5	3	2s	430	M	G	G	Multiple wires running through crown. Healthy tree with no visible decay or disease symptoms present.	Retain or remove as per development plans. Prune branches away from wires if to be retained.	30+	C1	5.16	83.65
T9	Cordyline australis	6	1	1	1	1	2	N/A	130	SM	G	G	Unusual tree in corner of garden. Immediately adjacent to property.	Retain or remove as per development plans	30+	C1	1.56	7.65
H1	Box	3	0.5	0.5	0.5	0.5	0.5	N/A	80	SM	G	G	Border hedgerow along site and between properties.	Retain or remove as per development plans	30+	C1	0.96	2.90
T10	Silver birch	16	5	6	5	5	2	2N	490	M	P	F	Tree looks to have recently died or is in a severe state of decline. No foliage and large volume of deadwood present throughout crown.	Remove	<10	U	5.88	108.62

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Lowest significant branch &	Stem diameter (mm)	Age class	Phys. Condition	Struct. Condition	Comments	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			N	E	S	W												
H2	Box	5	0.5	0.5	0.5	0.5	2		80	SM	G	G	Boundary hedge left unmanaged on top.	Retain or remove as per development plans	30+	C1	0.96	2.90
T11	Purple plum	10	4.5	6	4	4	2	2,S	310	M	G	F	Cavity at base with Ganoderma fruiting body	Remove	<10	U	3.72	43.47
T12	Sorbus sp.	11	4	4	3.5	4	2	3,N	570	M	G	G	Healthy condition with no visible decay or disease symptoms present	Retain or remove as per development plans	30+	C1	6.84	146.98
T13	Cherry	8	4	4	4	4	2	2,S	240	M	G	G	Healthy condition with no visible decay or disease symptoms present	Retain or remove as per development plans	30+	C1	2.88	26.06
G1	Silver birch	15	4	4	4	4	2	N/A	320	M	G	G	Two trees adjacent to T21 with no signs of decline.	Tree condition assessment every 12 months to monitor for similar decline in vitality as T21.	30+	C2	3.84	46.32
T14	Norway maple 'crimson king'	13	6	6	6	6	5	2,E	430	M	G	G	Bark damage indicative of pets at property.	Retain or remove as per development plans	30+	C1	5.16	83.65
H3	Box	3	0.5	0.5	0.5	0.5	0	N/A	80	M	G	G	Hedgerow along border of property	Retain or remove as per development plans	30+	C1	0.96	2.90

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Lowest significant branch &	Stem diameter (mm)	Age class	Phys. Condition	Struct. Condition	Comments	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			N	E	S	W												
H4	Box	2	0.5	0.5	0.5	0.5	0	N/A	80	SM	G	G	Hedgerow along border of property	Retain or remove as per development plans	30+	C1	0.96	2.90
H5	Leylandii	3	0.5	0.5	0.5	0.5	0	N/A	80	SM	G	G	Hedge along front garden with roadside to the South.	Retain or remove as per development plans	30+	C1	0.96	2.90
T15	Downey birch	14	2.5	2.5	2.5	2.5	2.5	2,W	350	SM	F	F	Tree in neighbour property. Unable to survey base.	Retain	30+	C1	4.2	55.42
T16	Silver birch	8	2.5	2.5	2.5	2.5	1	1,w	100	Y	G	G	Young tree along fence line of garden	Retain or remove as per development plans	30+	C1	1.2	4.52
T17	Norway maple 'crimson king'	10	5	4.5	4	4	1	2,S	250	SM	G	G	Tree which has outgrown the small garden which it is located. Will likely need pruning work in the future away from the property and roadside.	Retain	30+	C1	3	28.27
T18	Norway maple 'crimson king'	10	5	4	4	4	1	2,S	260	SM	G	G	Tree on neighbour property	Retain	30+	C1	3.12	30.58

Tree/ Group Ref No.	Species	Height (m)	Crown Spread (m)				Crown Clearance	Lowest significant branch &	Stem diameter (mm)	Age class	Phys. Condition	Struct. Condition	Comments	Management recommendations	ERC	Cat Grade	Radius of Nominal Circle (m)	RPA SqM
			N	E	S	W												
T19	Copper beech	14	4	4	4	4	1	2,N	300	SM	G	G	Tree on neighbour property North of site area. Unable to reach stem for measurements.	Retain	30+	C2	3.6	40.72
T20	Silver birch	15	4	4	4	4	1	2,N	300	SM	G	G	Tree on neighbour property North of site area. Unable to reach stem for measurements.	Retain	30+	C3	3.6	40.72
T21	Silver birch	15	4	3	3	4	2	N/A	320	SM	P	P	Tree in decline with over 50% loss of crown vitality.	Remove	<10	U	3.84	46.32

Key

* - Denotes estimated measurement where access to tree stems was restricted or not accessible

Tree/ Group Ref No. – tree/group number, to be recorded on tree survey plan where necessary.

Species – common and scientific names where possible.

Height – overall height of tree in metres.

Stem Dia – stem diameter, in millimetres at 1.5m above adjacent ground level (on sloping ground to be taken on the upslope of the tree base) or immediately above the roof flare for multi-stemmed trees.

Branch spread – in meters taken at the four cardinal points to derive an accurate representation of the crown (to be recorded on the tree survey plan where necessary).

Height of cc – height of crown clearance – in meters above adjacent ground level to inform on ground clearance, crown stem ratio and shading.

Age class – young (Y), semi mature (SM), mature (M), over mature (OM) and veteran (V).

Physiological condition – e.g., good (G), fair (F), poor (P) and dead (D).

Structural condition – e.g., collapsing, the presence of decay and any physical defect.

Management recommendations – including further investigations of suspected defects that require more detailed assessment and potential wildlife habitat.

ERC – estimated remaining contribution – in years e.g., less than 10, 10-20, 20-40, more than 40.

Cat grade – category grade – U or A to C, to be recorded in plan on the tree survey plan where possible.

RPA – Root protection area calculated from BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations in sq/m. Where indicated, dimensions of radius of circle or sides of square based around centre point of trunk calculated for design purposes.

Appendix 3. Table 2 - Cascade Chart for the Quality Assessment²

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
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>	<p>Trees that have 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).</p> <p>Trees that are dead or are showing signs of significant, immediate, or irreversible overall decline.</p> <p>Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low-quality trees supressing adjacent trees of better quality.</p> <p><i>Note: Category U trees can have existing or potential conservation value which it might be desirable to preserve.</i></p>			See Table 1
	1 Mainly Arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
<p>Category A</p> <p>Trees of high quality with an estimated remaining life expectancy of at least 40 years</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).	Trees, groups, or woodlands of particular visual importance as Arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g., veteran or trees or wood pasture).	See Table 1
<p>Category B</p> <p>Trees of moderate quality with an estimated remaining life expectancy of at least 20 years</p>	Trees that might be included in Category A, but were 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.	Trees present in numbers, usually growing groups or woodlands, such that they attract a higher collective rating than they might attract as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.	Trees with material conservation or other cultural value.	See Table 1
<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 of <150mm.</p>	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.	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.	Trees with no material conservation or other cultural value.	See Table 1

² The British Standards Institute 2012, Page 9 – Table 1.

Appendix 4. Tree Constraints Plan

General Notes
 Do not scale off drawing - refer to the tree data schedule for accurate crown spread measurements.
 Directions of tree canopies are based on measurements taken to four cardinal compass points.
 No liability of any kind is accepted for any omissions or inaccuracies in respect of this plan.
 The original of this drawing was produced in colour; a monochrome copy should not be relied upon.
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Key

- Tree
- Showing canopy extent, category colour and tag number (with category) with optional F88 question arrow
- Category A: Trees of high quality with an estimated remaining life expectancy of at least 40 years
- Category B: Trees of moderate quality with an estimated remaining life expectancy of at least 20 years
- Category C: 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
- Category U: Trees in such a condition that they can not realistically be retained as living trees in the context of the current land use for longer than 10 years
- Tree Group
- Shown as dashed centreline boundary line
- Colour represents category (see above)
- BS 5837:2012 Root Protection Area

N

1:200
10m

Tree Constraints Plan
 City of York Council
 Bellfarm Avenue, York.

Scale	1:200 - A0	Date	14/08/2023
Drawing No.	1868.1	Quantity	1 CS DB

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