
Arboricultural Impact Assessment:

Vanbrugh House
Bridle Path
East Boldon
NE36 0PA

Prepared for:

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CONTENTS

1.0	Executive summary	Page 3
2.0	Introduction	Page 4
2.1	Background and scope	
2.2	Personnel, timing and weather conditions	
2.3	Survey methodology	
2.4	Root protection	
3.0	Report findings	Page 6
3.1	Survey summary	
3.2	Limitations	
4.0	Impact assessment	Page 7
4.1	Assessment process	
4.2	Pre-development impacts	
4.3	Development stage impacts	
4.4	Post development impacts	
5.0	Mitigation	Page 9
5.1	Pre-development impacts	
5.2	Development stage impacts	
6.0	Summary of impacts and mitigation	Page 11
7.0	References	Page 13
8.0	Schedule of trees	Page 14

Appended documents

Appendix 1 – Tree protection plan.

1.0 EXECUTIVE SUMMARY

1.1 Dendra Consulting Ltd was commissioned to undertake this survey and assessment by Mr. D. Fasa. The scope of the contract was to undertake an arboricultural impact assessment to support a planning application for a proposed extension to Vanbrugh House, Boldon.

1.2 The survey was undertaken on 24th June 2021 by Barry Anderson.

1.3 Nine trees were surveyed. No trees need to be removed to facilitate the extension.

1.4 Impacts on trees are predicted from the following activities:

- Pedestrian traffic and storage of materials over RPA of trees to be retained.
- Excavations within RPA of trees to be retained.
- General construction works in proximity to trees being retained.

1.5 Mitigation has been recommended as follows:

- Ground protection measures to be installed.
- Sensitive excavation methods within RPA.
- The erection of protective fencing.

1.6 Overall the proposals are likely to have a neutral impact. A detailed summary table of the impacts before and after mitigation is provided in section 6.0.

2.0 INTRODUCTION

2.1 Background & Scope

2.1.1 Dendra Consulting Ltd was commissioned to undertake this survey and assessment by Mr. D. Fasa. The scope of the contract was to undertake an arboricultural impact assessment to support a planning application for a proposed extension to Vanbrugh House, Boldon. The survey was carried out in line with BS 5837 – Trees in Relation to Design, Demolition and Construction- Recommendations, 2012 (BSI 2012).

2.2 Personnel, Timing & weather conditions

2.2.1 The survey was undertaken on 24th June 2021 by Barry Anderson. The weather conditions during the survey were fine and dry.

2.3 Survey methodology

2.3.1 All observations were from ground level. Height was measured, where possible, using a clinometer and is expressed in metres. Crown spread is also expressed in metres. In dense tree cover height and crown spread may have been estimated. Stem diameter at 1.5 metres was measured using calibrated DBH tape and is expressed in millimetres.

2.3.2 A tree quality assessment is made for each tree or group of trees as recommended in BS 5837. A cascade chart based on the standard is provided as figure 1.

Figure 1 – Chart for tree quality assessment. Adapted from BS 5837.

Category	Criteria		
Category U Trees unsuitable for retention. Trees in such a condition that they cannot be realistically retained for longer than 10 years	- Dead, dying or dangerous trees - Trees with serious structural defects - Trees with serious physiological defects		
	1. Mainly arboricultural values	2. Mainly landscape values	3. Mainly cultural & conservation values
Category A Tree of high quality with an estimated remaining life expectancy of at least 40 years.	Trees that are particularly good examples of their species. Particularly of rare or unusual species. Trees forming essential parts of a group	Trees, groups or woodlands of particular visual importance.	Trees, groups or woodlands of significant conservation, historical, commemorative or other value.
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.	Trees that might be categorised in the higher category but are downgraded because of impaired condition.	Trees present in numbers such that they attract a higher collective rating than they would as individuals.	Trees with material conservation or other cultural value.
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 15cms.	Trees not qualifying in higher categories	Trees present in groups or woodlands that do not possess significant landscape values.	Trees with no material conservation or cultural value

2.4 Root protection

2.4.1 The Root Protection Area (RPA) is represented by an area in m² around a tree which acts as a protective zone. In our schedule of trees it is expressed both as the RPA and as the Root Protection Radius (RPR). The RPR is a figure given in metres used to identify the radius of a circle around a tree which serves to act as the RPA. In certain circumstances the shape of the RPA may be altered to suit site specific factors such as the presence of buildings, roads, other trees etc.

3.0 REPORT FINDINGS

3.1 Survey summary

3.1.1 A total of nine trees were surveyed. The full results of the survey are provided in section 8.0. The trees were examined for physiological and structural defects. Remedial works for such defects have been provided where appropriate, and this has been recommended regardless of development. **Please note that some of this work may be superseded by recommendations required for development purposes.** The results of the tree quality assessment are summarised in figure 2 below.

Figure 2 – Summary of tree quality assessment

Category	Tree/Group numbers
High	-
Moderate	T3, T4, T7
Low	T1, T2, T5, T6, T8, T9
Unsuitable for retention	-

2.1.2 A small number of shrubs were present in the garden but were not included in the survey due to their size.

2.1.3 The details specified within this report are valid for a period of two years unless otherwise recommended in section 8.0.

4.0 IMPACT ASSESSMENT

4.1 Assessment process

- 4.1.1 This section of the report identifies and evaluates impacts in the absence of any mitigation. Mitigation is then detailed in section 5.0 of the report. Impacts are categorised into pre-development, development stage and post-development phases.

4.2 Pre-development impacts

- 4.2.1 No trees are to be removed. No impacts of this nature are predicted.

4.3 Development stage impacts

- 4.3.1 It is possible that during the construction stage pedestrian traffic will be moving over the RPA of several trees to be retained. It is also likely that materials may need to be stored within the RPA of trees given the compact nature of the site. This could cause compaction of the rooting environment, leading to the subsequent decline of the trees.
- 4.3.2 The proposed extension breaches the RPA of T6 and T7. In both cases the extension follows a similar line to the existing building and it is therefore unlikely to result in any significant impact on the roots. However it is possible that root damage could occur.
- 4.3.3 Generic development works on the site, such as operation of machinery, storage of materials, etc, could result in damage to the crowns, stems and root systems of trees to be retained.

4.4 Post development impacts

- 4.4.1 Potential post development tree/resident conflicts such as encroachment, shading, leaf fall, honeydew, etc usually arise from the erection of residential properties close to large trees. Such problems are subjective and depend entirely on different attitudes to trees. Consequently the impacts are difficult

to predict with any degree of accuracy. Given the site layout, and the proximity of trees to the existing building, the potential for post development impacts is considered to be low.

5.0 MITIGATION

5.1 Pre development impacts

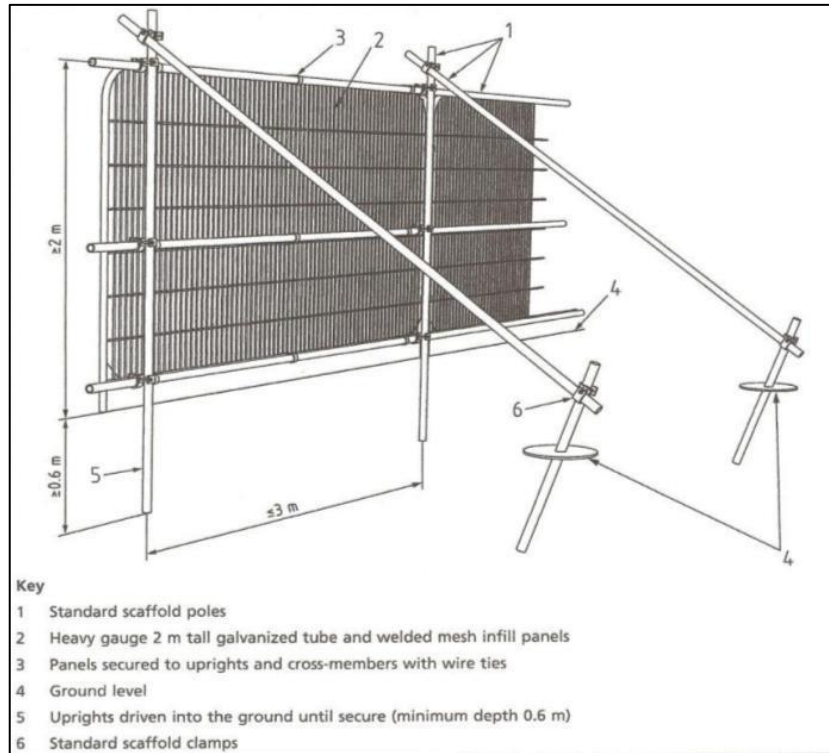
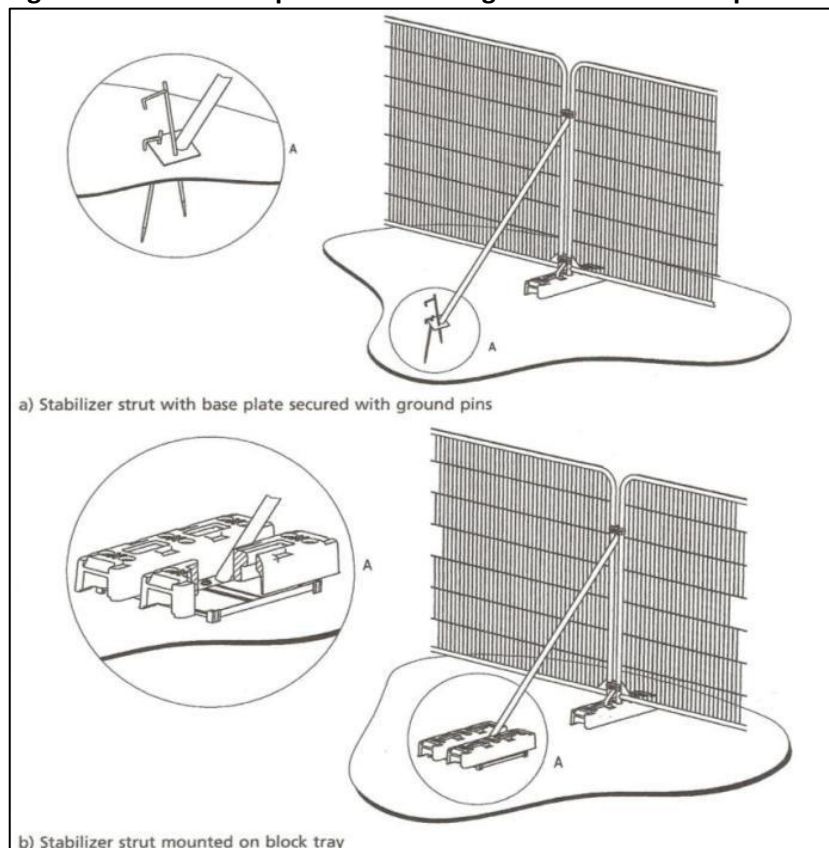
5.1.1 None required.

5.2 Development stage impacts

5.2.1 To mitigate for the likely compaction caused by pedestrian movement and storage of materials on site, ground protection measures will be put into place prior to the commencement of works. The ground protection will consist of boards overlying a compressible layer, such as 150mm of woodchips or gravel, which in turn overlies a geotextile membrane.

5.2.2 To mitigate for potential root damage to T6 and T7 demolition of the existing structure and excavations in the area hatched green on the tree protection plan will be undertaken by hand. The purpose of this is to prevent machinery from tearing roots back toward the main stem and causing damage beyond the immediate working area. Roots, where encountered, may be cut back using a handsaw or secateurs.

5.2.3 Protective fencing of the type specified in figures 3 or 4 below will be installed as shown on the tree protection plan. The fencing will be erected prior to the start of the demolition works. Signs will be attached to the fencing to state that it is a protected area and that it should not be moved during the construction phase.

Figure 3 – Default protective fencing for trees on development sites.**Figure 4 – Alternative protective fencing for trees on development sites.**

[Figures 3 & 4 reproduced with the permission of the British Standards Institute].

6.0 SUMMARY OF IMPACTS AND MITIGATION

6.1 The impacts and mitigation criteria shown in figure 5 below have been used to assess the impacts of the proposed development, which is summarised in figure 6.

Figure 5 – Impact assessment parameters and predictions

Assessment parameters	Measure of impacts
Nature and Magnitude of impact	Major negative Negative Minor negative Neutral / Negligible Minor positive Positive Major Positive
Extent of impact	Site level Street level Local level District level County level National level
Probability that impact will occur	Certain / Highly likely Likely Possible Extremely unlikely

Figure 6 – Site impacts before and after mitigation.

Proposed activity	Predicted impact without mitigation	Assessment of impact without mitigation	Proposed Mitigation	Assessment of impact with mitigation
Site traffic within RPA of trees to be retained	Damage to roots of low and moderate value trees. Possible decline and death of trees	Negative Site level Possible	Ground protection measures to be installed	Neutral Highly likely
Excavation within RPA	Damage to roots of low and moderate value trees	Negative Site level Possible	Hand digging for foundations in RPA	Neutral Highly likely
General construction works in proximity to trees being retained	Damage to stem, branches and roots of trees to be retained	Negative Site level Possible	Protective fencing to be erected	Neutral Highly likely

7.0 REFERENCES

BSI (2012) *BS5837:2012 Trees in relation to design, demolition and construction – Recommendations*. British Standards Institution. London.

8.0 SCHEDULE OF TREES

KEY

NR: Not recorded

Age: Y = Young, SM = Semi mature, EM = Early mature, M = Mature, OM = Over mature

Estimated Remaining Contribution: Expressed in years

Recommendations for health and safety reasons are not highlighted. Recommendations for development purposes are highlighted in **RED**

No.	Species	Height (m)	Stem diam. (mm)	Crown Spread (m)				Height of main canopy (m)	Height of first significant branch (m)	Direction of first significant branch	Age class	Estimated remaining contribution	Comments	Recommendations	Tree quality Assessment	RPA (m ²)	RPR (m)
				N	E	S	W										
T1	Cypress	7.0	180	1.0	1.0	2.0	2.0	1.5	NR	NR	SM	40+	Asymmetric crown. Close to property	No action required at the present time	C1	15	2.2
T2	Western red cedar	8.0	190	3.0	1.0	2.0	3.0	1.5	NR	NR	SM	40+	Asymmetric crown. Close to property	No action required at the present time	C1	16	2.3
T3	Silver birch	10.0	220	4.0	3.0	4.0	3.0	2.0	NR	NR	EM	40+	No major defects	No action required at the present time	B1	22	2.6
T4	Sycamore	11.0	800	6.0	6.0	7.0	5.0	2.5	NR	NR	M	40+	Dense ivy on stem	No action required at the present time	B1	290	9.6
T5	holly	5.0	330	2.0	3.0	3.0	2.0	1.5	NR	NR	M	40+	Dense ivy on stem	No action required at the present time	C1	49	4.0
T6	Pear	11.0	500	3.0	4.0	3.0	4.0	3.0	NR	NR	M	10+	Sparse crown. Potentially in decline	Monitor annually	C1	113	6.0

No.	Species	Height (m)	Stem diam. (mm)	Crown Spread (m)				Height of main canopy (m)	Height of first significant branch (m)	Direction of first significant branch	Age class	Estimated remaining contribution	Comments	Recommendations	Tree quality Assessment	RPA (m ²)	RPR (m)
				N	E	S	W										
T7	Sycamore	15.0	630	2.0	5.0	6.0	5.0	3.0	NR	NR	M	40+	Fork at 5m. Asymmetric crown to south	No action required at the present time	B1	180	7.6
T8	Maple	8.0	260	3.0	2.0	3.0	2.0	2.5	NR	NR	SM	40+	No major defects	No action required at the present time	C1	31	3.1
T9	Maple	7.0	230	4.0	3.0	4.0	2.0	2.5	NR	NR	SM	40+	No major defects	No action required at the present time	C1	24	2.8

REPORT END

KEY

Tree retention category

Category A
Category B
Category C
Category U

Tree Constraints

Crown Spread

Root Protection Area

Tree Protection

Protective fencing

Ground protection measures

Sensitive excavation

Scale: 1:200 @ A3

The original of this plan was produced in colour - a monochrome copy should not be relied upon

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