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BS 5837 Report

For the Proposed Wall construction

To the rear of 3 & 5 Priory Road

London NW6 4NN

Andrew Gentle Tech Cert (Arbor A)
Suffolk Tree Services Ltd

30th November 2015

Contents

1.0 Scope of client brief:

1. To undertake an assessment of trees growing in the rear of 3 Priory Road, London, NW6 4NN in accordance with BS 5837:2012 'Trees in relation to Design, Demolition and Construction – Recommendations.'
2. Provide an Arboricultural Implications Assessment with regard to the effect of the proposed construction on the adjacent trees.

2.0 Terms of reference:

1. BS 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations.'
2. Site layout plan supplied by the client.

3.0 Appendices:

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Appendix A: Tree Constraints Table and Arboricultural Method Statement
Appendix B: BS5837 tree classification assessment table
Appendix C: Cascade chart for tree quality assessment.
Appendix D: Plan showing location of Root Protection Areas.
Appendix E: Ground Protection Methods to be used within the RPA

4.0 The site:

The site is located to the rear of 3 Priory Road, London NW6 4NN. The rear garden of 3 Priory Road backs onto land at the rear owned by Camden Council. There are two trees growing within the garden in close proximity to the rear boundary wall. The boundary wall to the rear of the garden backs onto Farndale House and is an old wall probably dating back over 100 years, which pre-dates the trees. There is a difference in levels between the two properties of some 300mm where it is higher on the garden side so it is also retaining the rear garden of 3 Priory Road to a degree.

5.0 Tree categorisation

5.1 I have applied the following principals in *BS 5837 (2012): Trees in Relation to Design, Demolition and Construction* to categorise the trees.

Under these principals the category for each tree is assessed by following the guidelines in the BS 5837 cascade chart for tree quality assessment. (Appendix C). A brief summary of each category is outlined as follows.

- **Category U trees:**
  This category signifies trees that are in such a condition that any existing value would be lost within 10 years and which could, in the current context, be removed for reasons of sound arboricultural management.

- **Category A trees:**
  This category signifies trees that are of high quality and value. Occasionally a Veteran tree, although not in the best condition may warrant this category because of its wildlife and cultural value. It is essential to retain these trees. The design of the proposed development should take into account the retention of category A trees.

- **Category B trees:**
  This category signifies trees that are of moderate quality and value. It is important to retain these trees. The design of the proposed development, where feasibly possible, should take into account the retention of category B trees.

- **Category C trees: (there are two on site)**
  This category signifies trees that are of low quality and value. They are generally trees that could remain and are expected to have a safe useful life expectancy of between 10 and 20 years if no development were to occur. However, because of their generally low quality it would not be a great loss if they had to be removed if they were a significant constraint to the design or construction process of the proposed development. Young trees with a stem diameter below 150mm at 1.5metres stem height are also included in this category.

6. Appraisal

6.1 The proposal is to demolish the existing wall and remove the existing foundation to allow for a new foundation and the erection of a new wall. There is one larger tree, a Common Lime tree (Tilia x Europaea) and a smaller Yew tree (Taxus baccata) growing in the rear garden of 3 Priory Road.

6.2 It is the Lime tree that I have been asked to comment on. This is growing approximately 600mm from the base of the wall. The tree is a semi mature tree that is regularly pollarded every five years to manage its size. The level of the garden where the tree is growing is some 300mm higher than the level of the ground on the side of Farndale House. The radius of its RPA as calculated according to Table D1 of BS5837 is 5.3 metres but it is unlikely that the tree roots have encroached into the soil on the Farndale house side given the difference in the soil height, the wall and its foundations. Of significance is the fact that the tree has been over the years regularly pollarded to manage its size. Generally tree roots are commonly found up to a depth of approximately 600mm but this will depend on a number of factors. In this case the depth of the existing wall foundations, the soil type and whether

the tree was ever allowed to develop a full crown in the past will be the influencing factors. It is likely that the roots of the tree will have grown up against and the wall and will then have grown alongside it. Indeed this is evidenced by the fact that the wall has over the years been leaning outwardly away from the tree, probably due to this physical contact with the roots. Until the wall and foundation are demolished however it will be impossible determine this for sure.

7. Recommendations

That through liaison with the Council's Tree Officer agreement is reached regarding the tree protection measures used to protect the trees.
The following precautionary measures should be used until the extent of the root system is determined.
7.1 That the RPA of 5.3m is used initially and protective measures used to avoid compaction of the soil within this area until the extent of the root system is determined
(See Appendix E). No excavation is carried out mechanically within the RPA. No Machinery or anything that can cause soil compaction should be used garden side.
7.2 That the wall along the area of the tree for a length of 2m either side of the main stem is demolished carefully and the lower level that is below the soil level is taken down by hand to the original foundation.
7.3 That the original foundation in this area is broken up carefully and not simply pulled out mechanically to avoid pulling up or damaging any tree roots in contact with the foundation.
7.4 That any exposed roots are covered by hessian sacking and protected from exposure to prevent desiccation and to protect them from rapid temperature changes.
7.5 The working RPA can then be determined as can the construction method used depending upon the extent of the root encroachment, if any. If the roots have been contained by the wall as expected and have not encroached under the wall then the construction of a new foundation and wall be no more detrimental to the tree than the original wall was. If roots are found below the original foundations then a further site inspection and arboricultural supervision and advice will be required to assess the best course of action.
7.6 Concrete and mortar mixing and washing will be carried out away from the areas of the RPA's.
7.7 That a gap of at least 150mm be left between the new wall and any tree roots. Prior to rebuilding the wall the tree roots are protected and then backfilled with a good quality topsoil.

8.0 Report caveats

1. Trees not covered by a Tree Preservation Order are still considered a 'material constraint' within the planning process. No work should take place on trees outside the ownership of the client or without the consent of the Local Planning Authority.
2. Tree heights and spread and diameters are estimated. The survey is only concerned with arboricultural issues.
3. The survey was carried out in accordance with BS5837: 2012 'Tree in relation to Design, demolition and Construction – Recommendations.'
4. Any work carried out on the trees in accordance with specifications contained herein will be in accordance with BS 3998:2010 Recommendations for tree work. Prior to the works inspections will be carried out to ensure compliance with all relevant Wildlife and Countryside legislation.
5. Any changes to ground level or excavations near to tree roots not discussed within this report may affect the health and stability of the trees and a further inspection would be required.
6. This survey was undertaken using a site plan provided by the client.
7. This report remains valid for 12 months.

Signed – Andrew Gentle

Suffolk Tree Services Ltd

Appendix A

Tree Constraints Table and Arboricultural Method Statement for proposed new wall at 3 Priory Road, London, NW6 4NN		
Constraints item	**Description**	**Protection method**
1. Establishment and protection of root protection areas (RPA) for trees to be retained	An RPA is intended to protect the roots of trees on or adjacent to the site. This should be protected from intrusion by any construction activity except by agreement with the tree officer.	The RPA for retained trees will be calculated according to Table 2 in BS5837. (A circle with a radius 12 times the diameter of the tree at 1.5 metres height). The RPAs will be protected through the erection of fencing as described in the main body of the accompanying report.
2. Services routes.	Position of trenches for installation of services	If underground services have to pass within the RPA, detailed plans will be drawn up showing the route, and an arboricultural method statement for the installation will be provided.

Generic Construction Constraints item - These are requirements when BS 5837:2005 is cited as a planning requirement.	**Protection method**
1 Location of site hut and/or temporary toilets.	Site huts and toilets may be used as part of the RPA enclosure, but may not be sited within it.
2 Siting of bonfires.	No fires to be lit within 20 metres of trees or shrubs.
3 Storage of stripped topsoil	Topsoil should be stored away from RPAs to prevent compaction.
4. Location of contaminant storage and washout areas.	Contaminant storage and washing areas for cement/concrete/fuel/chemicals should be located a minimum of 10m from the outer edge of RPAs and on ground not sloping towards them.
5. Storage of construction materials.	No builders' materials to be stored beneath the crown spread or within the RPA's of retained trees.
6 Working within the RPA.	No changes in surface levels within the RPA without taking appropriate mitigating action. Where a 2m wide work area is allowed inside the RPA the ground should be protected from compaction by a layer of woven geotextile membrane overlaid with scaffold board laid on sharp sand.
7. Installation of hard standing within the RPA	To be of a no-dig method agreed with the Council tree officer
8. Site supervision required	Tree pruning and felling operations. Installation of protective fencing correctly positioned around the RPAs. Monitoring of the construction phase.

Appendix B Table 1 Cascade chart for tree quality assessment

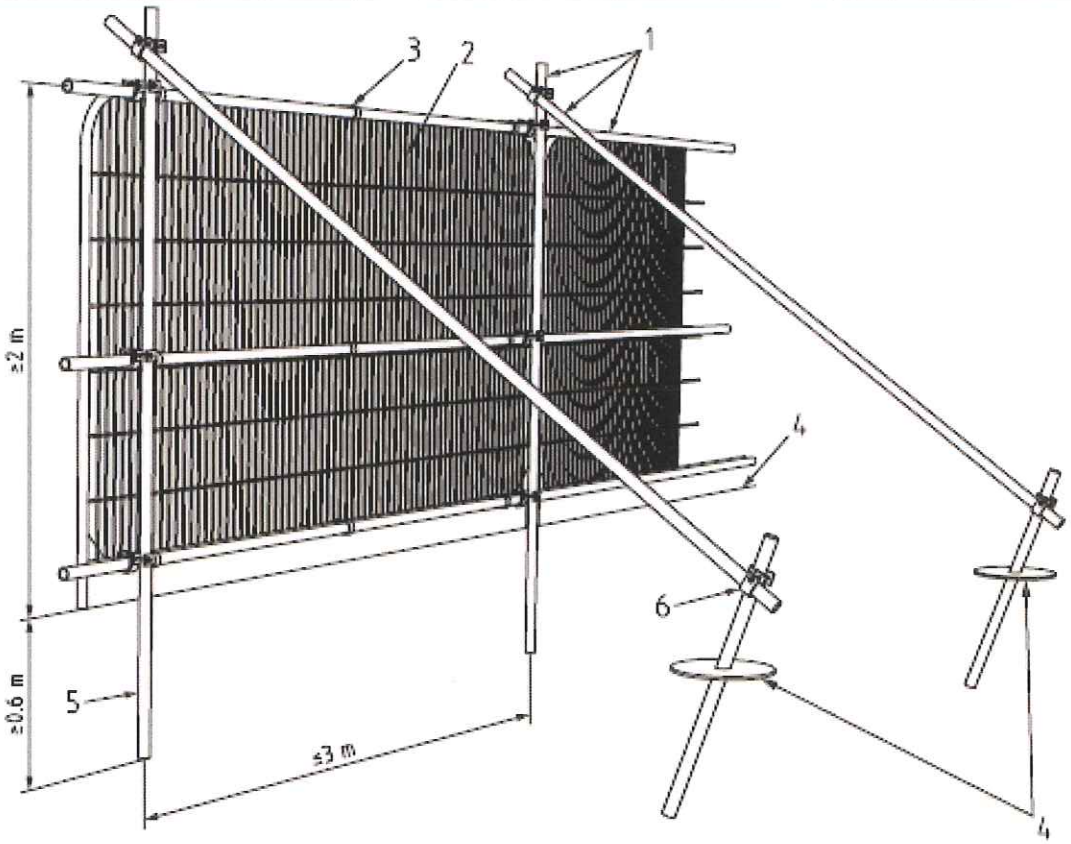
Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in land use for longer than	•Trees that have a serious, irremediable, 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)the context of the current • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline10 years • 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			Dark Red
NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve;				
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years.	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 trees or wood-pasture)	Light Green
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	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	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.	Trees with material conservation or other cultural value	Mid Blue
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	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	Grey

Site: 3 Priory Road, London NW6 4NN	Client: Whymark & Moulton	Surveyor: Andy Gentle	Date: 25/11/2015

Key: Age: Y = Young, MA = Middle Aged, M = Mature, OM = Over Mature, V = Veteran. Condition: G = Good, F = Fair, P = Poor, D = Dead.

Tree ref No.	Species	Ht M	Stem Dia mm	Sprd m N S E W	Crown Clear. m	Age Class	Physiological condition	Structural Condition	Comments and/or Recommendations	Useful Yrs left	Category	Radius of RPA m
1	Lime	9m	440	5m	3m	MA	Good	Good	Tree is managed as a pollard on a 5 yearly basis.	20>	C	5.28
2	Yew	5m	160	4m	2m	Y	Good	Good	Small Yew tree, likely self set, suppressed to a degree by the Lime.	20>	C	1.92

Figure 2 **Default specification for protective barrier**



Key

1 Standard scaffold poles

2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels

3 Panels secured to uprights and cross-members with wire ties

4 Ground level

5 Uprights driven into the ground until secure (minimum depth 0.6 m)

6 Standard scaffold clamps

Appendix E

Ground Protection Methods

Where the set-back of the tree protection barrier would expose unmade ground within the RPA to construction damage, new temporary ground protection should be installed as part of the implementation of physical tree protection measures prior to work starting on site.

New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

NOTE The ground protection might comprise one of the following:

- *a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;*

- *b) for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;*

- *c) for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.*

The locations of and design for temporary ground protection should be shown on the tree protection plan and detailed within the arboricultural method statement.

In all cases, the objective should be to avoid compaction of the soil, which can arise from the single passage of a heavy vehicle, especially in wet conditions, so that tree root functions remain unimpaired.