# Tree Survey,

Arboricultural Implications Assessment And Arboricultural Method Statement

Relating to:

La Sainte Union School, Highgate Road, London NW5 1RP

0 2 DEC 2009

Produced for: Watkinson & Cosgrave Linton House 39-51 Highgate Road London NW5 1RT

Prepared by: Challice Consulting Ltd. Mr. Andrew Pinchin BSc. (Hons), Dip. Arb. (RFS), F.Arbor.A 01306 743374

> Date: 20<sup>th</sup> May 2009

Our Ref: CC/392 AR597

Challice Consulting Ltd. Holmwood Farm Grange Horsham Road North Holmwood Dorking Surrey RH5 4JR Tel: 01306 743374 Email: info@challiceconsulting.co.uk Web: www.challiceconsulting.co.uk

2

114

Contents	Section	Contents	Section
Instructions	1.0	Pre-Commencement Meeting	11.0
Purpose	2.0	General Site Precautions	12.0
Scope	3.0	Tree Works	13.0
Documents Supplied/Used	4.0	Tree Protective Fencing	14.0
Site Details	5.0	Ground Protection	15.0
Survey Method	6.0	Demolition of Existing Wall	16.0
Tree Details	7.0	Construction of New Wall	17.0
Proposal	8.0	Sequencing and Supervision	18.0
Arboricultural Implications Assessment	9.0	Amendments	19.0
Introduction to Arboricultural Method Statement	10.0		

# Appendices

đ

÷,

List of Contacts	
Tree Survey and Recommended Tree Works Schedule (with Excerpt from British Standard Cascade Chart)	
Tree Protection Plan in Colour at A1 and Scale 1:200	
Tree Protective Fencing and Ground Protection Specification	
Example of Site Inspection Record	
Hand Digging in the Vicinity of Trees	
	List of Contacts Tree Survey and Recommended Tree Works Schedule (with Excerpt from British Standard Cascade Chart) Tree Protection Plan in Colour at A1 and Scale 1:200 Tree Protective Fencing and Ground Protection Specification Example of Site Inspection Record Hand Digging in the Vicinity of Trees

# 1.0 Instructions

- 1.1 This report has been commissioned by Watkinson & Cosgrave to;
  - Survey the trees in accordance with British Standard (BS) 5837:2005 'Trees in to Construction- Recommendations'.
  - Detail the arboricultural implications of the proposed project.
  - Develop a tree protection strategy for the duration of the development including any demolition works.

# 2.0 Purpose

- 2.1 The purpose of this report is to provide the necessary arboricultural information to accompany a planning application to demolish part of an existing brick boundary wall and construct a new wall with railings and back-stays.
- 2.2 The information provided in this report is designed to address the requirements of the Local Planning Authority (LPA) in terms of the arboricultural information necessary to determine the planning application.

# 3.0 Scope

- 3.1 The trees have been surveyed in accordance with BS 5837:2005 'Trees in Relation to Construction- Recommendations'. Trees on and immediately adjacent to the site with a stem diameter over 75mm have been included.
- 3.2 A full hazard assessment of the trees (including the assessment of decay or defects and its implications), has not been undertaken as this is considered beyond the scope of this report. Any obvious hazards and defects have been identified in the Tree Survey Schedule and appropriate works have been recommended for immediate action.

# 4.0 Documents Supplied/Used

# Table 1

Document	Supplied By	Format/Ref
Layout/fencing detail plans	Watkinson & Cosgrave	Paper
Schedule of works for construction	Watkinson & Cosgrave	Paper
Geological Survey Plan Sheet no. 256	Challice Consulting Ltd.	Paper

# 5.0 Site Details

- 5.1 The site is within the administrative jurisdiction of the London Borough of Camden.
- 5.2 No enquiries have been made regarding the legal protection status of the trees.
- 5.3 The site slopes downwards to the north/north-east.
- 5.4 The soil type is London Clay with reference to Geological Survey Sheet no. 256. Use of a hand auger on site revealed a dark, made-up soil to 400mm depth. Clay is likely to lie beneath this and the soil will be relatively vulnerable to compaction.



# Figure 1 - Results of Soil Auger

#### 6.0 Survey Method

- 6.1 The site and trees were inspected on 19<sup>th</sup> May 2009.
- 6.2 The trees were inspected from ground level and no climbing inspections were undertaken.
- 6.3 Heights of the trees were estimated by eye and crown spreads were estimated by pacing.
- 6.4 Photographs were taken on site using a digital camera.
- 6.5 A hand auger was used to assess the soil type.

### 7.0 Tree Details

7.1 The total number of records is as follows:

Individual Trees (T):	-	9
Tree Groups (G):	-	2

- 7.2 The tree details and proposed works are presented in the Tree Survey Schedule and Recommended Tree Works at **Appendix 2** and tree positions are shown on the Tree Protection Plan at **Appendix 3**.
- 7.3 The quality and value of the individual tree stock has been broken down by BS quality grade in **Table 2** and **Figure 2** below. The grading system can be summarised as follows:

A Grade – trees of high quality and value with a life expectancy of more than 40 years

**B Grade** – trees of moderate quality and value, with a life expectancy of more than 20 years

C Grade – trees of low quality and value, with a life expectancy of more than 10 years

R Grade - trees for removal, with a life expectancy of less than 10 years

#### Challice Consulting Ltd.

Table 2 - Quality and Value of Existing Tree Stock

Total No. Individual Trees (9)	A Grade	B Grade	C Grade	R Grade
No. of Trees	N/a	2	7	N/a
% of Total	N/a	22%	78%	N/a

# Figure 2

.....

٩.



- 7.4 In addition to the individual trees, there are two groups of trees (G10 and G11). These contain ten and two trees respectively. Both of these groups fall within C Grade of the BS 5837 grading system.
- 7.5 The Root Protection Areas (RPAs) of the trees are included in the Tree Survey Schedule with reference to Table 1 of BS 5837:2005 'Trees in Relation to Construction Recommendations'. The Root Protection Area (RPA) is the area, measured in m<sup>2</sup>, which is calculated in accordance with the BS using the stem diameter of the trees. This should provide retained trees with sufficient rooting environment to survive the proposed development. Section 5.2 of the BS provides for the shape of the RPA to be modified from the starting point of a circle to account for site features where rooting may be restricted, as long as the total area remains the same.
- 7.6 Where individual open grown trees with no impediments to normal rooting are concerned, Section 5.2 also provides for the RPA to be offset by up to 20% in any one direction.

#### Challice Consulting Ltd.

7.7 In this instance, no RPAs have been modified or offset. A precautionary approach has been adopted showing the RPAs of all retained trees as nominal circles.

## 8.0 Proposal

12

٩.

8.1 The proposal is to demolish part of an existing brick boundary wall on the Croftdown Road frontage of the site and construct a new wall with railings and back-stays. The new wall also covers part of the boundary currently occupied by chain-link fencing.

## 9.0 Arboricultural Implications Assessment

9.1 Trees T9 and G10 are to be removed. These comprise poor quality trees of up to 12m in height, situated at the eastern end of the proposed new section of walling. The existing chain-link fence has become embedded in the stems of many of these trees (including T9) and it would not be possible to construct a new boundary wall and retain the trees. The trees are of modest landscape significance and removal will have minimal impact on the character and amenities of the locality.

### Figure 3 - View of G10 between T6 and T7



9.2

Tree works are recommended for good arboricultural practice and to ensure reasonable clearance from the proposed construction. The pruning described in

the Recommended Tree Works Schedule at **Appendix 2** will not adversely affect the trees or their contribution to local amenity. The proposed pruning is very minimal and comprises crown cleaning of T6 and T8 (both of these trees have significant deadwood within the crowns).

- 9.3 There are incursitions of the new wall and associated back-stays within the \_ RPAs of T2, T3, T4, T5, T6, T7, T8 and G11.
- 9.4 Part of the new wall is to be built on the foundation of an existing wall. This section of the wall is highlighted in red on the Tree Protection Plan at Appendix
  3. The 1m<sup>3</sup> concrete pad foundations for the back-stays are within the nominal RPAs of adjacent trees (T2, T3, T4, T5 and T6), but the presence of the existing wall foundation means that limited root damage will occur.
- 9.5 A section of the new wall is to be constructed along the line of an existing chain link fence (highlighted in yellow on the Tree Protection Plan at Appendix 3). This will entail excavating a 1m deep foundation, 0.45m in width. Excavations will also be required for the concrete back-stay foundations. The trees affected are T6, T7, T8 and G11. With regard to T6, T7 and G11, the incursions into the RPAs are relatively minor. There is a more significant incursion into the RPA of T8. This tree is a mature Robinia which is not of the highest vigour. To reduce the potential impact on this tree, additional tree protection measures are to be adopted as detailed in the Arboricultural Method Statement (AMS).





9.6 In summary, it is not felt that there are any arboricultural reasons why the proposed works cannot proceed. The trees to be removed are of limited quality and landscape significance and the retained trees are to be offered an adequate degree of physical protection during the works in accordance with the BS.

# 10.0 Introduction to Arboricultural Method Statement

10.1 To safeguard the retained trees on the site during the development works, it will be necessary to implement tree protection measures as outlined below. These will protect the above and below ground parts of retained trees and preserve the soil structure of areas which have been allocated for new planting.

#### Challice Consulting Ltd.

- 10.2 The basic principle is that the area inside the tree protective fencing and where ground protection has been used is to be protected for the duration of the works.
- 10.3 A copy of this AMS shall be maintained on site at all times and made available to all site personal.
- 10.4 All site personnel shall be made aware of the key implications of this AMS
- 10.5 As of 2005, Local Planning Authorities have powers to serve **Temporary Stop Notices** if agreed tree protection measures are not carried out. Adhering to this AMS will ensure that such costly and time consuming action is avoided.

## 11.0 Pre-Commencement Meeting

1

11.1 A pre commencement site meeting, involving representatives from the Development Company, the Arboricultural Consultant and the LPA Tree Officer will be held to ensure that all aspects of the tree protection process are understood and agreed. A record of the meeting will be communicated to all parties by the Arboricultural Consultant.

## 12.0 General Site Precautions

- 12.1 The following points will be observed at all times:
  - o No fires will be lit on site.
  - o No access will be permitted inside the tree protective fencing.
  - No materials, equipment or debris will be stored within the tree protective fencing.
  - Notice boards, telephone cables or other services must not be attached to any part of retained trees.
  - Materials which will contaminate the soil (e.g. concrete mixings, diesel oil and vehicle washings) must not be permitted to enter the RPA of retained trees.

### Challice Consulting Ltd.

## 13.0 Tree Works

- 13.1 All works will be carried out in accordance with BS 3998:1989 'Recommendations for Tree Work' (as amended) and to current arboricultural best practice. Tree works will be carried out by a suitably qualified and experienced Arbit tural Contractor holding the necessary insurance cover. This contractor should carry out the relevant site specific risk assessments and record such information prior to commencement of tasks and work in accordance with current health and safety standards, practices and legislation. A list of such contractors is available from the Arboricultural Association at www.trees.org.uk.
- 13.2 If additional pruning of trees is required to facilitate the proposed works or access for machinery/plant, the Arboricultural Consultant shall be contacted to advise on appropriate works and liaise with the LPA as necessary.

## 14.0 Tree Protective Fencing

- 14.1 Tree protective fencing and ground protection are used to ensure that the RPAs of retained trees are safeguarded. These measures may also be employed to protect areas of ground for new landscaping.
- 14.2 The positioning and specification of the fencing are shown in **Appendix 3** and **Appendix 4**. Hoarding will be most suitable for the trees growing within the pavement outside the site. These trees are surrounded by hard surfacing which will serve as effective ground protection during the works. Hoarding has been specified around the trees to protect the trunks from damage. Either Heras fencing or hoarding will be suitable for G11.
- 14.3 To properly safeguard the RPAs of the trees growing within the pavement outside the site, the hoarding will be adjusted for each tree such that it covers the soft landscaped area around the tree (the sizes of these vary).



# Figure 5 - Soft Landscaped Area around Tree Growing within Pavement

- 14.4 The protective fencing will remain in position for the duration of the development, including the removal of any existing structures. Clear signs will be attached to the fencing once erected suggested wording will be 'Protected Trees No Access'.
- 14.5 Site security fencing will also be erected by the contractors carrying out the works. The exact location of this fencing can be agreed upon at the precommencement meeting.

## 15.0 Ground Protection

15.1 A provision has been made to install ground protection to protect the rooting environments of T8 and G11 (position shown in Appendix 3 and specification shown in Appendix 4). The ground protection will remain in place for the duration of the works.

#### Challice Consulting Ltd.

## 16.0 Demolition of Existing Wall

16.1 Following erection of tree protective fencing and installation of ground protection, the existing wall is to be removed down to pavement level. The existing chain-link fencing is also to be removed. Trees T9 and G10 will be removed before the as the fencing is embedded within the tree stems.

### 17.0 Construction of New Wall

- 17.1 Part of the wall is to be constructed on an existing wall foundation (shown in red on the Tree Protection Plan at Appendix 3). This will minimise root damage to T2, T3, T4, T5 and T6. Excavations on the school side of the wall will be necessary for the 1m<sup>3</sup> concrete pad foundations which support the back-stays for the railings. Excavations within the nominal circular RPAs of the trees will be carried out by hand under direct arboricultural supervison, with any exposed roots being cut cleanly in accordance with Section 11.3.5 of the BS. Heavy gauge polythene sheeting/damp proof membrane will be used to line the foundation pad holes to protect the rooting environment of the trees from the potentially toxic effects of leaching concrete.
- 17.2 A section of the wall is to be constructed along the line of an existing chain-link fence (shown in yellow on the Tree Protection Plan at **Appendix 3**). A 1m deep by 0.45m wide foundation trench is to be excavated, along with excavations for the back-stay foundation pads. Excavations are to occur within the RPAs of T6, T7, T8 and G11. All excavations within the nominal circular RPAs of the trees will be carried out by hand under direct arboricultural supervison, with any exposed roots being cut cleanly in accordance with Section 11.3.5 of the BS. Heavy gauge polythene sheeting/damp proof membrane will be used to line the foundation pad holes to protect the rooting environment of the trees from the potentially toxic effects of leaching concrete.
- 17.3 The most significant incursion is into the RPA of T8 (a mature Robinia). To minimise damage to the roots of this tree, it is proposed that a lintel/ground beam be used in the location indicated on the Tree Protection Plan at **Appendix 3**. The lintel would need to be above existing ground level and would rest on concrete pads either side. The full details of the method of construction can be discussed and clarified at the pre-commencement meeting.

Challice Consulting Ltd.

17.4 Notes on hand digging in the vicinity of trees are attached at Appendix 6. The principles embodied in these notes will be adhered to at all times.

# 18.0 Sequencing and Supervision

13

- 18.1 Effective tree projection relies on following a logical sequence of events and arboricultural inspection/supervison.
- 18.2 Works which have the potential to affect trees will be supervised by a suitably qualified and experienced Arboricultural Consultant. Regular inspection visits will also be undertaken to ensure that tree protection measures are being adhered to. The final details of supervision and the frequency of inspection visits will be agreed at the pre-commencement meeting. The Arboricultural Consultant will make a record of visits, which will be attached to the site copy of the AMS for inspection and communicated in writing to the LPA. An example of the Site Inspection Record is found in Appendix 5.

Stage	Action	Personnel	Report Section Reference
1	Issue arboricultural report to site manager	Client/Developer	N/a
2	Give Arboricultural Consultant (AC) at least a week's notice of pre-commencement meeting	Client/Developer	N/a
3	Pre-commencement meeting	Site Manager, Tree Officer and AC	11.0
4	Carry out tree works	AC to monitor	13.0
5	Erect tree protective fencing and install ground protection	AC to Inspect	14.0 and 15.0
6	Demolish existing wall and remove chain- link fencing	AC to supervise	16.0
7	Construct new wall, including foundations for wall and back-stays	AC to supervise	17.0
8	Remove tree protective fencing/ground protection	AC to monitor	N/a

Table 3 - Sequencing and Supervision

Challice Consulting Ltd.

# 19.0 Amendments

19.1 Issues sometimes arise on development sites which require amendments to the previously agreed tree protection details. Any amendments to this AMS will be discussed with the Arboricultural Consultant and approved in writing by the LPA prior to being improvemented. Copies of paperwork relating to any amendments shall be attached to the site copy of the AMS to provide a definitive record of what has been agreed.



٤,



Contact	- ne	Company/LPA	Contact Number(s)	Report Issued to?
Planning Agent	Mr. John Goedecke	Watkinson & Cosgrave	020 7485 6016	Yes
Arboricultural Supervisor	Mr. Andrew Pinchin	Challice Consulting Ltd.	(W) 01306 743374 (M) 07825 50011	
LPA Tree Officer	Mr. Alex Hudson	London Borough of Camden	020 7278 4444	

List of Contacts

Appendix 2

.\*

Challice Consulting Ltd. Tel: 01306 743374

Date: 19th May 2009

# Tree Survey and Recommended Tree Works Schedules

Page 1

Site: La Sainte Un	on School, Highga	ate Road, London NW5 1RF
--------------------	-------------------	--------------------------

## Surveyor: Mr. Andrew Pinchin

Our Ref: CC/392 AR597

Protection Protection Landscape B.S.Sub Useful Observations Height Crown Ground Ape Starn Growth Structural. English Name Tree Clans Multiplier Radius Vitality Condition Contribution Cat Cat Life Spread Clearance Diameter No. 170 12 Medium C 1.2 20-40 Minor damage to bark on stem T1 Sycamore 8 2 4 Young 2.0 Normal Fair 4 SS 1 Number Variegated variety 6 Recommended Works/ No works proposed Reason for Works: 12 C 1.2 20-40 Bi-furcation at 3m T2 Sycamore 10 5 6 Middle Aged 260 3.1 Normal Fair Medium 5 4 SS 1 Number Variegated variety 5 Recommended Works/ No works proposed Reason for Works: Bi-furcation at 4.5m Ash, Raywood 16 6 Middle Aged 440 12 5.3 Normai Fair High B 1.2 20-40 T3 7 6 SS Damage to bark at base on southern side 1 Number R Recommended Works/ No works proposed Reason for Works: 180 C 1.2 10-20 Damage to bark at 0.8m on southern side 7 Young 12 2.2 Moderate Fair Medium T4 Sycamore 4 -4 3 3 SS Horse Chestnut Scale on stem and main scaffold 1 Number 4 branches Recommended Works/ No works proposed Purple variety Reason for Works: Crown appears sparse 10 Middle Aged 330 12 4.0 Normal Fair Medium C 1.2 20-40 Damage to bark on stem southern side - branch Maple, Norway **T5** 4 5 5 4 SS has tom out 1 Number a Horse Chestnut Scale on stem and main scaffold Recommended Works/ No works proposed branches. Reason for Works:

#### Notes:

- 1. Height describes the approximate height of the tree measured in meters from ground level.
- The Crown Spread refers to the crown radius in meters from the stem centre and is shown above on each of the four compass points (i.e. N, S, E, W).
- 3. Ground Clearance is the height in meters of crown clearance above adjacent ground level.

4. Stem Diameter is the diameter of the stem measured in millimeters at 1.5m from ground level for Single Stemmed (SS) trees or at ground level for Multi Stemmed (MS) trees. Stem Diameter may be estimated (est) where access is restricted or an average (ave) taken for groups of trees.

Protection Multiplier is 12 for single stemmed and 10 for multi-stemmed trees and is the number used to calculate the tree's protection radius and area.

- 5. Protection Radius is a radial distance measured from the trunk centre.
- 7. Growth Vitality Normal growth, Moderate (below normal), Poor (sparse/week). Dead (dead or dying tree).
- 8. Structural Condition Good (no or only minor defects), Fair (remediable defects), Poor Major defects present.
- 9. Landscape Contribution High (prominent landscape feature), Medium (visible in landscape),

Low (secluded/among other trees).

 B.S. Cat refers to (British Standard 5837:2005 Table 1) and refers to tree/group quality and value; 'A' -High, 'B' - Moderate, 'C' - Low, 'R' - Ramove.

 Sub Cat refers to the retention criteria values where 1 is Arboricultural, 2 is Landscape and 3 is Cultural including Conservational, Historic and Commemorative.

12. Useful Life is the tree's estimated remaining contribution in years.

Challice Consulting Ltd. Tel: 01306 743374

# Tree Survey and Recommended Tree Works Schedules

Page 2

#### Site: La Sainte Union School, Highgate Road, London NW5 1RP

# Surveyor: Mr. Andrew Pinchin

Date: 19th May 2009

Our Ref: CC/392 AR597

Tree No.	English Name	Height	Grown	Ground	Age Class	Stern Diameter	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landecape Contribution	B.S. Cat	Sub I Cat	Lite	Observations
T6	Maple, Variety 1 Number	9	4 3 2	5	Middle Aged	260 SS	12	3.1	Moderate	Fair	Medium	С	1,2	10-20	Dying branch on eastern side - diameter 100mm Sparse crown
Recomm Reaso	ended Works/ Crown n for Works:	n clean		Advisable † rboricultura	or good I practice								_		
T7	Maple, Variety 1 Number	10	4 4	5	Middle Aged	250 SS	12	3.0	Normal	Good	Medium	В	1,2 2	20-40	Minor cavities at 4m on southern tide associated with branch loss
Recomm	ended Works/ No works n for Works:	propose	d										_		M
T8	Robinia 1 Number	13	7 7	5	Mature	390 SS	12	4.7	Moderate	Fair	Medium	C	1,2 1	10-20	Deadwood to 25mm diameter Sparse crown
Recomm Reason	ended Works/ Crowr n for Works:	clann	a	Advisable f	or good Loractice										Some loose and dead bark at base southern side
Т9	Sycamore 1 Number	12	5 5 5	2	Middle Aged	350est MS	10	3.5	Normal	Poor	Medium	C	1,2	10-20	Fence embedded in sterns Bi-furcation at 1.2m with included bark
Recomm Reason	ended Works/ Ren n for Works:	nove	a	Advisable f	or good I practice								_		
G10	Lilac, Robinia, Ash and Sycamore Group 10 Number	9	1 1	2	Young	100ave SS	12	1.2	Normal	Poor	Low	С	1,2	10-20	Fence embedded in stems Trees of very poor quality with little future potential
Recomm Reason	ended Works/ Ren n for Works:	NOVE	a	Advisable f	or good I practice										

Notes:

Height describes the approximate height of the tree measured in meters from ground level.

The Crown Spread refers to the crown radius in meters from the stem centre and is shown above on each of the four compass points (i.e. N, S, E, W).

3. Ground Clearance is the height in meters of crown clearance above adjacent ground level.

4. Stem Diameter is the diameter of the stem measured in millimeters at 1.5m from ground level for Single Stemmed (SS) trees or at ground level for Multi Stemmed (MS) trees. Stem Diameter may be estimated (est) where access is restricted or an average (ave) taken for groups of trees.

Protection Multiplier is 12 for single stemmed and 10 for multi-stemmed trees and is the number used to calculate the tree's protection radius and area. 6. Protection Radius is a radial distance measured from the trunk centre.

Growth Vitality - Normal growth, Moderate (below normal), Poor (sparse/weak), Dead (dead or dying tree).
 Structural Condition - Good (no or only minor defects), Fair (remediable defects), Poor - Major defects

present.

Landscape Contribution - High (prominent landscape feature), Medium (visible in landscape).
 Low (secluded/among other trees).

 B.S. Cat refers to (British Standard 5837.2005 Table 1) and refers to tree/group quality and value; 'A' -High, 'B' - Moderate, 'C' - Low, 'R' - Remove.

 Sub Cat refers to the retention criteria values where 1 is Arboricultural, 2 is Landscape and 3 is Cultural including Conservational, Historic and Commemorative.

12. Useful Life is the tree's estimated remaining contribution in years.

Challice Consulting Ltd. Tel: 01306 743374

Date: 19th May 2009

# Tree Survey and Recommended Tree Works Schedules

Page 3

Site: La Sainte Union School, Highgate Road, London NW5 1RP

## Surveyor: Mr. Andrew Pinchin

Our Ref: CC/392 AR597

Tree No.	English Name	Height	Crown	Ground	Age Class	Stem	Protection Multiplier	Protection Radius	Growth Vitality	Structural Condition	Landscape Contribution	B.S. Cat	Sub Cat	Useful Life	Observations
G11	Sycamore Group 2 Number	17	5 3 7	4	Mature	660ave SS	12	7,9	Normal	Poor	Medium	C	1,2	20-40	Two trees growing as a pair with a common crown Heavily reduced - poor structures
Recomme	onded Works/ No work:	propose	d												building approximately 2.5m to east

Total Trees 21

Notes:

1. Height describes the approximate height of the tree measured in meters from ground level.

The Crown Spread refers to the crown radius in meters from the stem centre and is shown above on each of the four compass points (i.e. N, S, E, W).

3. Ground Clearance is the height in meters of crown clearance above adjacent ground level.

4. Stem Diameter is the diameter of the stem measured in millimeters at 1.5m from ground level for Single Stemmed (SS) trees or at ground level for Multi Stemmed (MS) trees. Stem Diameter may be estimated (est) where access is restricted or an average (ave) taken for groups of trees.

Protection Multiplier is 12 for single stemmed and 10 for multi-stemmed trees and is the number used to calculate the tree's protection radius and area. 6. Protection Radius is a radial distance measured from the trunk centre.

7. Growth Vitality - Normal growth, Moderate (below normal), Poor (sparse/weak), Dead (dead or dying tree).

 Structural Condition - Good (no or only minor defects), Fair (remediable defects), Poor - Major defects present.

 Landscape Contribution - High (prominent landscape feature), Medium (visible in landscape), Low (secluded/among other trees).

10. B.S. Cat refers to (British Standard 5837:2005 Table 1) and refers to tree/group quality and value; 'A' -High, 'B' - Moderate, 'C' - Low, 'R' - Remove.

 Sub Cat refers to the retention criteria values where 1 is Arboricultural, 2 is Landscape and 3 is Cultural including Conservational, Historic and Commemorative.

12. Useful Life is the tree's estimated remaining contribution in years.

Table 1 --- Cascade chart for tree quality assessment

TREES FOR REMOVAL								
Category and definition	Criteria							
<b>Category R</b> Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management	<ul> <li>Trees that have a serious, irremincluding those that will become u loss of companion shelter cannot t</li> <li>Trees that are dead or are show</li> <li>Trees infected with pathogens or or very low quality trees suppress</li> <li>NOTE Habitat reinstatement may b tree).</li> </ul>	DARK RED						
Category and definition	FOR RETENTION							
CAREBOLA AND DEDRIFTON	Criteria — Subcategories           1 Mainly arboricultural values         2 Mainly landscape values         3 Mainly cultural values, including conservation							
Category A Those of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested)	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)	Trees, groups or woodlands of a significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN				
Category B Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits	MID BLUE				
Category C Those of low quality and value: currently in adequate condition to remain until new	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits	GREY				
planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm	NOTE Whilst C category trees will u development, young trees with a ster	NOTE Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm should be considered for relocation.						

٠

1

١

6

Appendix 3

٢Ť

•





Appendix 4

# Challice Consulting Ltd. Tree Protective Fencing Specification

# 1. Heras Fencing

ì

Heras fencing describes the 2.4m galvanised steel mesh panelled fencing with pre-cast bases.

For extra stability, scaffold poles are to be attached at a 45-degree angle on the 'tree side' of the fencing and fixed into the ground by further scaffold poles firmed into the soil.

The quantity of extra support scaffolds will be no less than two per panel.



Example of Protective Barrier from British Standard 5837:2005



**Example of Heras Fencing** 

# 2. 2.4m Hoarding

- 3.0m 100 x 100mm square wooden posts.
- 3 x 38 x 87mm wooden rails affixed to posts.
- 2.4m x 1200 outside board panels (12-15mm) affixed to rails.
- 50 x 100mm angled supporting struts affixed internally (quantity as required).

Supporting posts fixed into position using concrete.

All post holes to be hand excavated.

Post holes to be no larger than 300 x 300mm.



Example of Hoarding



	·	
Appendix 5		

.

.

Site: Inspected By: Client:	Sample D. Challice The Builder	Date of Inspection:	18/07/2007
Tree Prote Tree protection Comments/Ac No action at thi Agreed Co No debris withi	ctive Fencing in in correct location is time	10. The of hispersen.	
Comments/Ac No action at th	tion is time	Tree protection T	23
Amendment No amendmen	ts to Documentation Requits required	uired	
Comments/Ac	tion		
Remedial Works		Statement Tree protection T	14
General Cor No ground pro Sweet Gum T1	nments tection in place for T11,12,14,17 not removed	7 & 22	



# Hand Digging in Root Protection Areas



# Introduction

1 . P.

- Trees need roots to stay upright and to obtain water and nutrients from. the soil.
- Any excavation within the Root Protection Area of a tree may affect its stability and health.
- Most tree roots are within 600mm of the soil surface.
- Even small roots (under 5mm in diameter) are important to trees.
   Cutting many small roots may have an impact on tree health.
- Hand digging is less likely to damage tree roots than digging with machinery.
- All digging within the Root Protection Areas of trees should be supervised by an arboriculturalist.
- Whether digging is acceptable and how it should be carried out depends on tree species and characteristics (age, vigour, past management etc.).
- Site conditions are also important when deciding whether digging is acceptable (soil type, ground levels, existing structures etc.).
- Carry out a suitable risk assessment prior to starting work. In particular, take care when working in the vicinity of underground services.

Challice Consulting Ltd. 2009

# Why/What For?

1.11

- Service installation/maintenance.
- Demolition.
- Foundations.
- Hard surface installations.
- Decay detection.

# **Relevant Documents**

- British Standard 5837 2005: Trees in Relation to Construction Recommendations.
- National Joint Utilities Group Volume 4 2007: Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2) – Operatives Handbook.

# Principles

The key principles are as follows:

- Avoid compaction of the soil when carrying out the works.
- Sever as few roots as possible.
- Be aware that roots over 25mm in diameter are likely to be of particular structural significance.
- Do not leave damaged or poorly cut roots as these are likely to lead to decay in the future.
- Do not let exposed roots dry out.
- Do not use materials containing harmful chemicals or salt as these will harm the trees (including builders' sand).

# How/What to Use?

- Hand tools fork, spade, and trowel.
- Air spade This uses a high pressure jet of air, delivered from a compressor to a hand held lance, to remove soil (see photographs below).



- Brush It is useful to brush away loose soil from exposed roots prior to cutting them.
- Secateurs/sharp pull-saw Roots that need to be cut must be cut cleanly using suitable hand tools.
- Damp Hessian sacking This is effective in preventing roots drying out following excavation.
- Suitable back-fill Topsoil or un-compacted sharp sand are suitable.
- Supervision A suitably qualified and experienced arboriculturalist should be present when the works are carried out.

# **Incomplete Reasons Schedule**

 Application Ref: 2009/4919/INVALID
 Address
 La Sante Union School, Highgate Road, London, NW5 1RP

 Associated Ref:
 Address
 La Sante Union School, Highgate Road, London, NW5 1RP

Please review the items listed here as reasons for your application being incomplete.

It will assist with the checking of your new information if you can complete and return this sheet with your information, indicating what incomplete reasons have been addressed. Where you have not fully met the requirement or do not believe the information is necessary, please use the space provided to give reasons you believe should be taken into account.

Invalid Reason		Comments or reason if not included	
A method statement is required for the dismantling and rebuilding of the wall, demonstrating what works will be undertaken to strengthen the wall.	$\mathbf{+}$		Â
An engineers report is required demonstrating the problems with the current wall.	Y	_	
What does annotation E-J mean on proposed drawing.			
Will the existing bricks be re used.			
You are required to submit a application for planning permission form. All application forms are available on our website or you can obtain a copy by contacting the Customer Support Team	Y		