22 LANCASTER GROVE, LONDON NW3 4PB

ARBORICULTURAL METHOD STATEMENT

Date 17 September 2015

Our Ref: JKK8117

RPS
Noble House
Capital Drive
Linford Wood
Milton Keynes
MK14 6QP

Tel: 01908 302 691
Fax: 01908 669 899
Email: wallisb@rpsgroup.com

QUALITY MANAGEMENT

Prepared by:	**Brian Wallis – Technical Director**
Authorised by:	**Brian Wallis – Technical Director**
Date:	**17th September 2015**
Project Number/Document Reference:	**JKK8117 – 22 Lancaster Grove，Arboricultural Method Statement RevB**

CONTENTS

EXECUTIVE SUMMARY

RPS was commissioned by KAS Architecture and Interior Design Ltd to prepare an Arboricultural Method Statement and accompanying Tree Protection Plan in relation to proposed development of land at the 22 Lancaster Grove, London, NW3 4PB..

The Arboricultural Method Statement and Tree Protection Plan were produced following a Tree Survey carried out by RPS in December 2013. It is not known if any works to trees have occurred since this time and it is assumed that all trees and tree groups are as described in the Arboricultural Impact Assessment Report.

All current documents are in accordance with the requirements set out in BS5837: 2012 'Trees in relation to design, demolition and construction – Recommendations'.

A Tree Protection Plan Figure 03.01 has been prepared by RPS utilising the surveyed information compiled within the tree survey and the layout plans provided by the client.

Construction activities have the potential to disturb the root system and damage tree canopies and the during construction phase the trees must be monitored and carefully managed in accordance with the checklist in the appendix of this document. The trees identified as not being able to be retained are detailed on the Tree Retention and Removals Plan Figure 02.01 and the Tree Works Table in Appendix 1.

Any tree works should to be in accordance with BS 5837:2012 'Trees in relation to design, demolition and construction', BS 3998:2010 'Recommendations for Tree Work' (copies can be obtained from BSI Tel: 020 8996 7400 www.bsi.global.com) and The Arboricultural Association Guidance Note 8: Standard Conditions of Contract and Specification (2009) (copies can be obtained from the AA Tel: 01242 522152, www.trees.org.uk).

1 INTRODUCTION

1.1 RPS was commissioned by KAS Architecture and Interior Design Limited to prepare an Arboricultural Method Statement and accompanying Tree Protection Plan in relation to proposed development at 22 Lancaster Grove, London.

1.2 This report was informed by a tree survey produced by RPS in December 2013. The statement will expand on the Arboricultural Impact Assessment previously produced and to consider the final proposed layout plans for the development.

1.3 Details of trees located on and adjacent to the site have been provided in the Arboricultural Impact Assessment and this document should be read in conjunction with this statement.

1.4 The purpose of this report is to:

- Assess the proposed tree removal required to achieve the proposed development and make recommendations for mitigation where appropriate.
- Assess to what extent the proposed development will impact upon the health and vitality of the retained trees on site and make recommendations for mitigation where appropriate.
- Specify measures for the protection of trees throughout development of the site and identify any necessary predevelopment tree works. Provide additional arboricultural information and advice in relation to the protection of trees throughout the development of the site.
- Provide a Tree Protection Plan to detail the proposed protective measures to be taken in respect of the trees during development of the site.

1.5 The Tree Retention and Removal Plan Figures 02.01 identifies the following:

- Trees to be removed and those retained due to the proposed development

1.6 The Tree Protection Plan Figures 03.01 identifies the following:

- Alignment and design of protective fence;
- Detail any additional tree impacts

1.7 The Arboricultural Method Statement should be made available to all relevant site operatives prior to and throughout the demolition and construction process, so they understand the scope and importance of the tree protection measures.

1.8 This statement was produced by Brian Wallis, Chartered Forester, Chartered Environmentalist, Fellow of the Arboricultural Association and Member of the Landscape Institute of RPS Group PLC.

1.9 Documents used in the production of this statement were:

8117 R 050314 BW 22 Lancaster Grove Arboricultural Impact Assessment, Report (RPS – March 2014)

8117 D 050314 BW 22 Lancaster Grove Tree Constraints Plan, Plan (RPS – March 2014)

8117 D 110214 BW 22 Lancaster Grove Tree Retention and Removal Plan, Plan (RPS – February 2014)

22 Lancaster Grove Proposed P7 RevB.dwg (KAS – August 2015)

1586(f1) – Tree Radar Report.pdf (Duramen Consulting Ltd) September 2015

2 CONSTRUCTION REQUIREMENTS

2.1 The development of 22 Lancaster Grove will require the demolition of structures and hard surfaces. It will then require the construction of up graded road access points with associated hard surfaces and construction of the new buildings, including basement excavations, and associated hard and soft landscape features.

2.2 The removal of some of the current vegetation will be required. This will be used to create a new formal landscape to the road frontage. Retained trees and shrubs will be used to create a high quality environment for the residents both within and adjacent to the development.

2.3 It is intended to carry out development throughout the site, providing new residential accommodation. This will be achieved by the removal/demolition of the current structures and hard surfaces.

2.4 Access will be required for equipment to:

- Demolition of existing structures and hard surfaces
- Excavate the basement sections
- Construction of the buildings and structures
- Installation of services and utilities
- Foundation construction will be required including piled foundations
- Access for scaffolding to be erected
- Installation of boundary structures
- Installation of access points
- Development of new landscape features

2.5 The construction process will need to be monitored during its progress and this Arboricultural Method Statement should be used as the document provided to guide the construction process.

2.6 During the development of the site tree protection will need to be considered for retained trees and this will form part of the Arboricultural Method Statement. All potential pruning works have been identified within the statement (Table 1 indicates trees that may require pruning). Final tree pruning specifications should be provided by a qualified arboriculturalist and completed prior to start of demolition work. A specification to pruning works is provided on the Tree Protection Plan Figure 03.01.

2.7 The following sections detail the below and above ground constraints concerning trees that will be encountered during the demolition and construction process at 22 Lancaster Grove, London.

3 BELOW GROUND CONSTRAINTS

3.1 Tree roots require moisture and nutrients to grow successfully, if these are not available then they will not be able to colonise the area surrounding the main stem. The tree will form a root system and exploit any water and nutrient resources that are available to them. Roots do not form in hostile environments and the tree will adapt its size and shape if any of these items are in limited supply.

3.2 The older trees within the site have been able to establish themselves and have achieved what should be considered a maximum size for their species and location.

3.3 All proposed development activities that could directly affect the roots within the site have been considered. Construction method statements should be fully specified before any works adjacent to trees are carried out.

3.4 To establish a clearer assessment of the rooting morphology in relation to existing trees a detailed ground radar assessment has been carried out by Duramen Consulting Limited. The main points from this survey are that few roots occupy the top 50cms of soil, roots diminish in density and size as you move away from the base of the tree and that the concrete slab located to the east of T6 and T8 may have acted as a root barrier.

3.5 The basement excavations have been designed to impact into the area that has currently been occupied by existing foundations/ built structures and of limited rooting distribution. The basement does impact into a section of the RPA of T8, however the tree ground radar report indicates roots being few in this area due to the existing concrete strip. This are will have the concrete strip removed and there will be a section of soil above the basement forming a section of 1.2m depth, this will allow for tree rooting beyond the construction phase and section 7.6 in BS5837:2012 indicates that this is acceptable as it does not remove the rootable area for the tree. In this case it improves the rooting area.

3.6 Where they are likely to be adjacent to the rootable area supervision by a qualified arboriculturalist should be considered. The specifications for works adjacent to trees should be a combination of current best practice and relevant British Standards relating to demolition and construction adjacent to trees.

3.7 Particular reference should be made to the use of piled foundations within the site. The tree ground radar report can be used by the engineers in the design stage to ensure that the major root mass identified are respected. Technical specification should be provided by the engineers designing the appropriate foundations and this needs to be agreed by the Local Planning Authority prior to installation. An installation methodology should accompany the technical specification detailing where and how the piling rig will work within the site.

4 ABOVE GROUND CONSTRAINTS

4.1 The above ground constraints that trees provide are largely concerned with their mass (crown and main stem) and these constraints are usually abated by pruning or removal. Pruning is used to allow access and prevent damage to the tree in a site development. Removal is considered when the tree is in a poor condition and would fail in a reasonable time scale or the development could not be achieved with the tree in its current position and its removal is agreed as part of the planning application. The trees assessed as part of this application will be discussed below and their above ground constraints identified.

4.2 The trees material to the planning application are located to the boundaries of the site and adjacent to the development area.

4.3 A schedule of trees needing to be considered for access pruning has been provided within Table 1 of this statement. The specification for the required pruning should be compiled once the felling works have been completed and the tree protection fencing has been erected in accordance with the Tree Protection Plans provided. If pruning is required to erect the fencing this should be carried out with the agreement of the site manager and arboricultural specialist. The pruning requirement should also allow access for site vehicles and works equipment to be used adjacent to tree protection fencing and ensure no physical damage to the crowns during demolition and construction occurs.

4.4 The building has been designed to also allow for the existing trees form and size to fit the proposed structure and co-exist together.

4.5 All crown pruning works should be carried out to the specifications contained within BS3998:2010 Tree Work – Recommendations. They should be carried out sensitively and maintain or improve the crowns balance and form for each individual tree.

5 ANALYSIS OF CONSTRAINTS

5.1 The constraints that have been identified above are the ones that apply to the trees found at the area associated with the development at 22 Lancaster Grove, London.

5.2 The above ground constraints will require professional arboricultural management and specification. Crown lifting and pruning will be required to accommodate some of the fencing and construction process.

5.3 Beyond the construction period a programme of regular tree work to reduce the deadwood and control the crown extents will provide adequate management in the future. It would also allow the trees to have their crowns and main stems inspected by the arborist, which would identify structural issues early and reduce the likelihood of major crown failures. This will be the responsibility of the individual tree owners.

5.4 The below ground constraints will be offset by engineered foundation design and site management during construction. Respect to the current RPA's within the designed layout and supervision through the construction periods will enable all arboricultural impacts to be fully considered.

5.5 The Arboricultural impacts are detailed below and considered specifically for the site and the proposed development.

6 ARBORICULTURAL IMPACT ASSESSMENT

Introduction

6.1 Trees have finite energy reserves, developed each year throughout the growing season, which are utilised for biological processes such as growth and defence against pests or diseases throughout the following year.

6.2 Any development in proximity to trees has the potential to cause harm to those trees unless control measures are identified and acted upon; as such it is essential to consider the relationship between the proposed development and the retained trees to identify what precautions are necessary, proportionate and appropriate.

6.3 Development has the potential to impact upon the above ground and below ground parts of trees.

6.4 Whilst some damage that can occur, such as physical damage to the trees stems and branches from machinery movements, is clearly visible the impact from other aspects of work common on development sites which can have a significant effect upon the continued health of trees are not always immediately evident.

6.5 Damage that is not immediately evident but which can cause long term harm to retained trees includes things such as damage to the soil structure by compaction causing root damage and levels changes altering the water table and affecting moisture availability.

6.6 To minimise the potential for harm to occur to retained trees all works should be carried out with regard to the Tree Protection Measures detailed within this report.

6.7 In general it can be seen that, by adopting appropriate methods of working, precautionary and protective measures, significant harm to retained trees can be avoided.

6.8 In particular the establishment of a Construction Exclusion Zone (CEZ) by erection of Tree Protection Fencing will minimise the potential for harm to occur to retained trees.

Brief Description of Proposed Development

6.9 The proposed development to the site is the demolition of existing structures and the construction of a new residential property and associated external works, including hard and soft landscaping.

Tree Removal

6.10 Six trees have been identified on plans as requiring to be removed to achieve the proposed development are shown on the Tree Retention and Removal Plan – Figures 02.01. The majority the trees required for removal are category C trees (4 – T1, T14, T17 & T18) with the remaining being (2 – T2 & T5) category B.

6.11 C category trees are of a temporary amenity value and their removal should not be seen as a constraint to development according to BS5837:2012.

6.12 The loss of any tree should be considered in the landscape proposals submitted with the planning application.

Arboricultural Implications

6.13 To ensure that the trees selected for retention can be successfully integrated within the proposed development the following factors have been considered or require consideration.

Root Protection Areas

6.14 Root Protection Areas for each tree surveyed have been determined in accordance with BS5837:2012 Section 4.6 Root protection area (RPA) in the Standard.

6.15 Initial Root Protection Areas for the trees were plotted onto the Tree Constraints Plans found in the Arboricultural Impact Assessment Report for 22 Lancaster Grove, London - RPS and illustrate on the Tree Constraints Plan that formed part of the report, this has been used in the development design work and has been used to produce all relevant tree plans in this statement.

6.16 The existing built structure and hard surfaces have been constructed within the RPA as plotted on the Tree Constraints Plan and the conditions for root establishment considered. Due to the size, form and strip foundations of the existing building it is clear that this area will not contain substantial root development and has been identified as such.

6.17 A small part of the basement excavations will encroach into the RPA (4% of area), thisis the area where root restrictions were established by the tree ground radar report (Duramen Consulting Limited). Therefore this will have minimal impacts and although unfortunate should have little significance on the health of the existing tree. An area of soil (1.2m deep) will be established above the roof in this part of the basement area so, in fact, improved rooting should be available for the trees.

Existing Canopy Spreads

6.18 Where the Root Protection Areas for retained trees do not extend to the edge of existing canopy spreads it is possible that those parts of the trees extending beyond the RPA fencing may sustain damage during construction.

6.19 To minimise the potential for harm to occur to retained vegetation a Construction Exclusion Zone (CEZ) will be created, by the erection of protective fencing as detailed on the Tree Protection Plans (Figure 03.01). Where canopies extend beyond the tree protection fencing the tree has been identified in the Table 1 - Works Required as being considered for access pruning or crown lifting to ensure the safe erection of tree protection fencing and damage from construction activities.

Level Changes

6.20 The effect of level changes across the site will need to be assessed prior to the start of any works. This will prevent harm occurring to retained trees due to level changes. When this occurs within the Construction Exclusion Zone (CEZ) works should be identified and discussed with the Local Authority Tree Officer prior to commencement.

6.21 It may be necessary to install retaining structures where levels are to be altered to ensure that the original ground level within the CEZ can be maintained.

Building Foundations

6.22 Any structures built on the site should comply with the foundation depths for buildings near or adjacent to trees and allow for the potential size of the trees at maturity. The soil types throughout the site will need investigating and appropriate measures taken.

6.23 Appropriate foundation designs should be adopted.

6.24 If trees are removed across the site the potential for soil heave should be assessed and foundations designed accordingly. (NHBC Chapter 4.2, 2007)

6.25 Part of the site within the recognised RPA will be developed using a suspended floor design using piles to achieve the construction. Pile positions should be considered prior to construction using the information provided within the tree ground radar report regarding root mass and position. The construction methodology should be presented in a Construction Method Statement provided by the main contractor and should consider the issues highlighted in this statement and this statement should be referenced in the method statement.

Service Runs

6.26 All service runs, utilities and similar infrastructure should take note of trees and allow for working methods that will minimise damage to trees by referring to documents such as NJUG Volume 4 - Guidelines for the planning, installation and maintenance of utility services in proximity to trees. (National Joint Utilities Group 2007).

6.27 Existing service infrastructure can be used to reduce potential impacts and it is unlikely that there will be any need to encroach into the CEZ. Final confirmation of this should be presented to the Local Authority prior to the construction phase.

7 PRE DEVELOPMENT WORKS

Tree Removal

7.1 The tree indicated as to be removed within the boundaries of the development on the Tree Retention and Removal Plan (Figure 02.01) should be felled prior to commencement of development. The stumps will be removed or 'ground out' as part of the pre commencement works.

Predevelopment Tree Pruning Works

7.2 The specified tree pruning works (Table 1) should be undertaken prior to commencement of the proposed development.

Standard of Work

7.3 All tree works should be carried out in accordance with BS3998:2010 Tree Work - Recommendations and latest arboricultural best practice.

7.4 All tree work should be carried out by suitably qualified, competent and insured arboricultural contractors.

7.5 All green and woody waste generated by the tree works shall be removed from site and disposed of in an environmentally sustainable manner.

Timing of Works

7.6 All tree works shall be completed prior to commencement of any construction works on the site.

7.7 All works shall be timed to have regard to the phenological cycles of protected species that are associated with trees; notably birds and bats.

Tree Protection Barriers

7.8 Prior to the commencement of any further site works the protective barriers are to be erected in accordance with the locations set out on the Figures 03.01 - Tree Protection Plan.

7.9 Once the protective barriers are in place they must remain in situ throughout the course of the development until the completion of each phase of the works (Demolition, Basement Excavations and above ground Construction).

7.10 Copies of the Tree Protection Plans shall be placed in the site office for reference by all site staff.

7.11 The protective fencing barrier is to be constructed in accordance with the specification detailed at Appendix 4.

7.12 Signs detailing the purpose of the protective fencing shall be attached to the fencing at 10m intervals. Such signs should be weatherproof and shall be substantially in the form of the specimen provided at Appendix 6. Signs must be replaced as necessary should they be removed or become illegible.

7.13 Following erection of the protective fencing and prior to commencement of the development it is recommended that an inspection of the site, by either the Council's Tree Officer or the Arboricultural Consultant, is arranged to confirm fencing has been installed in accordance with the Tree Protection Plan and any relevant conditions that may be attached to a grant of planning consent for the development.

8 TREE PROTECTION MEASURES

Construction Exclusion Zone

8.1 The Construction Exclusion Zone (CEZ) as defined by the protective fence line shall be regarded as sacrosanct, and the protective fencing shall not be moved or taken down at any time during each phase of the works.

8.2 Within the Construction Exclusion Zone there must be No mechanical digging or scraping, No alteration to existing ground levels including soil stripping, No earthworks, No handling or discharge of any chemical substance, concrete washings or of any fuels.

8.3 Furthermore vehicular or pedestrian access and the storage of any materials is prohibited within the Construction Exclusion Zone.

8.4 Additionally no materials that may contaminate the soil such as concrete mixings, diesel oil and vehicle washings shall be discharged within 10m of the stem of any tree and no fires shall be lit within 10m of the maximum extent of a trees crown.

Site Compounds and Materials Stores

8.5 Activities related to the establishment of a temporary site storage have the potential to impact upon retained trees by various means. In particular the storage and mixing of chemicals and materials such as concrete can have a damaging effect on tree health if precautions are not taken.

8.6 To prevent harm occurring to trees provision for materials storage, site offices, deliveries and other related activities should be made available in areas away from retained trees.

8.7 The offices, parking of site and contractor vehicles, along with secure storage will be provided in areas away from retained trees.

Monitoring

8.8 Following erection of the protective fencing and prior to commencement of the development an inspection of the site, by either the Council's Tree Officer or the Arboricultural Consultant, should be arranged to confirm fencing has been installed in accordance with the Tree Protection Plan and any relevant conditions that may be attached to a grant of planning consent for the development.

8.9 Further monitoring visits shall be carried out following implementation of the works on site, ideally on at least a monthly basis.

Reporting

8.10 Should any arboricultural issues become apparent during the works the site manager should immediately contact the Arboricultural Consultant or the Council's Tree Officer for advice upon how to proceed.

8.11 The monitoring of the tree protection fencing should be recorded and any issues reported so that any remedial action can be taken by the main contractor as soon as possible.

8.12 An example reporting form is provided within this statement as Appendix 5 – Arboricultural site register (Example Template).

9 CONCLUSIONS

9.1 The development of 22 Lancaster Grove, London will require the removal of a small number of the trees currently located on the site. These removals have been identified and the trees identified for removal are in the majority of limited amenity value (C category retention values when considered within BS5837:2012).

9.2 Retained trees will need to be protected and considered during the development processes, particularly the demolition and construction phases. This statement provides information and identifies areas were these processes will impact on the retained trees and provides guidance as to the tree protection measures that will be required.

9.3 All works adjacent to retained trees should be carried out with sensitivity to the wellbeing of the trees and be supervised to ensure that any possible damage to the above and below ground parts of the tree are avoided and where impacts cannot be mitigated for then appropriate action is taken to minimise these impacts.

9.4 All site staff should be made aware of the requirements of this statement and the importance of trees within the development.

9.5 Sensitive target pruning to lift the canopies of existing trees (Table 1 Tree Work Requirements) within the site will reduce/eliminate above ground constraints and provide a sensible working area for the construction of the development.

9.6 The section below details an Arboricultural Checklist that should be used to ensure that all tree issues are considered throughout the construction process.

9.7 Guidelines contained within BS 5837:2012 Trees in Relation to Design, Demolition and Construction should be followed when dealing with trees. Working methods and specifications should be followed to limit potential damage to trees throughout the construction period.

9.8 The specific measures for the protection of the retained trees throughout development specified within this report shall be followed throughout the course of the development.

10 ARBORICULTURAL CHECKLIST

Ref	*Work Activity*	*Schedule of Works*	*Refer*	*Recommendations*
General site works and tree related operations				
01	Pre-start site meeting	Pre-start site meeting with LPA tree officer, site manager, client representative and consultant arboriculture (CA) to agree scope of any works, where required.		
02	Protect trees to be retained	Barriers should be fit for the purpose of excluding construction activity, and should remain rigid and complete. Barriers are to be located in accordance with RPS Tree Protection Plans.	BS 5837:2012 Trees in relation to design, demolition and construction: Figure 2 & 3 RPS Tree Protection Plan Figure 3	Ongoing monitoring by appointed person
03	Protective fencing to be inspected by LPA (if required)	Site manager to give LPA at least 2 working days notice of the erection of the temporary protective fencing.		Appointed person to contact LPA prior to completion of fencing.
04	Maintain the temporary protective fencing	CA to ensure the temporary protective fencing is maintained throughout the entire construction period and record any breach of the tree protection.	BS 5837:2012 Trees in relation to design, demolition and construction Fig:2 & 3 RPS Tree Protection Plan Figure 3	Appointed person responsible for arboricultural protection measures shall monitor fencing **monthly**, recording details
05	Removal of Trees and their arisings	Removal of all trees identified Figure 2 – Tree Retention and Removal Plan, plus arisings off site unless instructed otherwise by the CA. Fires are NOT permitted on the site	Arboricultural Association Standard Conditions Of Contract And Specifications For Tree Works (2008) Edition BS 3998:2010 Tree Work	Ongoing monitoring by appointed person

Ref	*Work Activity*	*Schedule of Works*	*Refer*	*Recommendations*
Specific tree and construction works				
06	Removal of deadwood / hanging deadwood	Removal of dead, dying or diseased branch wood, broken branches, or stubs left from previous tree surgery operations together with unwanted objects such as fungal fruit bodies, ivy and / or other climbing plants, nails, redundant cable bracing and wind-blown rubbish from the tree and any such debris from any cavities within the tree.	Arboricultural Association Standard Conditions Of Contract And Specifications For Tree Works (2008) Edition BS 3998:2010 Tree Work	All tree work should be carried out by a suitably tree qualified tree surgeon, preferably an Arboricultural Association approved contractor.
07	Crown lifting (if required)	Removal of all soft growth and branches or parts thereof which are below or which extend below 4.5 – 5.0m from ground level.	Arboricultural Association Standard Conditions Of Contract And Specifications For Tree Works (2008) Edition BS 3998:2010 Tree Work	All tree work should be carried out by a suitably tree qualified tree surgeon, preferably an Arboricultural Association approved contractor.
08	Works within the Root Protection Area (RPA) (where required)	Adopt hand dig methods for reducing levels to avoid damage to roots. Where limited root pruning is unavoidable it should be made at a suitable place within the root system, avoiding damage to surrounding tissue. Final pruning cuts shall be made at right angles to the axis of the root. The final cut wound should be smooth and as small as possible, free from ragged torn ends. Where root pruning is required to roots over 25mm in diameter, works should be overseen by a suitably qualified Arboriculturalist. Any root pruning should be completed in accordance with BS 3998:2010. Assessment report produced for the client.	Arboricultural Association Standard Conditions Of Contract And Specifications For Tree Works (2008) Edition BS 3998:2010 Tree Work APN 12 ‘Through the Trees to Development’ RPS Tree Protection Plan Figure 3	All tree work should be carried out by a suitably tree qualified tree surgeon, preferably an Arboricultural Association approved contractor.

Ref	Work Activity	Schedule of Works	Refer	Recommendations
09	Works within the Root Protection Area (RPA) (if required)	General fencing works should seek to minimise damage to tree roots and the tree canopy. Fencing should be aligned to avoid damage caused by fence post excavations, and to avoid unnecessary branch pruning.	BS 5837:2012 Trees in relation to design, demolition and construction: Section 7 RPS Tree Protection Plan Figure 3	
10	Works within the Root Protection Area (RPA)	No hard surface removal within the Root Protection Area (RPA) shall occur without arboricultural supervision. Tree protection measures will remain in place until work commences. The initial 'breaking out' of hard surfaces shall be carried out by low impact hand held pneumatic tools. Removal of the surface shall occur in strips working from the undisturbed surface, working in a retreating manner away from the retained trees. This will enable any roots exposed to be covered with a good quality top soil to avoid desiccation as the operation progresses and avoid the need for excessive travel on exposed ground. Lightly break up compacted surface with hand tools to aid water penetration. Subsequent removal of arisings / debris shall also be carried out by hand. No reduction in levels of the underlying soil surface shall occur.	BS 5837:2012 Trees in relation to design, demolition and construction: Section 7 RPS Tree Protection Plan Figure 3	Ongoing monitoring by appointed person
11	Works within the RPA	All existing soft surfaces within retained RPA areas shall be protected from further compact via suitable ground protection. The use of scaffold boards laid over compression resistant materials such as woodchip should be explored.	BS 5837:2012 Trees in relation to design, demolition and construction: Section 6.2.3.3	Ongoing monitoring by appointed person
12	New surfacing works with Root Protection Areas (RPA)	All proposed surfaces within RPA areas shall be completed in a 'no dig' style, where existing soil levels are retained and no positive soil excavation shall occur at all. New surfacing works shall look to reuse existing	BS 5837:2012 Trees in relation to design, demolition and construction: Section 7 Tree Work APN 12 'Through the Trees to Development' RPS Tree Protection Plan Figure 3	Engagement of a engineer will be required

Ref	Work Activity	Schedule of Works	Refer	Recommendations
		hard surfaces and their sub-base layers within the new construction. Where existing surfaces do not exist the use of suitable permeable, load distribution systems shall be employed such as 'Cellweb' (or similar and equal system)		
13	Works within the Root Protection Area (RPA)	The underlying soil shall be levelled by the addition of good quality top soil to BS3882:2007 (typically 150mm depth maximum). Hand tools only shall be used for any levelling works which will not disturb the underlying soil.	BS3882:2007 - The British Standard for Topsoil	Ongoing monitoring by appointed person
14	Soft landscape works within the Root Protection Area (RPA) (Where required)	Heavy mechanical soil cultivation techniques are not to be carried out within the RPA. Any cultivation should be carried out by hand or pedestrian controlled light machinery to minimise damage to tree roots. Existing ground levels within the RPA should be maintained.	BS 5837:2012 Trees in relation to design, demolition and construction: Section 8 RPS Tree Protection Plan Figure3	

APPENDIX 1

Tree Works

Tree Felling Requirements –

All removals should be cross referenced to the Tree Retention and Removals Plan – Figure 02.01

Tree Pruning Works

(All pruning works to be specified at the time of Tree Protection Fencing erection by Consultant Arboriculturalist).

Individual Trees

T3, T4, T10, T13, T16 & T17

APPENDIX 2

Tree Retention and Removals Plan

Figure 2

APPENDIX 3

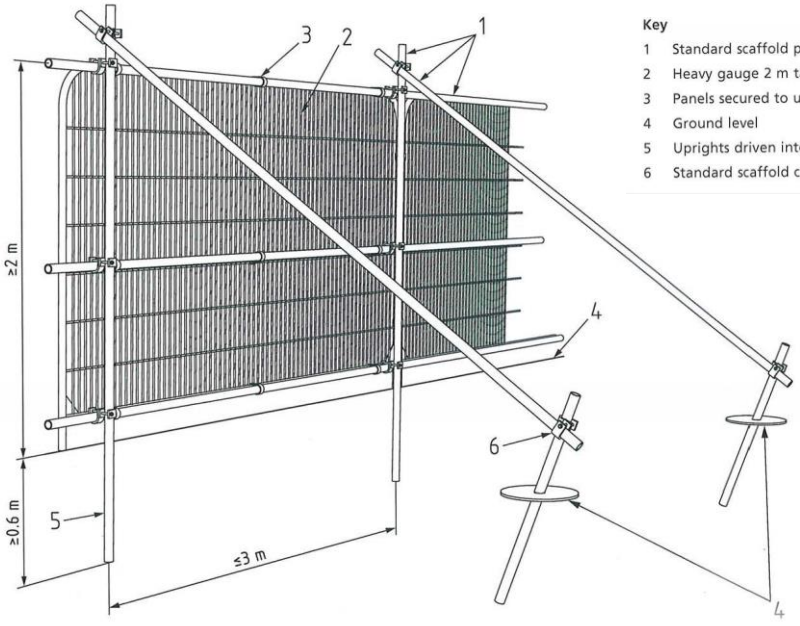
Tree Protection Plan

Figure 3

APPENDIX 4

Example Tree Protection Barrier (BS5837:2012 Fig 2 & 3)

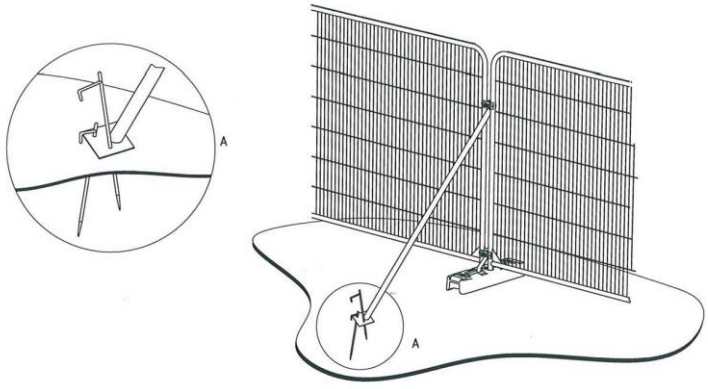
Figure 2 **Default specification for protective barrier**



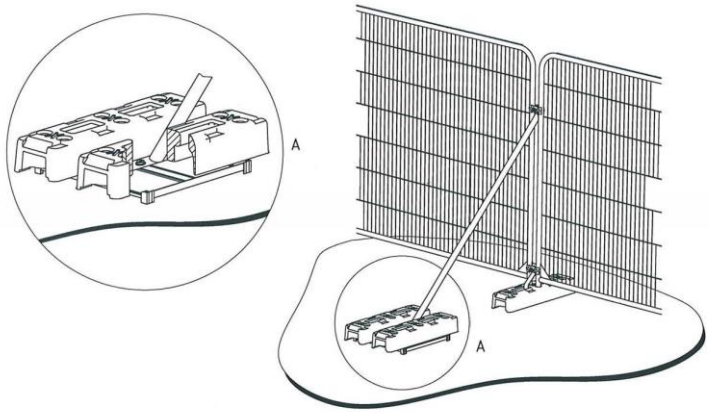
Key

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

Figure 3 **Examples of above-ground stabilizing systems**



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

APPENDIX 5

Arboricultural site register

(Example template only)

ARBORICULTURAL SITE REPORT

PROJECT: *XXX, XX Street, XXX Town*	**SITE CONTACT:** *Mr XXX*	**REPORT NO:** *001*
INSPECTION COMPLETED BY: *Mr XXX*	**DATE AND TIME:** *XXX*	**SHEET:** *X OF X*

ITEM	**LOCATION**	**NOTES / RECOMMENDATIONS**	**ACTION**
1	*E.g. Adjacent to T999, north of building*	*E.g. Damaged fence, materials spilled into RPA, further inspection requirements, damage to tree*	*E.g. Reinstate fencing, make good levels with topsoil*
2			
3			

CIRCULATION:
Mr XXX
Mr XXX

APPENDIX 6

Construction Exclusion Zone (CEZ) Signage

PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

TREE PROTECTION AREA

KEEP OUT !

(TOWN & COUNTRY PLANNING ACT 1990)

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.

CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

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