



Arboricultural Impact Assessment and method statement

Parkhurst Gardens
The former Territorial Army Site
65-69 Parkhurst Road
London
N7 0LP

Client: Parkhurst Road Ltd



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June 2014

Our reference DFCEP 3057

Executive Summary:

This report is in connection with a planning application for new development at the former Territorial Army Centre, 65-69 Parkhurst Road, London. I have provided all information in accordance with the British Standard, BS 5837:2012 'Trees in relation to demolition, design and construction – recommendations' (referred to as BS).

This report follows on from a previous arboricultural impact assessment from Middlemarch-Environmental in November 2013 and subsequent discussions with the London Borough of Islington and the design team. From this a TreeRadar survey was carried out to find out the actual rooting pattern of trees on the northern boundary.

The scheme retains the northern boundary trees and has been reconfigured to take into account the rooting and crown extent of the trees. The TreeRadar results have found that the roots are rooting deeply below the fill of the tarmac surface. The development will replace the impermeable tarmac surface with bio diverse planting and porous paths. All of these surface treatments will be within the depth the fill for the tarmac which will be removed with care. The finished levels of the planting beds and porous paths will be the same as existing.

The northern edge of the north-eastern block is on the edge of the rooting area of the trees, and the TreeRadar results find roots at a very low density along this line.

Trees to be retained will be protected during works by virtue of the following detailed site specific methods statements:

- tree surgery
- tree protection
- surface removal
- excavation of foundations along the north-eastern block
- installation of fencing and hard and soft landscaping

Arboricultural monitoring will take place at key stages.

Development provides an opportunity to enhance the number, species and diversity of planting. The trees will provide softening, beneficial shading, screening and provide an area with a distinct and intimate atmosphere.

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1.0 Scope of client brief:

We have been commissioned by Parkhurst Road Ltd to:

- 1.1 to review the tree survey on the trees at and adjacent to the former Territorial Army Site at 65-69 Parkhurst Road, London N7 0LP in accordance with the principles of BS 5837:2012 'Trees in relation to demolition, design and construction - recommendations'.
- 1.2 to analyse the scheme and the impact on trees to be retained.
- 1.3 to produce a tree protection plan, which shows the location and specification of the protective fencing in accordance with the British Standard.
- 1.4 to provide a tree surgery schedule which includes work to facilitate construction, based on the layout and works to trees due to their condition or previous management.
- 1.5 to provide arboricultural method statements based on the design, the current conditions and actual rooting morphology

2.0 The site:

2.1 Location and description:

The site is the former Territorial Army Centre and is accessed from Parkhurst Road to the south. Holbrooke Court is to the east and Moriarty Close forms the western boundary. A boundary wall encloses the northern boundary, separating the site from an allotment garden and play area. The site at this point is approximately 1—2m higher than the land to the north.

- 2.2 The site is an irregular rectangle and is 0.58ha. It is laid to tarmac and there has been some site clearance at the February visit. The trees subject of this report are the most important landscape feature on the site. However, offsite mature trees in Holbrooke Court, and in the gardens of Moriarty Close and in the rear gardens of the large houses fronting Parkhurst Road provide softening and screening.

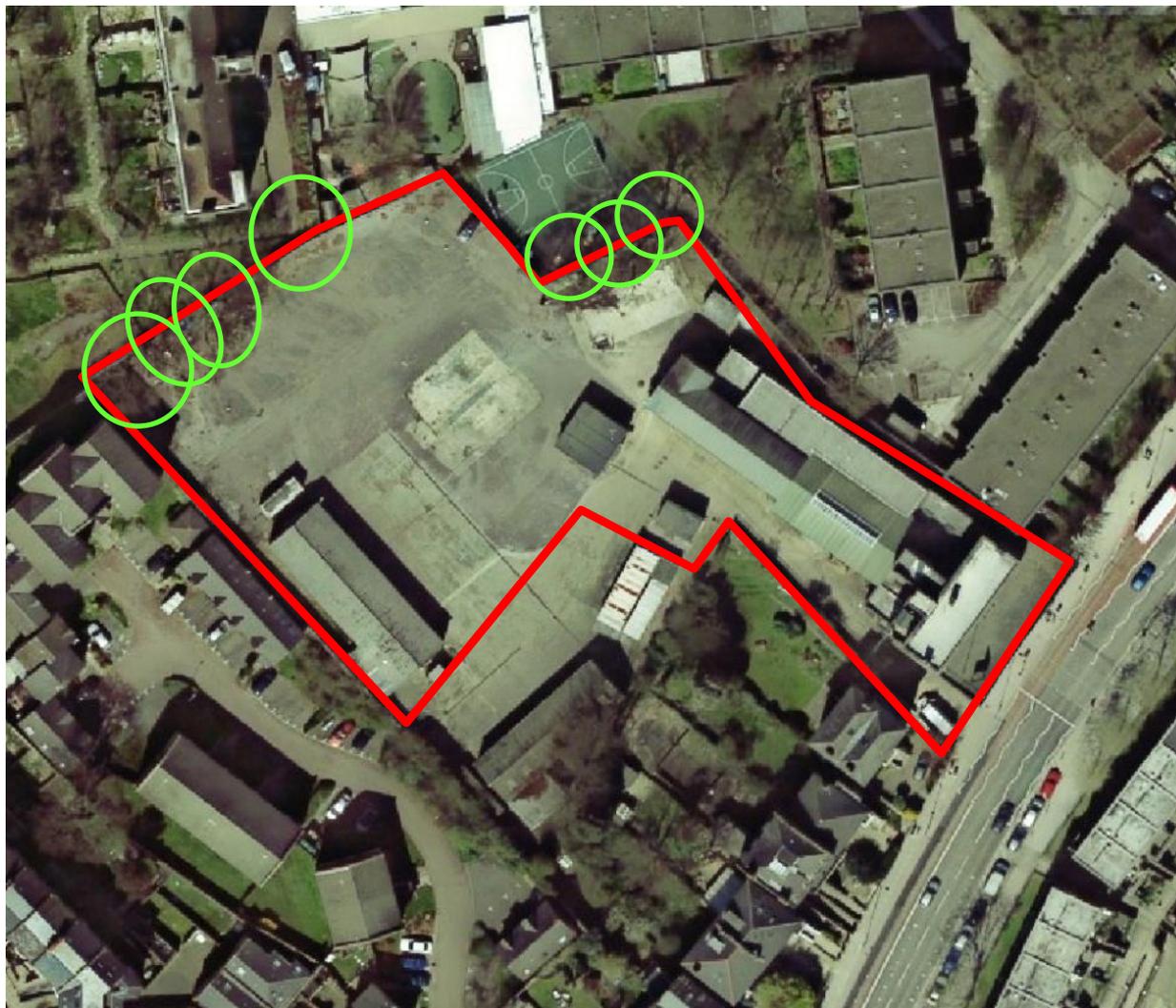


Image 1—Aerial photo

3.0 Methodology and design process

3.1 Arboricultural surveying method:

3.1.1 The trees were re-surveyed from ground level without detailed investigations in February 2014 by DF Clark. Checks were made against the Middlemarch-Environmental survey sheets. A TreeRadar survey was carried in February 2014 and the results relayed to the team. All trees with a trunk diameter of 75mm or above were surveyed. Obvious hedges and shrub masses were identified where appropriate. Information collected is in accordance with recommendations in subsection 4.4.2.5 of BS 5837 and includes species, height, diameter, branch spread, crown clearance, age class, physiological condition, structural condition and remaining contribution. Each tree was then allocated one of four categories (A, B, C or U). Full details of the trees are found at appendix one, the plans at appendix two and photographs are found at appendix five.

4.0 The trees

4.1 The trees T1—T4 and T6 and T7 are early mature to mature ash in a good condition. T5 is an offsite silver birch and T8 is a sycamore. All trees contribute to the visual amenity of the area and provide a screen between the site and the neighbouring properties.

4.2 The TreeRadar survey found that the trees are rooting at expected densities in the site, reducing in density the further away from the wall, most markedly in T1—T5. The walls do not act as a root barrier. Roots are tracking down on the interface of the wall and soil to exploit the condensation layer from the temperature differential between the brick and soil and also gaining 'purchase' from the wall structure. They then continue the other side to the play area and to the allotment garden. Most of the rooting is below 800mm below the fill beneath the tarmac.

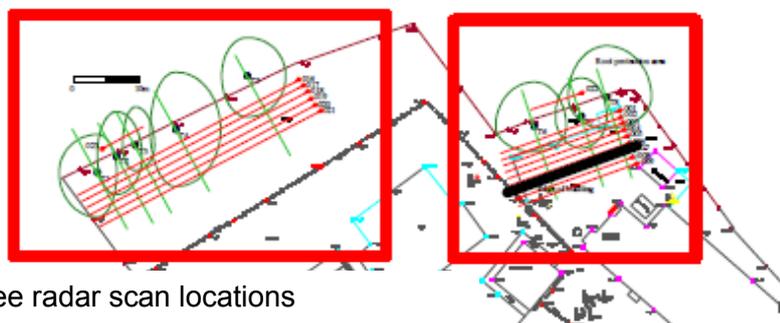


Image 1—tree radar scan locations

5.0 Description of the proposal:

5.1 The design process has been mindful of the rooting and crown spread of the trees. The location of the blocks have been sited to be on the edge of the actual rooting area of the trees and outside the crown spread.

5.2 The tarmac will be removed on the land between the trees and the blocks will be soft landscaped with some areas of porous hard surfacing. In essence the area will change from this:



Photo 1 view of the rooting area of T1—T5 looking west

To this:

This area will be bark mulched, not surfaced with benches as shown



Soft landscaping planted in top soil the depth of the removed tarmac and fill to achieve the same finished level

Porous hard surfacing

5.3 The treatment near T5—T8 is similar.



Photo 2 view of the rooting area of T6—T8 looking west

To this:



6.0 Arboricultural impact assessment:

6.1 Summary of the impact on trees

Development can adversely impact on trees by causing them to be removed to facilitate the development, or in the future, by adversely affecting their potential for retention through disturbance in root protection areas (RPAs) or through post development pressures to prune or remove.

Tree roots can be asphyxiated and die if the rooting zone becomes compacted and soil structure damaged which can easily occur, particularly on clay soils, even with the passage of light vehicles. At the design stage, disturbance within the RPA should be avoided. If unavoidable, (which may need demonstrating), consideration must be given to any construction activity such as demolition, including removal of existing hard surfaces, changing soil levels and the provision of services where within RPAs, as well as new surfaces and structures.

At the planning stage, any works proposed within RPAs must be shown to be achievable with minimal impact on retained trees. Areas should be identified where a detailed AMS will be required post planning consent.

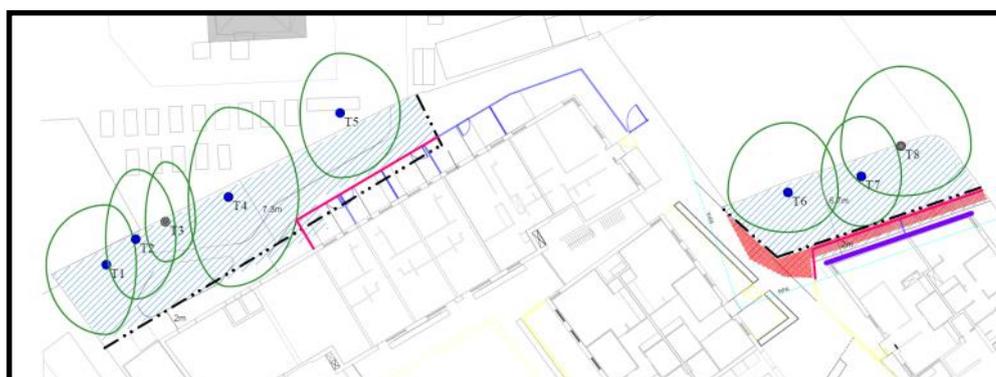
Construction of hard surfaces and other construction may be acceptable within RPAs providing specialist methods of design and construction are used. This will often result in the use of minimal or no-dig methods which result in higher finished levels which must be allowed for during design due to the effect on access thresholds and structure heights etc. The ability of trees to tolerate some disturbance depends on individual circumstances including prevailing site conditions, tree species, age and condition and this will be assessed by the project arboriculturist.

Building lines should be at least 2m outside the RPA to allow for scaffolding and other buildability issues and to allow for service runs and paths around the edges of buildings.

Trees are long-lived organisms which take a long time to mature and if considered at an early stage can complement and increase the value of a development.

The tree officer has raised concern about the effect of potential loss of light from the new buildings. The reality is that foliage receives light from direct and indirect sources. The direct source of light remains the same on nearly all aspects. There might be some loss of direct light in the late morning from the south-east, however, there will be some indirect light from reflection from the new building. I do not consider that the effect will be material given the height, maturity of the trees and distance from the buildings.

6.2 All trees will be retained and protected during works. The rooting area will be improved from impermeable tarmac to planting and porous surfacing. The porosity will increase water infiltration, gaseous exchange, and soil nutrients. All of these are beneficial for tree health. It is likely that the tarmac and fill underneath is at least 400mm thick, or deeper. With the exception of areas hatched red on the plan below, the tarmac areas will be removed for new surfacing as shown by the blue hatching on the plan below. Ideally the entire hard surfacing areas should remain until the external work phase as additional ground protection during works.



6.3 The foundation for the block in the north-eastern corner is on the very edge of the rooting area of T6—T8. The TreeRadar results show that the trees roots are at a low density and below 800mm deep. The foundation trench will be dug under arboricultural supervision to ensure that any finer roots are protected from desiccation and are cut cleanly. The design for the ground beam will be above the few roots below 800mm, and the piles will be located to ensure root integrity and function.

6.4 Once the hard surfacing and fill has been removed down to sub soil, the area will be top dressed with top soil to the landscape architects specification or porous surfacing as indicated on the plan. The finished levels will match existing. Therefore there is no conflict with the roots of T1—T8 as the depths of the new surfacing and the planting for the perennials and shrubs will all be in the excavated zone where the fill is removed. The TreeRadar results show that the roots (with a diameter greater than 20mm) are 800mm deep. Therefore whilst the RPA reflects rooting extent, it does not mean that works in the top horizon currently occupied by fill and tarmac cannot be changed to a new soft and porous hard surfacing.

6.5 Tree Protection Plan

The plan found at Appendix two is based on provided information and all scaled measurements and site boundaries must be checked against the original documents. This plan should only be used for dealing with the tree issues. Trees to be retained have black centres and green outlines whilst trees to be removed have red centres and a red, dashed, outline. Tree protection is shown as barriers and/or ground protection defining the Construction Exclusion Zone (CEZ) and any areas requiring non-standard methods of demolition or construction are shown.

Construction Exclusion Zone. An area based on the RPA in m² identified by an arboriculturist, to be protected during development, including demolition and construction work, by the use of barriers and/or ground protection fit for purpose to ensure the successful long-term retention of a tree

6.6 Post-development pressures

Shade cast by trees can be viewed negatively when it affects peoples living space. In addition to shade, there may be future pressure to prune or remove trees if development occurs too close to the tree due to concerns over leaves, fruit, twigs etc and the perception of risk from falling branches and trees and the sheer size and mass of nearby trees.

The deadwood within the crowns of trees overhanging the caravan bays should be periodically removed to minimise the risk of damage from falling branches and it is recommended the trees be periodically checked by an arboriculturist for structural and physiological health.

Shade cast by the trees is likely to be seen as beneficial in the summer months and on this site will create an intimate and attractive space between the trees and the buildings. The trees are on the northern side of the buildings, so shading is negligible.

6.7 Preliminary arboricultural method statement

Introduction

This section identifies where a detailed arboricultural method statement (AMS) will be required post planning consent. Any operations, including access, within a RPA should be described within the AMS in order to demonstrate that the operations can be undertaken with minimal risk of adverse impact on trees to be retained. This should be produced at the technical design stage with the design team. Below is a list of operations likely to require a full, detailed AMS if within an RPA:

6.8 The activities which require method statements are as follows (in order of activity):

- Tree surgery (this is simply dead wooding and tip pruning T4)
- Tree protection by fencing and retention of tarmac during works
- Excavation of the foundation on the north-eastern block as shown on the plan by the thick purple line.
- removal of hard surfacing
- new soft and porous hard surfacing
- fence installation within the RPA

Key stages will be carried out under arboricultural supervision (see appendix 9) and site supervision reports will be sent to LBI as a record.

6.9 *Tree surgery*

This is to be carried out in accordance to the schedule at appendix four in accordance with BS 3998:2010 'Tree works. Recommendations.' The work is very minor and will not be detrimental to the visual amenity or physiology of the trees.

6.10 *Tree protection*

The tree protection must be installed before any works take place and the tarmac left in situ at least within the area cross hatched red and ideally with the area hatched blue during works as additional ground protection. The specification is found at appendix eight.

6.11 *Excavation for the foundation of the north-eastern block*

Excavation within TPZs has the potential to damage tree roots and should therefore be avoided where possible. Where such work is unavoidable, and only where it has been agreed by the LPA, the working methodology should follow those detailed below to minimise root damage.

Where feasible excavation should be carried out by hand held tools. Soil conditions, the extent and depth of the excavation are all determining factors in feasibility.

Roots smaller than 25mm in diameter may be pruned back, making a clean cut with a suitable sharp tool. Roots over 25mm should not be cut without referring to the project arboriculturist.

Exposed roots must be covered to prevent desiccation and to protect them from rapid changes in temperature. Any wrapping should be removed prior to backfilling, which should occur as soon as possible. The tree side of the trench will be lined with a layer of damp hessian and then a layer of damp proof course plastic to prevent the alkalinity of concrete from scorching the roots.

Prior to backfilling, retained roots should be surrounded with topsoil or uncompacted sharp sand (NOT builders' sand), before the excavated soil is replaced. Rubble, or any other unwanted construction materials, should not be used as backfill.

Any protective fencing or ground protection removed to allow access to carry out works must be replaced immediately upon completion of works, or if works are postponed for a significant period of time, to the original specification.

6.12 *Removal of hard surfaces within TPZs*

All structures including hard surfaces, walls and fences within TPZs must be removed following the methods detailed below to minimise damage to tree roots. The use of conventional tracked and wheeled machinery causes damage to soil structure from compaction and damage to roots from excavation and must not be used within the TPZ. All areas of hard surfacing requiring removal within a TPZ will be broken up using a hand held pneumatic drill or mounted hydraulic breaker attached to a digger located outside the TPZ. The broken rubble will then be removed by hand onto a dumper truck driving on the remaining tarmac.

The only exception to this is where the hard surface is of such a size as not to be reachable from outside the TPZ. In this situation a rubber tracked mini-digger will be used. The maximum working height of the machine must be less than the lowest branch of any overhanging trees.

The mini-digger will work from the existing hard surface pulling the debris away from the trees.

Immediately after removal of the hard surface, topsoil or sharp sand must be used to cover the soil surface and any roots, to prevent drying out. The works should not be carried out in hot sun, frost or torrential rain.

6.13 *New hard surfaces within TPZs*

Levels allow new hard or robust surfaces will be designed to be of above ground, no-dig construction to minimise impact on tree roots and soil structure. In addition, finished surfaces will be of porous design to allow water and air passage in and out.

The actual system will need to be designed by a structural engineer to accommodate the loadings anticipated. Given that the hard surfaces are only for pedestrians the use of a cellular confinement system may not be necessary.

The principles to follow are:

A method to spread and support the load of the hard surface and anticipated usage without causing compaction of the soil structure beneath.

The use of a porous sub-base and finishing layer to allow water and air diffusion in and out of the soil. A separation geotextile membrane such as TreeTex T300 is advisable.

Porosity must be designed to be long-term and not to block with fine particles in the short-term, therefore irregular, no-fines aggregate must be used.

The pH of the aggregate must be considered as many conventional road stones have very high pH values which can damage susceptible trees and therefore aggregates with a near neutral pH should be preferred.

The proposed use of Cedec and resin bound gravel is welcomed as they are both porous and can tolerate some upward movement from growing roots without distorting and cracking and forming a trip hazard.

The edges will be treated timber boards laid on end pegged on the outside.

6.14 *Landscaping works within TPZs*

Due to the fact that the fill will be removed, the make up of the top soil and cultivation should not be an issue, however as a precaution, the following should be observed:

Landscape operations within TPZs have the potential to damage trees if not carried out with care; in addition the removal of protective fencing to carry out landscape operations may allow other contractors in previously protected areas.

If protective fencing is taken down to facilitate landscaping operations, the area of the TPZ must be delineated by pins and marker tape, spray paint, or some other method to clearly show the extent of the TPZ.

The preparation of soil for planting and turfing must be carried out by hand where within TPZs. Cultivation should be kept to a minimum and new topsoil added must not exceed 100mm in depth within 1m of the stem of any tree.

Topsoil and other materials must be transported by wheelbarrow on running boards when working within TPZs.

6.15 *New fencing*

The fencing shown by a magenta thick line on the plan will be installed by hand digging the fence posts. If any roots with a diameter greater than 25mm are found, then the hole will be shifted slightly. Each fence post hole will be lined with an impermeable plastic bag to prevent the alkalinity of concrete from scorching the roots.

6.16 *Site and fuel storage, cement mixing and washing points:*

All site storage areas, cement mixing and washing points for equipment and vehicles and fuel storage areas should be outside TPZs unless otherwise agreed with the LPA. No discharge of potential contaminants should occur within 10m of a retained tree stem or where there is a risk of run off into TPZs.

7.0 Conclusions:

- 7.1 The layout retains the important group of trees around the periphery and improves the rooting environment. Arboricultural method statements are required to ensure root integrity and function during the build and beyond.
- 7.2 The retained trees will provide softening, screening and a sense of maturity to the new development and reinforce the unique sense of place. They will provide beneficial shading, bio diversity and modify the climate locally. The design has been mindful of rooting and crown extent of the trees.
- 7.3 The trees are rooting off site to the north and at least 800mm deep in the site. This means that removing the tarmac and replacing with new surfacing is not an issue for tree root loss. In fact, the trees should benefit from increased water infiltration, gaseous exchange and nutrient supply.
- 7.4 The trees are nearly fully grown and I do not expect there to be a future conflict with tree crowns touching the building. They are on the northern side of the buildings so shading to habitable rooms will be minimal.
- 7.5 The new landscaping schemes provides new tree planting in areas which are currently laid to tarmac. The scheme has been designed with care under the existing trees to ensure that remain undisturbed and are integral to the character and play style of the two areas.
- 7.6 Arboricultural supervision is essential for the key stages of the construction phase.

8.0 Recommendations:

- 8.1 That a copy of the report, including the site specific method statements and tree protection plan is kept on site at all times and is part of the site induction and is sent to the contractor.
- 8.2 That the arboricultural method statements are developed further and are observed by all site personnel and supervised at key stages by the project arboricultural consultant. Short supervision reports to be written after each inspection as a record of compliance and audit trail for the local authority.
- 8.3 That the foundation design takes into account trees to be retained, trees to be removed and trees to be planted.
- 8.4 That the line of the underground services should be ideally located outside of RPAs. However, as a precaution the final service plan should be assessed by an arboriculturist. If it is unavoidable that services are to be located in RPAs, then a method statement must be produced.
- 8.5 That if there is a requirement for archaeological explorations, the trench location plan should be reviewed by the arboriculturist.
- 8.6 That the trees identified in the tree surgery schedule for re-inspection prior to occupation are examined in detail and the findings reported to the tree officer and client.



Sharon Hosegood FICFor F Arbor A BSc (Hons) Tech Cert (Arbor A)

Managing Director—DF Clark Bionomique

I have a degree in Geography and Landscape Studies and a distinction in the Arboricultural Association's Technicians Certificate (top student). I am a Fellow of the Arboricultural Association and a Chartered Arboriculturalist (Fellow). I have eleven years experience as a tree and landscape officer. I have been in private practice since 2005 and a director of a multi disciplinary consultancy since 2007 and am an Expert Witness.

Parkhurst Gardens

Arboricultural Impact Assessment

**Appendix one – Tree survey sheets from original report from
Middlemarch Environmental NME 11534905 November 2013**

Reviewed on site by DFC on 20 February 2014

Tree No.	Species	No. Stems	Diam (mm)	H't (m)	Ht 1 st Branch (m)	Branch Spread (m)				Crown Clearance (m)				Age	Phys Cond	Struct Cond	Est. Remain Contrib (Years)	Cat	Comments	Preliminary Management Recommendations
						N	E	S	W	N	E	S	W							
1	Ash	1	550	14.0	2.0 S	6.0	3.0	7.0	6.0	2.5	3.0	2.5	2.5	M	G	G	20+	B3	<ul style="list-style-type: none"> • Growing within tarmac base. • Growing next to existing boundary wall and fence. • Approx. 1.0m drop in level beyond wall; <1.0m distance from stem. • Woodpecker hole in stem at approx. 3.0m above ground level. • Old pruning wounds occluding. • Crown shape distorted due to pressure from Tree 2. 	-
2	Ash	1	660	15.0	2.0 N	7.0	4.0	6.0	3.0	2.0	3.0	2.0	2.0	M	G	G	20+	B3	<ul style="list-style-type: none"> • Growing within tarmac base. • Growing next to existing boundary wall and fence. • Approx. 1.0m drop in level beyond wall; <1.0m distance from stem. • Razor wire occluding to stem. • Squirrel drey in crown – occupied. • Tall and etiolated due to group pressure. 	-
3	Ash	1	390	15.0	4.5 N	6.0	3.0	4.0	2.0	3.0	4.0	3.0	4.0	EM	F	G	10+	C1	<ul style="list-style-type: none"> • Growing within tarmac base. • Growing next to existing boundary wall and fence. • Approx. 1.0m drop in level beyond wall; <1.0m distance from stem. • Tall and etiolated due to group pressure. • Asymmetrical crown. • Bark wound to stem at ground level – exposed heartwood. 	-
4	Ash	1	780	16.0	2.5 N	9.0	7.0	9.0	4.0	3.0	3.0	4.0	5.0	M	G	G	20+	B3	<ul style="list-style-type: none"> • Growing within tarmac base. • Roots lifting tarmac around base. • Growing next to existing boundary wall and fence. • Approx. 1.0m drop in level beyond wall; <1.0m distance from stem. • Bark wound on stem at ground level to west – exposed heartwood. • Crown shape distorted due to pressure from Tree 3. 	-

Table A1: Tree Survey Schedule (continues)

Tree No.	Species	No. Stems	Diam (mm)	Ht (m)	Ht 1 st Branch (m)	Branch Spread (m)			Crown Clearance (m)			Age	Phys Cond	Struct Cond	Est. Remain Contrib (Years)	Cat	Comments	Preliminary Management Recommendations	
						N	E	S	W	N	E								S
5	Silver Birch	1	340	14.0	3.0 E	6.0	6.5	4.0	1.5	2.0	2.0	5.0	M	G	G	20+	B3	<ul style="list-style-type: none"> Off site tree. Limited access to survey. Exposed surface roots. Bifurcated at approx. 2.5m above ground level. Crown shape distorted due to pressure from Tree 4. 	-
6	Ash	1	660	16.0	2.0 E	7.0	4.0	6.0	3.0	2.0	2.0	2.0	M	G	G	20+	B3	<ul style="list-style-type: none"> Growing within tarmac base. Approx. 2.0m drop in level beyond wall; <1.0m distance from stem. Cavity in old pruning wound at approx. 2.2m above ground level on stem. Growing next to existing boundary wall and fence. Necrosis on secondary stem at approx. 8.0m above ground level to east with woodpecker damage. Crown shape distorted due to pressure from Tree 7. 	-
7	Sycamore	1	690	14.0	2.5 E	6.0	4.0	5.0	4.0	4.0	7.0	4.0	M	G	G	20+	B3	<ul style="list-style-type: none"> Growing within tarmac base. Roots lifting tarmac around base. Growing next to existing boundary wall and fence. Approx. 2.0m drop in level beyond wall; <1.0m distance from stem. Bifurcated at 1.8m above ground level. Crown shape distorted due to group pressure. 	-

Table A1: Tree Survey Schedule (continues)

Tree No.	Species	No. Stems	Diam (mm)	H't (m)	Ht 1 st Branch (m)	Branch Spread (m)			Crown Clearance (m)			Age	Phys Cond	Struc Cond	Est. Remain Contrib (Years)	Cat	Comments	Preliminary Management Recommendations			
						N	E	S	W	N	E								S	W	
8	Sycamore	2	640	14.0	2.0 S	8.0	7.0	5.0	6.0	4.0	7.0	3.0	3.0	3.0	M	G	F	10+	C1,2	<ul style="list-style-type: none"> • Growing within tarmac base. • Roots lifting tarmac around base. • Growing next to existing boundary wall and fence. • Evidence of damage to wall as stem pushes upon it. • Approx. 2.0m drop in level beyond wall; <1.0m distance from stem. • Bifurcated at ground level. • Suckers at base. • Exposed surface roots. • Crown and stem shape distorted due to group pressure. • Major deadwood in crown. 	Remove major deadwood in crown.
G1	Ash Elder	1	100	6.0	1.0 N	2.0	2.0	2.0	2.0	0.5	0.5	0.5	0.5	0.5	Y	G	G	10+	C1,2	<ul style="list-style-type: none"> • Restricted access limits survey. • Group of developing Ash trees with Elder understorey. • Growing next to an existing boundary wall (approx. 3.0m high). 	-
G2	Ash	1	300	11.0	2.5 S	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	EM	G	G	20+	B2,3	<ul style="list-style-type: none"> • Off site group. • Limited access to survey. • Crown shapes distorted due to group pressure. • Growing next to existing boundary wall. • Crowns overhang study area by approx. 2.0m. 	-
G3	Ash, Silver Birch	1	230	10.0	3.5 S	3.0	3.0	3.0	3.0	4.0	6.0	4.0	4.0	4.0	Y EM	F	G	10+	C3	<ul style="list-style-type: none"> • Off site group. • Limited access to survey. • Crown shapes distorted due to group pressure. • Growing next to existing boundary wall. • Tall and etiolated due to pressure of proximity to wall and building. • Crowns overhang study area by approx. 1.0m. 	-

Table A1: Tree Survey Schedule (continues)

Tree No.	Species	No. Stems	Diam (mm)	H't (m)	Ht 1 st Branch (m)	Branch Spread (m)			Crown Clearance (m)			Age	Phys Cond	Struc Cond	Est. Remain Contrib (Years)	Cat	Comments	Preliminary Management Recommendations			
						N	E	S	W	N	E								S	W	
G4#	Jasmine Rose Hawthorn	1	130	6	0.1 N	1.5	1.5	1.5	1.5	0.1	0.1	0.1	0.1	0.1	Y EM	G	G	10+	C3	<ul style="list-style-type: none"> Off site group. Limited access to survey. Crown shapes distorted due to group pressure. Growing next to existing boundary wall. Crowns overhang study area by approx. 1.5m. 	-
<p>Key</p> <p>Age Class Y: Young = tree within first third of average life expectancy EM: Early mature = tree within second third of average life expectancy M: Mature = tree within final third of average life expectancy OM: Over mature = tree beyond average life expectancy</p> <p>Physiological Condition G: Good = no health problems F: Fair = symptoms of ill health that may be remedied P: Poor = poor health</p> <p>Structural Condition G: Good = no structural defects F: Fair = remedial structural defects P: Poor = significant structural defects</p>																					

000: Estimated measurement due to access restrictions
 #: Within Hillmorton Conservation Area
 Major deadwood: branches in excess of 50 mm diameter
 Minor deadwood: branches/twigs less than 50 mm diameter

Table A1: (cont'd) Tree Survey Schedule

Parkhurst Gardens
Arboricultural Impact Assessment

Appendix two –

Tree protection plan DFCP 3057 TPP

Tree radar plan DFCP 3057 TR

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Appendix tree– TreeRadar results (extracts from Tree Radar report)

Scan line	Location	Comments on root presence (over 20mm diameter)
001 — 009	<p>T6, T7 and T8 ash maximum root protection area radius = 8.4m</p> <p>Commencing at 3m to the northern boundary wall, a series of scan lines parallel to the wall 1m apart. Therefore the final scan line (009) is 12m from the wall.</p>	<p><i>The trees are rooting at a medium density between depths of 85—130cm deep. The density of the rooting pattern decreases significantly further away from the tree and at the last scan (12m from the wall) the density is very low and only 7 roots were found. At this distance the root diameter will be small.</i></p>
022	<p>T6, T7 and T8 ash maximum root protection area radius = 8.4m</p> <p>The playground</p>	<p><i>High density of roots which must be tracking down the interface of the wall (the trees are growing at a slightly higher level), down under the foundations and under the surfacing at c. 1m</i></p>
016 — 021	<p>T1—T5 ash maximum root protection area radius = 7.44</p> <p>Commencing at 3m to the northern boundary wall, a series of scan lines parallel to the wall 1m apart. Therefore the final scan line (021) is 9 m from the wall.</p>	<p><i>The trees are growing at a high density between 80cm—140cm. The density of the rooting pattern decreases at the end scan line (021). At this distance the root diameter will be small.</i></p>
023	<p>In the allotment garden to the north of the trees</p>	<p><i>High density of roots which must be tracking down the interface of the wall (the trees are growing at a slightly higher level), down under the foundations and under the grass between 70—140cm deep.</i></p>

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Appendix four– Tree surgery schedule

Tree surgery schedule: All tree works to be undertaken in accordance with BS 3998:2010 'Tree works—Recommendations'. All pruning cuts to be made at suitable growing points in line with the principles of 'Natural target pruning'.

Tree no.	Species	Location	Proposed works	Reason
T1— T4 T5 T6	Ash	Northern boundary of Parkhurst Gardens	Remove any dead wood with a diameter over 25mm which overhangs the site Light tip pruning of T4 on the southern boundary to achieve 2m clearance between the crown and the scaffold line.	For safety reasons To provide clearance
T8	Sycamore	Northern boundary of Parkhurst Gardens	Remove any dead wood with a diameter over 25mm which overhangs the site	For safety reasons

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Appendix five– Photographs

Photographs of Parkhurst Gardens taken February 2014



1. T1 - T5 looking west along the northern boundary



2. T6—T8 looking east



3. General view of rooting area which is common to T1—T8

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Appendix six –
Terms of reference and contact information

Terms of Reference

Reference Documents:

BS5837:2012 'Trees in relation to design, demolition and construction – recommendations'

BS3998:2010 'Tree work – recommendations'

'Tree Roots in the built environment' (*DCLG - Jack Roberts, NJackson & Mark Smith*)

'Principles of Tree Hazard Assessment and Management' (*DTLR—David Lonsdale*)

'The body language of trees' (*DTLR Claus Mattheck and Helge Breloer*)

'Thinking tools after nature' Claus Mattheck

Received information:

167-10_revK_140610, 167_01_G_140429_, Arboricultural Impact Assessment dated November 2013 by Middlemarch Environmental, Design team minutes, Landscape Character draft for the Design and Access Statement.

Method:

TreeRadar survey and report in February 2014, review of previous arboricultural survey and report, Design team meeting attendance, ongoing discussion with the design team and landscape architect.

Contacts Table

NAME	COMPANY	POSITION	Tel. No.
Andrew Pollard	First Base (Parkhurst Road Ltd)	Client	c/o DF Clark Bionomique Ltd
Jon Ryan	London Borough of Islington	Tree Preservation Officer	020 7527 2150
Sharon Hosegood	DF Clark Bionomique Ltd	Arboricultural consultant	01621 740876 07930 760104

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Appendix seven – Caveats

Specific Report Caveats:

- 1 At the time of writing this report, the protected tree status is correct. However, this can change. Therefore I advise that the tree contractor makes a further check with Islington Council just before carrying out any works.
- 2 No internal diagnostic equipment was used other than a sounding mallet and probe and all inspections were from ground level only, with the aid of binoculars where necessary.
- 3 The survey is concerned solely with arboricultural issues.
- 4 Any changes in ground level, or excavations near to tree roots not discussed within this report may change the stability and condition of the trees and a further examination would be required.
- 5 As trees are a dynamic living organism this report is only valid for a period of 12 months, in respect to their health and condition.
- 6 Only trees listed in this report have been examined.

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Appendix eight– tree protection specification

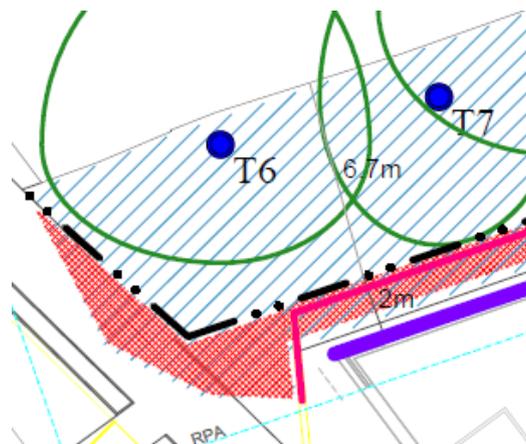
Design of welded mesh, Heras type tree protection barriers

Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place. The default specification should be in accordance with 6.2.2.2 of BS 5837, as set out below.

Specifications: Barrier shall be a minimum 2m high. It shall consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated below. The vertical tubes should be spaced at a minimum interval of 3m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed. See Figure 2 overleaf.

The panels should be supported on the inner side by stabiliser struts. See Figure 3 overleaf. All-weather notices should be attached to the barrier with words such as 'CONSTRUCTION EXCLUSION ZONE - NO ACCESS-.

Location: Fencing shall be positioned on the perimeter of the Root Protection Area to define the Construction Exclusion Zone or as specified in the Tree Protection Plan DFCP 3057 TPP as shown by a black dashed line and dimensions from fixed points are shown.



Ground protection: An area of tarmac is to be left in situ during works due enable machinery access to both blocks. This is shown on the plan by red cross hatching.

Design of Weldmesh Type Tree Protection Fence

Figure 2 Default specification for protective barrier

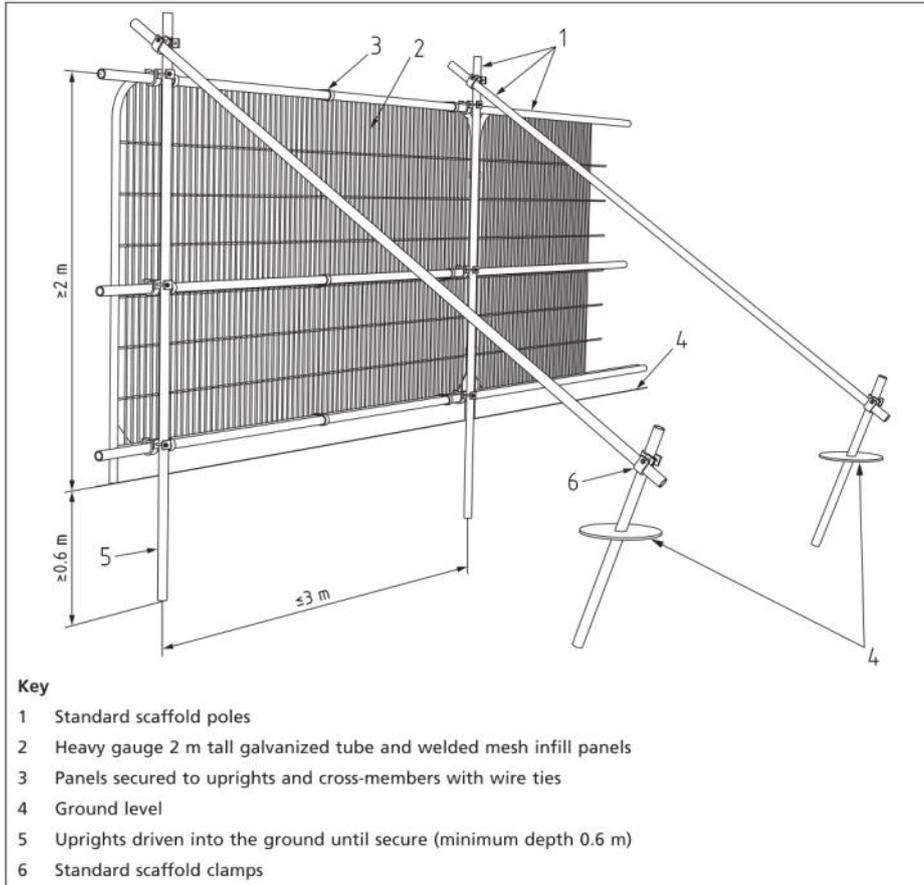
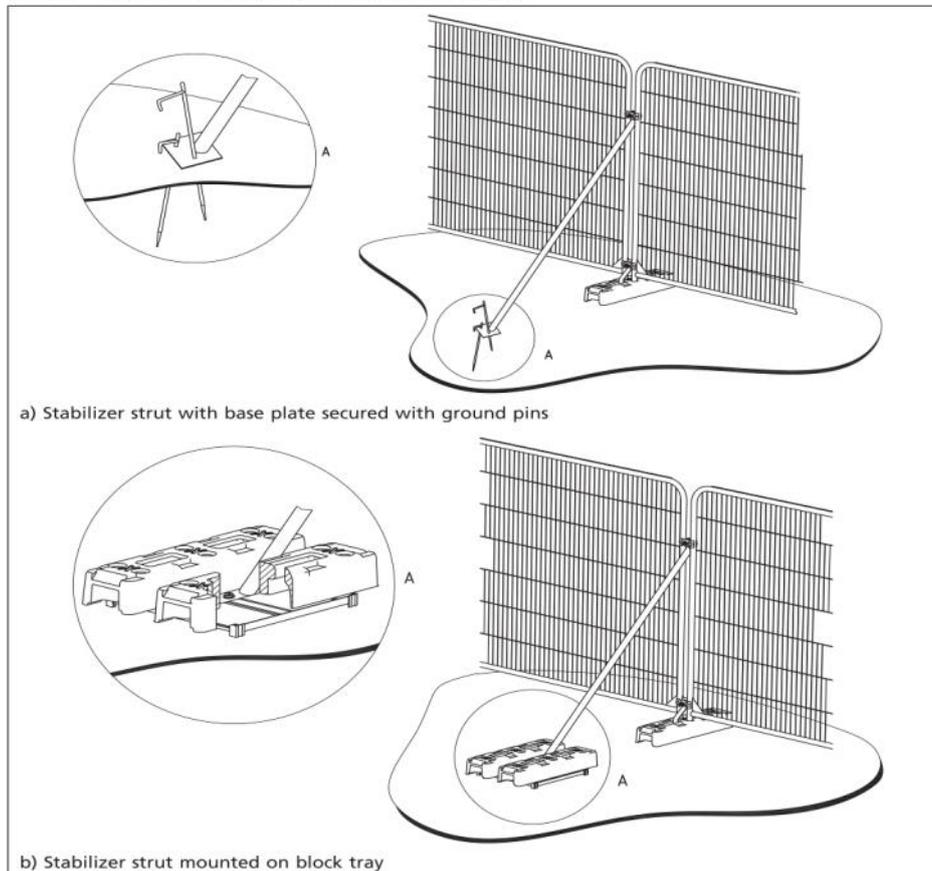


Figure 3 Examples of above-ground stabilizing systems



Suggested protective fencing warning sign format



**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 PROJECT ARBORICULTURIST

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Appendix nine - site supervision schedule to be developed further post-planning

Site management and supervision

Pre-commencement site meeting: Before any site works including site clearance begin, a site meeting between the site manager and arboricultural consultant should be held and to which the LPA tree officer will be invited. The purpose of the meeting will be to discuss tree protection measures detailed in this document and to agree the sequence of events where they can impact on trees. At this meeting a programme of tree protection will be agreed by all parties to form the basis of any supervision arrangements between the arboricultural consultant and the developer.

Site management: It is the responsibility of the main contractor to ensure that the details of this report are known, understood and followed by all site personnel. As part of the site induction, all site personnel who could have an impact on trees, should be briefed on specific tree protection requirements. Copies of the report and plans should be available on site at all times.

Site supervision: Once work begins on site, the project arboricultural consultant should visit site at an interval agreed at the pre-commencement site meeting. The interval should be sufficiently flexible to allow the supervision of key works as they occur. The arboricultural consultant's role is to monitor compliance with arboricultural conditions and advising on any tree problems that arise or modifications that become necessary. Following every site visit, a short report will be sent to the local authority tree officer and the developer. The key stages requiring supervision will be agreed at the pre-commencement site meeting but will usually include:

- Tree pruning and felling operations
- Installation of tree protection barriers
- Installation of ground protection
- Any agreed works within RPAs
- Monitoring of compliance

Overleaf is a site supervision template to be completed at the pre-commencement site meeting.

Site supervision schedule

Constraints item	Supervision required?	Number or frequency of visits expected	Timing of site visits
Tree works operations	No		Prior to construction
Establishment of Tree Protection Zones for retained trees	Yes		Prior to site clearance
Excavation for foundations on the northern boundary of the north-eastern block	Yes		During construction build phase
Removal of existing hard surfaces with in the blue hatched area on the tree protection plan	Yes		Post site clearance, during construction phase
Protection and prevention of damage to retained tree canopies during construction	No		Post site clearance, During construction phase
Site access for construction vehicles and avoidance of compaction to the RPA of retained trees	To be confirmed		During construction phase
Fence construction shown by the orange red line on the tree protection plan	yes		During construction phase
Generic construction site constraints: 1 Site hut location 2 Temporary toilets 3 Siting of bonfires 4 Location of contaminant storage and washout areas 5 Location of stripped topsoil	As part of other inspections		During construction phase
Replacement tree planting conforms with NHBC Ch. 4.2 and planning conditions	Responsibility of landscape architect		Post construction

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**Appendix ten–
Legislation and designations affecting the site**

3.2.1 Tree Preservation Orders:

The Town and Country Planning (Tree Preservation) (England) Regulations 2012

The trees are not protected by a Tree Preservation Order

3.2.2 Conservation Areas:

Planning (Listed Buildings and Conservation Areas) Act 1990

The site is not within a Conservation Area, however, the site shares a boundary with 53—63 Parkhurst Road which is in Hillmartin Conservation Area. Offsite group G4 is within this area, but no works are proposed.

3.2.3 Ecological considerations:

The Wildlife and Countryside Act 1981, as amended, The Conservation of Habitats and Species Regulations 2010 and the Countryside and Rights of Way Act 2000, provide statutory protection to species of flora and fauna including birds, bats and other species that are associated with trees.

3.2.4 Occupiers Liability 1957 and 1984:

The Occupiers Liability Act (1957 and 1984) places a duty of care to ensure that no reasonably foreseeable harm takes place due to tree defects. Therefore this report includes recommendations within the tree tables for work required for safety reasons. 'Common sense risk management of trees (National Tree Safety Group 2012)' states that *'The owner of the land on which a tree stands, together with any party who has control over the tree's management, owes a duty of care at common law to all people who might be injured by the tree. The duty of care is to take reasonable care to avoid acts or omissions that cause a reasonably foreseeable risk of injury to persons or property.'*



Arboricultural Impact Assessment and Method Statement

Parkhurst Gardens
The former Territorial Army Site
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June 2014

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