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**Constraints & Feasibility Study,
Arboricultural Implications Assessment,
Tree Protection Plan
65-67 Stamford Hill
London N16 5TJ**

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Date of Survey: 12 December 2012

Reference: 2108-TSE

Date of report: 19 December 2012

Surveyed & prepared by: Tim Scott-Ellis

Instructions: We have been instructed by Drawing & Planning on behalf of Agudas Israel Housing Association to undertake a survey of the trees and provide the following:

- A Tree Survey, Feasibility & Constraints Analysis & Plan, & Arboricultural Impact Assessment and Draft Tree Protection Plan for the proposals as presented.

All reports are prepared in accordance with the recommendations detailed in BS 5837:2012 Trees in relation to design, demolition and construction (the BS).

This report provides the necessary information to satisfy the Validation of Planning Applications requirements of a local planning authority.

SUMMARY

The site comprises a mix of retail and light industrial units off Stamford Hill in north London. The buildings have a temporary and unmanaged character and they are situated between large residential units to the north, south and west.

There are no trees on site but there are five trees surveyed adjacent to it. Of these the London plane T1 is the most significant as it contributes to the street scene and character of Stamford Hill. The sycamores in Montefiore Court to the north are not visible to the road but are part of the communal gardens of this accommodation and therefore have moderate amenity value.

The proposal is to demolish the existing buildings and replace them with five new residential accommodation blocks.

The only place where the proposals encroach onto the trees is the new entrance in the southeast corner going over the root zone of this tree. Given this is already the case I believe this can be readily managed and that the protection measure detailed in the report will allow for the safe and sustainable retention of this tree and the others surveyed.

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1 DOCUMENTS PROVIDED

1.1 **Documents provided:** Drawing & Planning provided me with copies of the following documents:

- A plan of the site showing the location and area to be surveyed.
- Site Layout proposals.

2 SURVEY METHODOLOGY

2.1 I carried out an unaccompanied site visit on 12 December 2012. The weather at the time of survey was dull, still and dry. As a result the visibility was satisfactory.

2.2 The survey was based on the site plan provided. Trees were not plotted on the plan and have been placed by eye.

2.3 Our survey was of a preliminary nature and did not involve any climbing or detailed investigation beyond what was visible from accessible points at ground level. Both survey and report have been undertaken to accord with the recommendations British Standard 5837:2012 Trees in relation to design, demolition & construction - Recommendations [BS 5837].

2.4 This assessment does not relate to risks associated with subsidence, heave or other forms of disturbance associated with tree root growth or removal.

2.5 I did not have access to the trees T4 and T5 as they were in a locked garden area. My observations are based on viewing with binoculars and what was visible from within the property.

3 SITE DESCRIPTION

3.1 The site comprises an area currently occupied by retail and light industrial units to the west of Stamford Hill. There are blocks of residential housing to the west, north and south of the site with the road to the east.

3.2 The site contains no trees though Stamford Hill (the A10) is characterised in this area by the tree lined avenue.

3.3 The site is entirely under hard surfacing for both the retail units and the car parking. I have not made an analysis of the soils.

3.4 No documented information has been provided regarding any history of root disturbance or severance or changes in local ground conditions (soil levels, drainage patterns etc.) or the location of underground services.

3.5 The surfacing comprises a bitumen wearing course; the soils below have not been investigated by excavation but the drift map indicated slate and silty soils.

4 PRINCIPAL TREES

- 4.1 Appendix B contains the factual data collected during the site survey including comments regarding health, condition and amenity value. I have expanded on these data with regard to the principal trees below where relevant to the proposals.
- 4.2 The principal trees are situated in the neighbouring properties to the north and south. The mature London plane T1 is located on the entrance to the housing complex to the south. It forms a part of the avenue of mature planes that characterise the area and is within a very limited area of open ground. Consequently it will be exploiting the areas under the hard surfacing where this has been compacted to a degree where root growth can't be sustained.
- 4.2.1 In these situations the trees often exploit the soil more deeply than encountered in more open areas if there are fissures or cracks that allow oxygen to access these deeper areas.
- 4.2.2 There are no obvious or significant defects visible and the crown indicators of vitality are all as expected for a mature tree of this size and in this location.
- 4.3 The fastigate hornbeams T2 and T3 are located adjacent to the wall forming the boundary between the site and the residential properties to the south. These two trees form a joint canopy and again show no significant defects.
- 4.4 The two remaining trees surveyed are the two sycamores in the locked garden area of Montefiore Court to the north. These two trees are situated against the wall with a large garden area and have been pruned to form an espalier type form along the wall. From my observations from within 65-67 Stamford Hill I could see the trees are regularly maintained by pollarding and the growth responses are within normal tolerances as I could see at the time.
- 4.4.1 There is a further tree situated in the centre of the garden of Montefiore Court but I was not able to see this tree from any angle. However, based on the fact it was not visible from the neighbouring site it was not a large tree and will not be affected by any development of the site in question.
- 4.5 There are two early mature Leyland cypress trees along the front (eastern) side of Montefiore Court that are outside the area affected by the proposals. There are also several further trees along the road into the residential area to the south that again will not be influenced by the proposals. I have marked these trees locations on the plan but they have not been surveyed in detail.

5 THE PROPOSAL

- 5.1 The proposals are for five residential blocks occupying the central east west line of the site. This will comprise 6 floors with basement and lower basement level parking. There will be open space around the dwellings with further communal gardens on the roofs.
- 5.2 The provision is for maisonettes, 1 to 4 bedroom flats and associated service facilities. There will also be a shop and conference facilities. Vehicular access will be from the A10 Stamford Hill on a remodelled entrance at the south-eastern corner providing access to the

- car parks and allowing a pull in point from the main road. There will be pedestrian and emergency access along the northern side of the site.
- 5.3 The open space provision will be a mixed of private and communal garden spaces between the blocks and will occupy the western two thirds of the space available.

6 CONSTRAINTS ANALYSIS

- 6.1 **Statutory Protection:** I have requested from Hackney Borough Council whether the trees adjacent to the site are subject to any statutory protection. I have yet to receive an answer. However, the measures presented for the trees in the report below would be no different for a protected tree than for one not protected.
- 6.1.1 The important issue in this case is that any damage to the trees in neighbouring ownership may be subject to legal sanction.
- 6.2 The constraints presented by the trees are limited to the identified root protection area of the London Plan T1 and the sycamores T4 and T5.
- 6.3 I have amended the shape of the root protection areas (RPAs) from the circles as initially presented to reflect the presence of the roads and buildings. Tree roots will not extend far into these areas as the soil conditions are not suitable for growth due to compaction.
- 6.4 I have presented the indicative shade arcs on the tree constraints plan. These show the arc of shade during the day and provide an indication of how the trees might influence the reasonable enjoyment of a property. These arcs cover the area identified for any new dwelling. In this case, given the size of the properties and the design of the buildings I do not believe that shade will be a factor in any post development pressure for inappropriate works.
- 6.5 Any new service runs will need to be outside the root protection areas of any retained trees. Should these encroach into these areas they are likely to significantly affect the ability of the trees to function or survive. This may result in enforcement action.
- 6.6 **Seasonal nuisance.** Trees are naturally growing and shedding organisms. Leaves of some species can cause problems, particularly in the autumn, by blocking gullies and gutters. Fruit can cause slippery patches, and accumulation of honeydew can be damaging to surfaces and vehicles.
- 6.7 The surface water run-off and soil drainage has not been studied. However, due to the site topography and soil type, I do not foresee any detrimental effects on the trees in hydrological terms as a result of development.

7 ARBORICULTURAL IMPACT ASSESSMENT

- 7.1 The trees affected are the London Plan T1 and the sycamores T4 and T5. Of these the most important issue is the location of the plan tree T1 adjacent to the remodelled entrance. This tree will be exploiting some of the area within the site proposed for the new entrance. This area is already under hard surfacing and the rooting here will be restricted but the removal and installation will have to be undertaken with care to ensure the damage is minimal. This can be readily achieved and I have included indicative methods for this type of operation. Soils will have to be analysed first to allow a site specific specification.
- 7.2 The sycamore trees T4 and T5 will not be exploiting the soil under the site given the feely available garden space that is much more suitable for sustaining root growth. Some measure of protection of their crowns will be needed to ensure no damage occurs during the physical construction of the dwellings.
- 7.3 The remaining trees surveyed have a much smaller rooting area that is likely to be accommodated within the neighbouring site. I do not believe these tree will be affected by the development proposed and have not recommended any protective measures for them.
- 7.4 The existing walls will be used as tree protection barriers unless they are to be replaced when marine grade ply will be used to protect the trunks of the trees.
- 7.5 The removal of existing structures and hard surfacing can be undertaken with no reference to trees for most of the site. Where the hard surfacing will be removed and replaced next to T1 the method statement at Appendix F will be followed. The installation of new hard surfacing will be designed so as not to require any digging into the existing mineral soils.
- 7.5.1 I have considered using a load bearing pavement in the area of the encroachment into the RPA of T1 and have discounted it for the following reasons:
- The levels will be too high this close to the road.
 - The local planning authority are unlikely to accept this solution so close to the road.
 - The longevity is suspect for the amount of traffic that will use this access.
 - The tree has tolerated the existing hard surface so is likely to cope with a new, similar surface.
- 7.6 The proximity of the new structures to trees in terms of separation distances is dictated by existing boundary walls. Should these be replaced then special measures will be installed. These will take the form of plywood boxing around the stems at the maximum distances achievable.
- 7.7 All new services will need to be installed outside the construction exclusion zones of the retained trees. There is ample room to route these without disturbing any retained tree.
- 7.8 The ground level changes are outside the RPAs of the trees and therefore will not affect them. There is room in the site for storage without impinging on the trees.

8 CONCLUSIONS

- 8.1 In accordance with the recommendations of the British Standard 5837:2012 the proposal show the feasibility of the tree protection measures only. These details and associated arboricultural method statements will be worked up should consent be granted.
- 8.2 On the basis of the above information and discussions, I summarise my conclusions as follows:
- The proposal to build the new dwellings can be achieved with no compromise to the trees worthy of retention.
 - There is scope to enhance the landscape with new planting.
 - There will be no appreciable post development pressure, and none that would oblige the Council to give consent to inappropriate tree works.
 - The retained trees can all be protected in accordance with current standards and guidance.

9 RECOMMENDATIONS

- 9.1 I have prepared the TPP giving feasible solutions to the implementation of the proposed design where possible.
- 9.2 The soils will need to be assessed before any detailed specifications regarding the tree protection measures are drawn up.
- 9.3 All landscaping design and implementation will be undertaken in accord with British Standard 4428:1989 Code of practice for general landscape operations (excluding hard surfaces) and current best practice.
- 9.4 I have taken account of the information given to me and my own observations on site and I am satisfied that this proposed scheme is arboriculturally sound provided that the factors I have described are taken into account. Clearly any refinement of the design will need arboricultural advice, but I see no reason why the project cannot proceed with the long term wellbeing of the retained trees safeguarded in a sustainable manner.
- 9.5 I am a Fellow of the Arboricultural Association, a Chartered Arboriculturist and a Chartered Surveyor. I hold an honours degree in Forestry and the Royal Forestry Society Professional Diploma in Arboriculture. I have been working as a full-time professional arboriculturist since 1999.



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Evolve Tree Consultancy

The authority of this Report ceases when any site conditions change, or pruning or other works unspecified in the Report are carried out to, or affecting, the Subject Tree(s). The statements made in this Report do not take into account the effects of extremes of climate, vandalism or accident, whether physical, chemical or fire. Evolve Tree Consultancy cannot therefore accept any liability in

connection with these factors, nor where prescribed work is not carried out in a correct and professional manner in accordance with current good practice.

The limit of Evolve Tree Consultancy' indemnity over any matter arising out of this report extends only to the instructing client; Evolve Tree Consultancy cannot be held liable for any third party claim that arises following or out of this report. This report remains the intellectual property of Evolve Tree Consultancy.

APPENDIX A - Tree Constraints Plan

Important: Please note that this plan is to be viewed in colour and at the scale presented. It is likely to be difficult to read if presented in a smaller format. Important features of the plan are colour coded and the data processed, and conclusions drawn, may be difficult to assess if presented in black and white.

The term “group” is intended to identify trees that form cohesive arboricultural features either aerodynamically (e.g. trees that provide companion shelter), visually (e.g. avenues or screens) or culturally, including for biodiversity (e.g. parkland or wood pasture), in respect of each of the three subcategories

Trees outside the property. Every landowner and manager has a duty of care not to damage trees on neighbouring land. The common causes of damage (compaction, physical damage and inexperienced pruning) must be avoided through good planning and site management.

By common law, branches from trees on adjacent properties extending over boundaries can be pruned back to the boundary line without the permission of the owners. However, the material belongs to the tree owner and the same guidance on statutory controls applies as discussed above.

Statutory wildlife obligations: The Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000 provides statutory protection to birds, bats and other species that inhabit trees. All tree work operations are covered by these provisions and advice from an ecologist must be obtained before undertaking any works that might constitute an offence.

Birds. Please be aware that birds may be found nesting in trees and associated plants such as ivy with many species producing second or third broods in appropriate habitat and in suitable environmental conditions.. All wild birds are protected by law under the wildlife & Countryside Act 1981 and it is an offence to intentionally disturb, injure or kill a nesting bird or to take, damage or destroy an occupied nest or egg. If nesting birds are discovered, works on the trees should be deferred until the nests are abandoned. Care should be taken during any felling operation or surgery works to trees to avoid damage or disturbance to birds during the nesting season.

It is also an offence to kill, injure or take a bat or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection. Under the Habitat Regulations it is an offence to damage or destroy a breeding site or resting place of any bat.

Bats are protected under the Wildlife & Countryside Act 1981 and subsequent legislation and it is an offence to deliberately or recklessly disturb them or damage their roosts. Trees should be inspected before any works commence and if the presence of bats is suspected advice will need to be sought from the Natural England Bat Line on 0845 1300228. Further advice on bats is available from The Bat Conservation Trust (020 7627 2629).

The Conservation of Habitats and Species Regulations 2010.

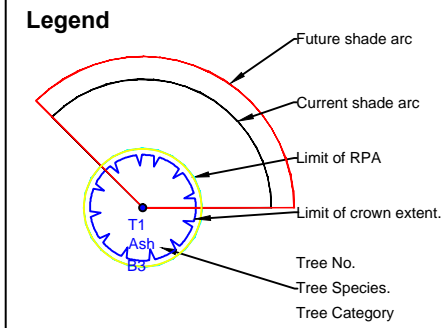
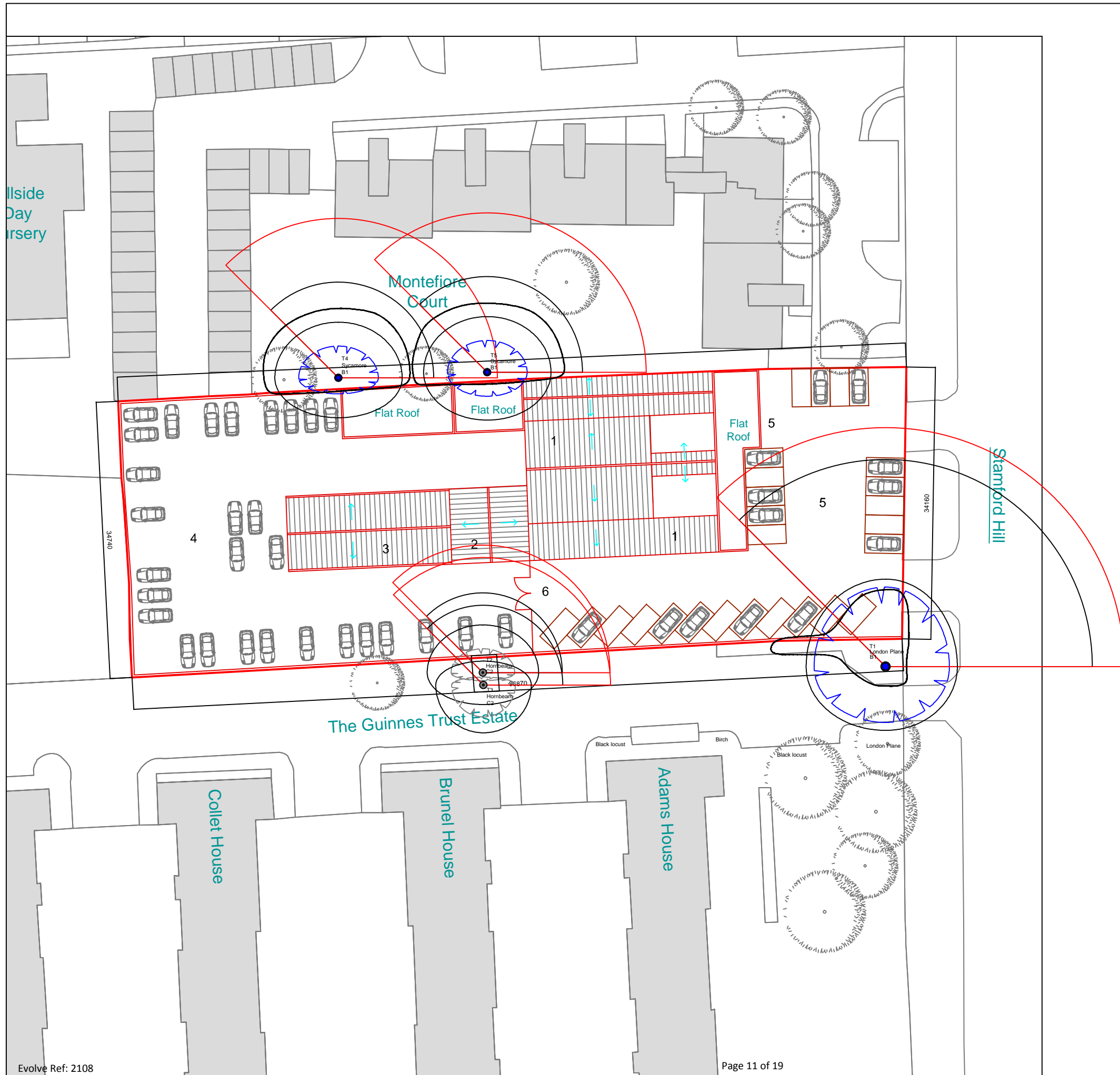
Trees outside the property. Every landowner and manager has a duty of care not to damage trees on neighbouring land. The common causes of damage (compaction, physical damage and inexpert pruning) must be avoided through good planning and site management.

By common law, branches from trees on adjacent properties extending over boundaries can be pruned back to the boundary line without the permission of the owners. However, the material belongs to the tree owner and the same guidance on statutory controls applies as discussed above.

The survey does not set out the working specifications of tree protection measures and engineering and design features, but provides enough detail in principle to demonstrate the feasibility of the scheme.

The survey does not cover the arrangements that may be required in connection with the laying or removal of underground services.

General Tree Protection Measures. The protection of the trees will also include recognition of other types of potentially damaging activities, such as the storage of materials (and other substances likely to be toxic to plants), parking, site building requirements and the use of operational arcs of excavation and lifting machinery, including their loads, especially large building components such as beams and roof trusses. Operations like these have the potential to cause incidental damage and logistical planning is essential to avoid conflicts.



- U Grade trees
- A Grade trees
- B Grade trees
- C Grade trees
- Future canopy spread
- Primary Root Protection Area

Individual trees were identified when forming an open grown nature not influenced by other trees. Groups of trees were identified where they formed clear and discrete formations either by species or physical proximity.

Where groups have been identified the Root Protection Areas have been developed based on the trunk diameter of the largest trees in the groups. The RPAs are intended to provide minimum rooting volume for any retained trees to survive the construction process and therefore any reduction in this area should be avoided.

The root protection area (RPA) is a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.

Any observations that I have made with regard to the condition of built structures are from a lay person's view.

Shade: The shade segments shown are calculated from the current and estimated future height of the tree and are plotted using the guidance within BS 5837. They identify the area of site which may be affected by tree shade during the course of a day. They do not represent an area which will be in shade all day long, but instead they represent an area which may be affected at some point during the course of a day by shade.

The actual type of shade will depend upon the habit and/or density of the tree crown. The segments represent the motion of the tree shadow for a typical day (between late spring to autumn) from the middle of the morning to late evening. The vagueness in these times relates directly to the segment dimensions. They must be used with care and are only intended as a guideline (see BS 5837 5.3.1).



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Client: Agudas Israel Housing Association	
Project: 65-67 Stamford Hill, London	
Title: Tree Constraints Plan	
Date: 12-12	Scale: 1:500 at A3
Drawn: TSE	Job Ref: 2108 Rev A 12/2012

APPENDIX B - Tree Schedule Explanatory Notes

The term “group” is intended to identify trees that form cohesive arboricultural features either aerodynamically (e.g. trees that provide companion shelter), visually (e.g. avenues or screens) or culturally, including for biodiversity (e.g. parkland or wood pasture), in respect of each of the three subcategories

Sequential Tree Reference Number.

Species (common name).

Height Recorded in metres by inclinometer in each discrete area and estimated from the measured tree.

Stem diameter - Tree stem diameter in millimetres at 1.5 metres above adjacent ground level. For multi-stemmed trees a cumulative diameter is calculated.

Branch Spread in metres taken at four cardinal points.

Existing height in metres above ground level of:

- first significant branch and direction of growth (e.g. 2.4-N);
- canopy.

Life stage (e.g. young, semi-mature, early mature, mature, over-mature);

Comments including Physiological condition e.g. collapsing, the presence of any decay and physical defect and including further investigation of suspected defects that require more detailed assessment and potential for wildlife habitat.

Cond	Good (G)	Tree that appears to be in good condition and healthy without significant defects.
	Fair (F)	Tree that appears to be structurally sound at the time of inspection but due to defects is downgraded from good. These defects may influence its retention.
	Poor (P)	Tree which shows signs of poor health, in decline and with significant defects.
	Dead (D)	Tree which has died.

Life Expectancy: Estimated remaining contribution in years in terms of amenity (<10, 10+, 20+, 40+). This is assessed by examining the current situation of the tree.

Category In accordance BS 5837:2012 - Tree Categories (see copy of Table 1 from BS 5837:2012 below)

Recommendations.

RPA-R (m) - RPA Radius - The radius of an indicative circle of the RPA.

RPA (m²) - Root Protection Area (RPA) Area in metres squared.





APPENDIX C - Tree Schedule

Red – trees to be removed. Orange – trees to be pruned/managed. Black – No works or works not required for the purposes of planning.

Tag	Name	Ht (lwr crn ht)	Mean dia (stems)	N	E	S	W	1 st sig. branch (brg)	Life stage	Comments	Cond	Life Exp	Cat	Recommendations	RPA -R	RPA -A
T1	London Plane	26 (4)	1160	10	8	7	9	4	EM	Previously pollarded at 10 m now forming secondary crown. Nest in upper crown. Growing in raised area (0.3 m) & within 1 m gatepost/wall. Low retaining wall unstable adjacent to tree, minor disturbance to boundary wall.^^.	F	20+	B1	No work required.	14	609
T2	Hornbeam	10 (3)	250	3	4	1	4	3	SM	Tree located within hard surface area. Northern side of crown touching boundary wall. Two trees growing in 8 m2 of open bed. Crown lifted to current dimensions.	G	20+	C2	Maintain current management.	3	28
T3	Hornbeam	10 (3)	230	1	4	4	4	3	SM	Tree located within hard surface area. Northern side of crown touching boundary wall. Two trees growing in 8 m2 of open bed. Crown lifted to current dimensions.	G	20+	C2	Maintain current management.	3	24
T4	Sycamore	12 (2)	600	4	5	2	5	1	EM	Diameter estimated, canopy estimated, in neighbouring property. Diameter estimated. Canopy estimated. In neighbouring property. Regularly pruned (pollarded) to current dimensions. Vigorous new growth from pruning points. Espalier type form along wall. On highest point of bank sloping down to buildings at west.	F	20+	B1	Maintain current management.	7	163
T5	Sycamore	12 (2)	600	4	5	3	5	1	EM	Diameter estimated, canopy estimated, in neighbouring property. Diameter estimated. Canopy estimated. In neighbouring property. Regularly pruned (pollarded) to current dimensions. Vigorous new growth from pruning points. Previously pollarded at 4 m, now managed at 7 m. Espalier type form along wall. On highest point of bank sloping down to buildings at west.	F	20+	B1	Maintain current management.	7	163

Table 1 from BS 5837:2012 Trees in relation to design, demolition & construction – Recommendations.

Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	<ul style="list-style-type: none"> Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning). Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve.</i></p>			RED 
1 Mainly arboricultural qualities		2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	GREEN 
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	BLUE 
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	GREY 

APPENDIX D - Tree Protective Barriers – High Construction Pressure

The combined RPAs forming the Construction Exclusion Zone are to be protected by Tree Protection Barriers as per the recommendations in BS 5837:2012 (Figure 2). The photographs show correctly installed fencing.

This fencing is to be erected before any work commences on site, is to remain in situ undamaged for the duration of all work or each phase, and only to be removed once all work is completed and with the formal consent of the local planning authority.

The fencing will comprise (a minimum height of) 1.8 metre high welded wire mesh panels (or exterior grade plywood with a minimum thickness of 20 mm) supported on a braced scaffold framework with the uprights driven securely into the ground.



No vehicles or any construction traffic will be allowed to access the area identified for protection for the construction of this fence.

Other than works detailed within this method statement or approved in writing by the local planning authority, no works at all (including storage or dumping of materials) shall take place within the exclusion zones defined by the protective fencing.

The fencing is to carry waterproof warning notices denying access within the RPA.

Examples of configurations for steel mesh perimeter fencing systems are given in BS 1722-18.

APPENDIX E –Arboricultural Method Statement

No work may commence onsite and especially soil movement, stripping or stock piling may occur until the Construction Exclusion Zones have been established and protection measures implemented.

The following Arboricultural Method Statement will provide the required protection for trees onsite and therefore meet the requirements or conditions imposed by the (LPA). The following sequence will be followed:

- Erection of Tree Protection.
- Commencement of ground works / demolition.
- Construction.
- Authorised removal of tree protection.
- Remedial tree surgery.

Any variation to the method statement will need to be agreed with the local planning authority before commencing work.

This document is to be read in conjunction with the survey report. Any queries are to be referred to the arboriculturist.

The contractor will provide adequate training on the above for all relevant staff. This training will be carried out by or to the approval of a qualified arboricultural consultant. Any operatives undertaking work in the RPA/CEZ must be briefed using the method statement and supervised at all time by an arborist or supervisor experienced in working within the RPA.

All reasonable steps must be taken to ensure that no damage is done to the trunks or lower branches when using mechanical equipment such as excavators, cranes or aerial access platforms in the proximity of trees.

Tree Protection: The Construction Exclusion Zones shall be marked out by an Arboricultural Consultant and enforced by the erection of protective fencing. This protective fencing will be in compliance with the specification recommended in the British Standard 5837:2005 Figure 2 attached.

Once erected the Construction Exclusion Zone must be considered sacrosanct and off limits for any access or construction activity without the written consent of the designated arboricultural consultant. Affixed to every other panel or at 6 m centres will be all weather signs stating 'CONSTRUCTION EXCLUSION ZONE' --- KEEP OUT.

Storage: Areas for the storage of materials shall be outside the fenced Construction Exclusion Zones and be clearly marked. Oil, bitumen, diesel, and cement shall not be stored, mixed or discharged within 10 m of any trees. Areas for the storage or mixing of such materials shall be agreed at the pre-contract meeting and be clearly marked.

There will be no harmful works e.g. machinery movement, storage, cement mixing, cement washings etc within the RPA other than those specified in the method statement.

Planting of replacements for removed trees or new plants shall be done at the end of the construction phase or a time agreed with the LPA. Species, sizes and positions shall be agreed at the

pre-contact meeting and shall be marked on the landscape plan. The arboricultural consultant shall oversee planting.

No notice boards or power or telephone cables shall be attached to any of the trees.

Fires will not be lit in a position where flames can extend WITHIN 5 m of foliage or branches and must take account of the size of the fire and the wind direction including changes in that direction.

As a matter of course all arboricultural matters will be resolved in consultation with and subject to the approval of the planning authority through their Arboricultural Officer.

Only once all construction works are completed can the protective fencing can be removed.

Method statement for removal of hard surfacing and buildings near to trees

Weather conditions will be assessed to ensure soil smearing or compaction does not occur. Wet weather conditions must be avoided when carrying out this work.

Under no circumstances is any machinery to drive into the RPA or the area identified as the CEZ.

The uptake of the existing surfacing and buildings should be carried out from outside the RPA and from within the footprint of the existing surfacing or building where within the RPA of a tree.

The bitumen surface will be broken up by a 360° Excavator no larger than 5 tons or a tractor mounted backhoe. A toothed bucket can be used to break up and lift the wearing course. Care must be taken not to disturb the underlying soils.

All vehicles will remain on the existing hard surface that is to be retained. The vehicle may need to be repositioned regularly in order to avoid damage to the existing soil structure.

The excavation of the material must not extend into the soil underneath. In practical terms the bucket of the excavator must be used so that the teeth are horizontal so that any disturbance of the underlying soil is kept to an absolute minimum. Where the surfacing is very thin and/or roots are very near the surface, the digging should be done manually.

The rubble must not be stockpiled within the RPA of the tree and must be exported without crossing the RPA.

Due care and planning must be taken to ensure that the operational arcs of excavators do not damage the retained trees.

Where new surfacing is to be installed, if the depth of the old surface is insufficient, the wearing surface may need to be higher than existing in order to accommodate the appropriate thickness. There may be a requirement for a geo-textile membrane to be laid on the soil surface, but this is an engineering matter dependent upon soil type. The separation is beneficial for root development.

Where the old surface is taken up and not replaced, the infill should be of good quality topsoil laid without compaction.

Once the hard surfacing is removed, suitable protective fencing is to be erected at the boundary of the Construction Exclusion Zone (CEZ).

After removal of the hard surfacing, digging to proceed with hand tools only. Great care must be taken not to damage any roots that are encountered.

An arboriculturist must directly supervise the cutting of roots. The cuts must be made perpendicular to the root, leaving the smallest wound. Cuts are to be made with a sharp tool, such as a pruning saw or secateurs, to leave a clean surface with no ragged edges. The wounds are not to be treated with ant wound product.

No roots greater than 25 mm in diameter are to be severed without the consent of the supervising arboriculturist.

Where excavations containing retained roots are to be left open, clean hessian sacking is to be wrapped around the roots.

All roots greater than 25 mm in diameter are to be retained and worked around. Where clumps of smaller roots are encountered they are to be retained.

Arboricultural Site Considerations – To be displayed in a prominent place.

Tree Protective Barriers must be regarded as sacrosanct, and must not be removed or altered without prior consultation with either the Local Planning Authority (LPA) or the arboricultural consultant responsible for the site supervision.

Ground protection must not be lifted or removed without prior consultation with either the LPA or the arboricultural consultant responsible for the site supervision.

Damage caused to protective fencing or ground protection must be reported to the site supervisor to ensure efficient repair.

No materials, chemicals, machinery or vehicles must be stored within the trees Root Protection Area (RPA) as defined on the Tree Constraints Plan (TCP) and identified on site by fencing and above ground root protection.

No materials must be rested against a tree's trunk or machinery chained to it.

No pruning of trees may be undertaken by anyone other than an arborist, and all work must be approved by the supervising arboricultural consultant.

Any physical damage caused to a tree retained on site must be reported to the site manager so remedial work can be undertaken without delay.

Builder's sand, which contains salt, must not be used to back fill excavation within or in close proximity to tree roots, as this can have a toxic affect. Sharp sand can be used instead.

Material that will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, must not be discharged within 10 m of a tree stem.

Fires must not be lit in a position where their flames can extend to within 5 m of foliage, branches or trunk. This will depend on the size of the fire and wind direction.

Notice boards, telephone cables or other services must not be attached to any part of a tree



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