Appendix A

Tree Survey
Data
&
Plan

Tree Survey Key

Tree No.	Tree Number - cross-referenced with tree numbers shown on Tree Survey Plan.
Hgt (m)	Height - estimated in metres.
Dia. at 1.5m (mm)	Stem Diameter - in millimetres recorded at 1.5m above highest adjacent ground level.
No. of Stems	Number of main stems arising from below 1.5m above ground level. M = Multi-stemmed tree.
Crown Spread N,E,S,W (m)	Given as a radial measurement in metres from the centre of the stem to the extremity of the canopy at the four main compass points NESW.
Crown Cl/nce (m)	Crown Clearance - Height in metres of crown above adjacent ground level.

Age Class

Y	Young	Staked or recently established tree at the fast growing early stage of establishment.
SM	Semi mature	An established tree at a stage of rapid growth with increasing future growth potential
M	Mature	A tree that is at a stage of constant growth nearing ultimate canopy size.
V	Veteran	A mature tree, often of great ecological or heritage importance, that has reached a stage of natural decline.

Physiological Condition

Provides some evidence of the general well being of the tree. Assessed by comparison of growth characteristics with similar species in the locality and/or from personal experience.

Given in four classifications:

G	Good
F	Fair
P	Poor
D	Dead

Preliminary Mgt Recommendations for tree work to bring the trees to an acceptable and safe standard in context with the current site use.

Category Category of quality assessment allocated to a tree derived from an individuals potential contribution to a site: considering tree health, condition, age and value. Full description given in Table 1 of BS5837:2012 '*Trees in Relation to Design, Demolition and Construction*'.
Trees are colour coded on the attached Tree Survey plan.

Given in four categories:

A - Green - Trees of high quality and value (likely to contribute a further 40+ years)

B - Blue - Trees of moderate quality and value (likely to contribute a further 20+ years)

C - Grey - Trees of low quality and value (likely to contribute a further 10+ years)

U- Red - Trees which may require removal on health and safety grounds, be in decline, infected by significant pathogens or, due to their current condition would lose their existing value within 10 years.

A provisional category may be allocated pending further advised inspection/tree work.

RPD (m) Root Protection Distance - The distance in metres of the radius of a circle depicting the root protection area required for an individual tree.

RPA (m) Root Protection Area – The total area of ground to be protected around an individual tree.

(p) Provisional quality assessment category – the highest expected category is allocated to the tree based on an incomplete preliminary visual inspection due to limited access ie. ivy clad, basal growth, dense undergrowth or off-site tree.

(e) Estimated figure due to obstruction such as ivy or off-site tree.

Tree Survey Data

TREE NO	SPECIES	HEIGHT (m)	DIAMETER AT 1.5m or arf (mm)	NO. OF STEMS	CROWN SPREAD N,E,S,W (m)				CROWN CL/NCE (m)	AGE CLASS	PHYSIOLOGICAL CONDITION	STRUCTURAL CONDITION	PRELIMINARY MGT RECOMMENDATIONS	ESTIMATED REMAINING CONTRIBUTION	CATEGORY	RPD (m)	RPA (m2)	NOTES
T1	Eucalyptus	6	180	1	3	1	2	3	2	Young	Good	Good		>40	C1	2.2	15	
T2	Leyland Cypress	7	480e	1	2.5	2.5	2.5	2.5	2	Semi-mature	Poor	Poor		< 10	U	5.8	104	Dieback.
T3	Aspen	11	560	1	5	3	4	4	4	Mature	Good	Poor		10-20	C1	6.7	142	Extensively decayed stem.
T4	Prunus spp.	5	110	1	5	2	1	2	1	Semi-mature	Good	Fair		20-40	C1	1.3	6	Suppressed.
T5	Lombardy Poplar	20	910	1	4	4	4	4	5	Mature	Good	Fair		20-40	B1	10.9	375	Main limb failed at 9m.
T6	Lombardy Poplar	20	690	1	3	4	4	1	8	Mature	Good	Good		>40	A1	8.3	215	
T7	Lombardy Poplar	20	700e 500e	2	4	3	4	1	4	Mature	Good	Good		>40	A1	10.3	335	
T8	Lombardy Poplar	20	640	1	3	2	3	2	7	Mature	Good	Good		>40	A1	7.7	185	

TREE NO	SPECIES	HEIGHT (m)	DIAMETER AT 1.5m or arf (mm)	NO. OF STEMS	CROWN SPREAD N,E,S,W (m)				CROWN CL/NCE (m)	AGE CLASS	PHYSIOLOGICAL CONDITION	STRUCTURAL CONDITION	PRELIMINARY MGT RECOMMENDATIONS	ESTIMATED REMAINING CONTRIBUTION	CATEGORY	RPD (m)	RPA (m2)	NOTES
T9	Oak	9	150 310 170	3	7	4	3	5	2	Semi-mature	Good	Fair		>40	C1	4.6	67	Suppressed.
T10	Lombardy Poplar	20	860	1	4	6	4	1	5	Mature	Good	Fair		>40	A1	10.3	335	
T11	Holly	6	160	1	2	2	2	2	1	Semi-mature	Good	Good		>40	C1	1.9	12	
G1	Leyland Cypress	3.5	<200	1	1	1	1	1	0	Young	Good	Good		>40	C2	2.4	18	Hedge.
T12	Birch	12	390	1	5	4	5	5	1.5	Mature	Good	Good		20-40	B1	4.7	69	
T13	Birch	10	260	1	3	5	3	2	3	Semi-mature	Fair	Fair		10-20	C1	3.1	31	Reduced vigour.
T14	Birch	8	190	1	5	2	1	3	2	Semi-mature	Good	Good		>40	C1	2.3	16	Suppressed.
T15	Ash	7	120e	1	2	2	2	2	2	Young	Good	Good		>40	C1	1.4	7	
T16	Sycamore	7	120e	1	2	2	2	2	2	Young	Good	Good		>40	C1	1.4	7	

TREE NO	SPECIES	HEIGHT (m)	DIAMETER AT 1.5m or arf (mm)	NO. OF STEMS	CROWN SPREAD N,E,S,W (m)				CROWN CL/NCE (m)	AGE CLASS	PHYSIOLOGICAL CONDITION	STRUCTURAL CONDITION	PRELIMINARY MGT RECOMMENDATIONS	ESTIMATED REMAINING CONTRIBUTION	CATEGORY	RPD (m)	RPA (m2)	NOTES
T17	Leyland Cypress	13	450e	1	4	4	4	4	0	Mature	Poor	Poor		10-20	C1	5.4	92	
T18	Apple	5	300e	1	4	3	5	5	3	Mature	Good	Good		>40	C1	3.6	41	
T19	Lawson Cypress	5	150e	1	1.5	1.5	1.5	1.5	0	Young	Good	Good		>40	C1	1.8	10	
G2	Leyland Cypress	12	<300	1	3	1	4	1	0	Semi-mature	Fair	Fair		20-40	C2	3.6	41	Off-site, reduced vigour.
T20	Leyland Cypress	14	500e	1	4	4	4	4	1	Mature	Poor	Poor		< 10	U	6.0	113	Low vigour.
T21	Purple Plum	9	240 200	2	5	2	4	3	2	Mature	Good	Fair		10-20	C1	3.7	44	
G3	Young trees & shrubs	4 to 9	<150	1	2.5	2.5	2.5	2.5	0	Young	Good	Good		>40	C2	1.8	10	
T22	Leyland Cypress	10	400	1	3	3	3	3	1	Semi-mature	Poor	Poor		< 10	U	4.8	72	Off-site, reduced vigour.
T23	Pride of India	7	140 140 110 90	4	2	4	4	4	2.5	Young	Good	Fair		20-40	C1	2.9	27	Included bark at base.

TREE NO	SPECIES	HEIGHT (m)	DIAMETER AT 1.5m or arf (mm)	NO. OF STEMS	CROWN SPREAD N,E,S,W (m)				CROWN CL/NCE (m)	AGE CLASS	PHYSIOLOGICAL CONDITION	STRUCTURAL CONDITION	PRELIMINARY MGT RECOMMENDATIONS	ESTIMATED REMAINING CONTRIBUTION	CATEGORY	RPD (m)	RPA (m2)	NOTES
T24	Lawson Cypress	10	510	1	1.5	1.5	1.5	1.5	0	Semi-mature	Good	Good		10-20	C1	6.1	118	Tear-out from base to 2m.
T25	Magnolia	4	170	1	4	4	4	4	0	Semi-mature	Good	Good		20-40	C1	2.0	13	
G4	Apple x 4	4	<200	1	3	3	3	3	1	Semi-mature	Fair	Fair		20-40	C2	2.4	18	
T26	Leyland Cypress	10	400e	1	3	3	3	3	2	Mature	Poor	Poor		< 10	U	4.8	72	Reduced vigour.
T27	Lawson Cypress	6	200e	1	2	2	2	2	0	Young	Good	Good		>40	C1	2.4	18	
T28	Lawson Cypress	6	200e	1	2	2	2	2	0	Young	Good	Good		>40	C1	2.4	18	
T29	Yew	4	90e	1	2.5	2.5	2.5	2.5	0	Young	Good	Good		>40	C1	1.1	4	
T30	Hawthorn	7	See notes	7	4	4	4	4	2	Semi-mature	Good	Good		10-20	C1	6.1	118	Stem dia's. = 3 x 100, 270, 160, 210, 300mm
G5	Mixed Species	5 to 7	<150	1	2	2	2	2	2	Young	Good	Fair		20-40	C2	1.8	10	Sycamore, Prunus, Aspen, Lombardy Poplar, self-sown outgrown boundary hedge.

Table 1 (BS5837:2012) – Cascade Chart for Tree Quality Assessment.

Category & 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	• 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 (i.e. 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 NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category & Definition	**Criteria — Subcategories**			
	1 Mainly arboricultural values	**2 Mainly landscape values**	**3 Mainly cultural values, including conservation**	
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 essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B **Trees of moderate quality** With an estimated remaining life expectancy of at least 20 years	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	MID BLUE
Category C **Trees of low quality** With an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	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 B

Tree Removal Plan

Appendix C

Tree Protection Measures

- **Tree Protection Plan**
- **Tree Protection Specification**
- **Tree Protection Warning Sign**

Principles of Tree Protection

i) The majority of damage to tree root systems on development sites occurs either at the early stages of development when protection measures have not been installed promptly enough, or at the final stages of development when protective fencing, having been adequate throughout development, is taken down prematurely.

ii) The tree protection measures described are to be installed prior to the commencement of any other works associated with the proposal.

iii) The site manager is to be made aware of their responsibility to ensure tree protection measures are maintained throughout the development of the site. Casual daily inspections of fencing and a weekly written record of inspection is recommended.

iv) Sylvanarb provides the service of periodic monitoring of tree protection measures, advising on any potentially harmful operations likely to damage trees. This service includes submitting inspection reports to the LPA tree officer if required.

General Precautions

- No materials that are likely to have an adverse effect on tree health such as oil, bitumen or cement will be stored or discharged on unsealed surfaces within 10 metres of the trunk of a retained tree. Consideration for the slope of the ground is to be considered when discharging or storing materials that are potentially harmful to trees.

- No fires to be lit where flames could extend to within 5m of foliage, branches or trunks of trees.

- No signs, cables or other items are to be attached to trees.

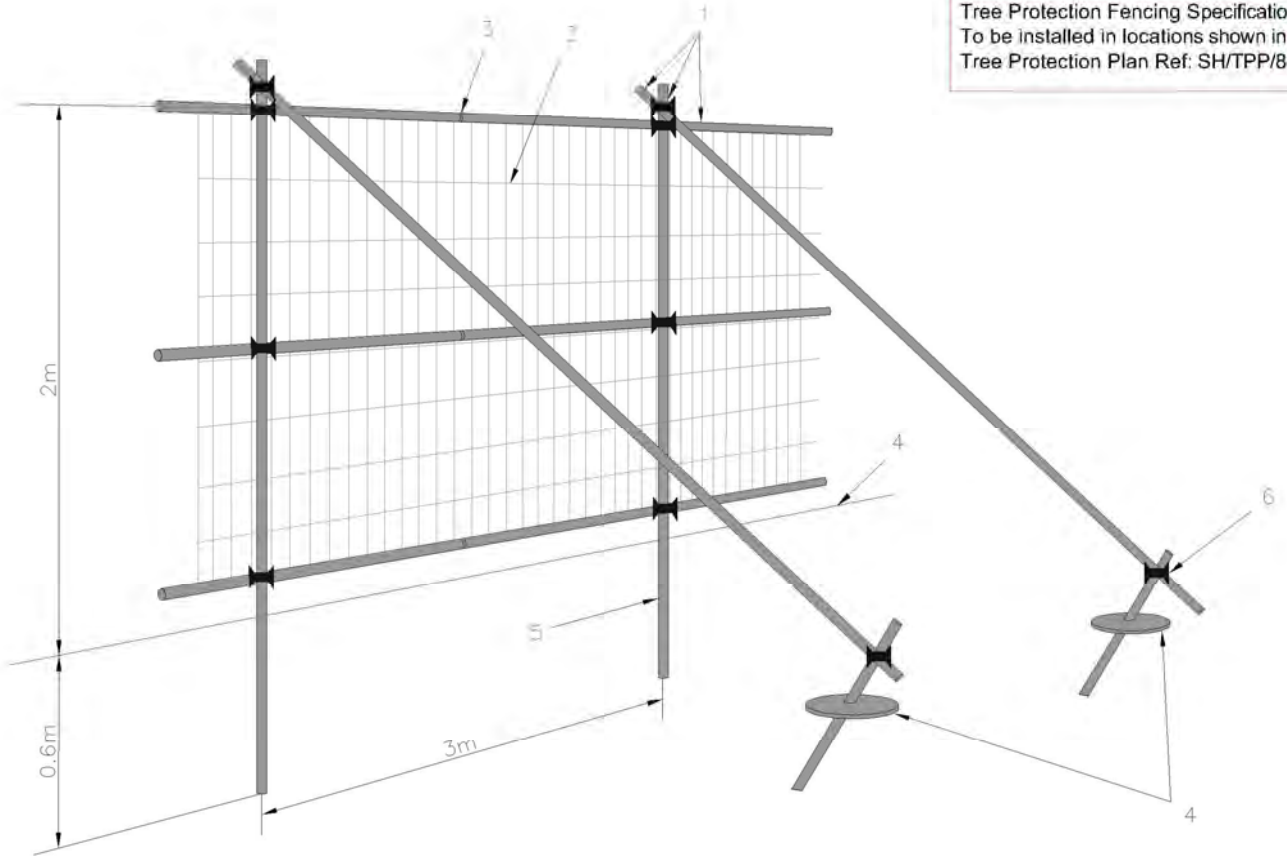
- Details of service runs have not been provided. Details of any excavations required for the provision of drainage or services are to be submitted to the LPA Tree Officer for approval.

- Service runs will ideally avoid Root Protection Areas and be laid within one combined trench. Trenching operations are to be carried out in accordance with NJUG Vol.4.

- Should tree roots over 25cm in diameter be encountered whilst carrying out any excavations within the vicinity of retained trees advice from the arboricultural advisor or LPA tree officer is to be sought prior to continuing with works.

- Any proposed level changes within Root Protection Areas are to be approved by the Local Authority Tree Officer prior to work being carried out.

Tree Protection Fencing Specification
To be installed in locations shown in RED on
Tree Protection Plan Ref: SH/TPP/888-03



BS5837:2012 - Fig.2
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TYPE 1 Tree Protection Fencing

Site Address:

Sunset Hill
Hillbrow Road
Bromley

Client:
Condo Properties Ltd

By: C. Barkel

Date: Oct 2014

Ref: SHL/TPF/Spec1

Scale: NTS

1 Standard Scaffold Poles
2 Heavy guage 2m tall galvanized tube and welded mesh infill panels (i.e.Heras)
3 Panels secured to uprights and cross-members with wire ties
4 Ground Level
5 Uprights driven into ground until secure (min. depth 0.6m)
6 Standard scaffold clamps

Nb: Where scaffold tubes cannot be driven into ground due to hard surfacing fence panels are to be anchored using proprietary blocks and block straps to secure into position.


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

Appendix D

Temporary Ground Protection Specification

Temporary Ground Protection Specification

i) Tree protection requirements are to be included in the tender specification when seeking quotes from contractors to carry out the building works.

ii) Prior to installing ground protection the contractor is to determine whether the area is to be used for vehicles/plant or for pedestrian use only. The following specifications are then to be used accordingly as recommended in BS5837:2012:

1. For pedestrian use only.

a) Side-butted scaffold boards placed over a layer of compressible material.

- Lay a porous geotextile membrane over the area to be protected.
- Spread a layer of compression-resistant material over the geotextile. Woodchips resulting from tree pruning operations may be used and spread to a depth of 100mm.
- Lay side-butted scaffold boards or similar boarding over the compressible layer.

b) Scaffold boards suspended over the ground on a scaffold framework.

- Install a raised scaffold framework across the area of protection.
- The framework is to cover the entire area of ground to be protected (see Tree Protection Plan) and form a level platform to support the suspended floor.
- Affix side butted scaffold boards or similar to the framework to form a suspended floor over the protected area.

2. For vehicles/plant up to a gross weight of 2 tonnes.

a) Proprietary ground protection panels, such as *Traxpanels* from TPA Ltd, laid over compression-resistant material.

- Lay a porous geotextile membrane over the area to be protected.
- Spread a layer of compression-resistant material over the geotextile. Woodchips resulting from tree pruning operations may be used and spread to a depth of 150-200mm.
- Install proprietary ground protection panels across area of protection.

iii) Ground protection is to be installed as shown on the Tree Protection Plan at Appendix B.

iv) The special ground protection measures described are to be installed at the same time as the tree protection fencing is erected and prior to any other development works being carried out on the site.

v) TGP and Tree Protection Fencing is to be maintained throughout the development phase and through to completion of the project.

vi) The site manager is to be made aware of their responsibility to ensure tree protection measures are maintained throughout the development of the site. Casual daily inspections of fencing and a weekly written record of inspection is recommended.

TREE PROTECTION MEASURES ARE NOT TO BE ALTERED OR REMOVED WITHOUT THE PRIOR APPROVAL OF AN ARBORICULTURAL ADVISOR OR THE LPA TREE OFFICER.