ARBORICULTURAL IMPLICATION STUDY
AND
TREE PROTECTION STRATEGY

Proposed development at:

Kings College Court
55 Primrose Hill Road
London
NW3 3EA

Produced For: Jim Garland Architects Limited
Prepared By: Michael Honey, Dip. Arb. (RFS), F.Arbor.A. BA Hons
Reference: MPH/0421/RHB
Date: 30 September 2013

Prepared for: Jim Garland Architects Limited

Site Address: Kings College Court, 55 Primrose Hill Road, London

Report Prepared By: Michael Honey, Dip. Arb. (RFS), F.Arbor.A. BA Hons

Date: 30 September 2013

▪ Instructions

Further to your recent instructions I have pleasure in submitting the following report.

▪ Background

The report concerns the above site which consists of a residential estate including terraced housing within Tobin Close and a single multi storey housing apartment block, Kings College Court, all set within their own grounds and gardens.

The site is subject to a development proposal which consists of the remodelling and the extension upwards of the existing apartment block Kings College Court and some upgrading and resurfacing of the car parking and access areas as outlined upon the proposal drawing included within Appendix 2.

▪ Scope of Report

a) The following report assesses all the trees on site in terms of their health and safety, amenity value and future potential. The trees were numbered and plotted on the topographical and proposal drawing included within Appendix 2. The schedule of trees is included within Appendix 2.

b) The scope of this report is to assess the development proposal for this site with respect to its impact upon existing trees. The report determines which trees should be retained and which should be removed. All interfaces between the development and the trees, their root zones and their crowns are assessed and discussed.

c) Root Protections Areas for those trees of amenity value graded B and above are also listed and with reference to BS5837;2012 'Trees in Relation to Design, Demolition and Construction' Annexe D and as the radius of the Root Protection Areas.

d) The quality and future growth potential of the trees likely to be affected by the development are assessed.

e) The report details those protective measures that will be necessary for the successful protection of retained trees during the construction process.

f) Guidance is given with respect to the implementation of protective procedures and measures in relation to specific site sensitive trees and general site organisation and construction logistics.

g) The use of a Tree Protection Method Statement is described as a potential tool to assist the successful logistical implementation of tree protective measures during the construction process. The general principles involved in the formation of a method statement and its contents are outlined.

▪ Site Description

The site is a residential estate located within an urban area of north west London consisting of a mixture of residential and commercial/retail land use. The area has an established population of mature trees at modest densities consistent with this urban land use.

The estate consists of a complex of terraced houses within Tobin Close to the west and the large multiple residential block Kings College Court located to the east. Access driveways and car parking surround the residential buildings, including the main access driveway at the north west corner, with managed gardens and grounds predominantly occupying the eastern boundaries of the site and the south eastern garden. The majority of established trees, including several middle aged and mature specimens are located at the eastern boundary and within the south eastern garden.

▪ Design Proposal and Tree Retention

The proposal includes the retention and remodelling of the existing building Kings College Court and as such will have a very limited impact upon the surrounding trees.

All the sites important trees can be retained with little impact upon them including all the A and B grade specimens located along the eastern boundary and within the south eastern garden area.

Only two small insignificant trees will be removed to facilitate the development and which includes one of the pair of small inappropriate Lawson Cypress T10 and an insignificant Cherry T13. The removal of these trees will have no impact upon the local landscape.

The remodelling of the building will not have any impact upon the Root Protection Areas of those trees to be retained. The exception is the new access ramp and vestibule at the eastern elevation which will encroach marginally within the Root Protection Area of the Sycamore T12. Such marginal encroachment, less than 2% of the trees total Root Protection Area, will have no significant impact upon this tree. No specific protective measures are therefore required with respect to the construction process and the trees to be retained beyond the general protective measures listed within the following report.

A new mezzanine cycle store will be constructed upon and supported by the existing southern car park hardstanding and will have no impact upon the surrounding trees.

Similarly driveway and car park upgrading and resurfacing will be confined to within the layout of the existing driveway and car park areas and will have no impact upon the retained trees.

- **Protection of Trees During Construction**

General Principles

Existing trees can be easily damaged directly through root severance and inadvertently through soil compaction which disrupts the soil structure causing asphyxiation of roots and subsequent root dysfunction. Spillage of toxic materials can also cause root death. Protection for selected trees for retention is essential to ensure their lasting effect on the proposed scheme which will include a proportion of the tree/soil zone.

It is equally important therefore to ensure the protection of trees both above and below ground. Guidance is provided in British Standard 5837, 2012, 'Trees in Relation to Design, Demolition and Construction' as to the protection of existing trees before, during and after development.

Additionally, the Arboricultural Advisory and Information Service give guidance specifically with respect to driveways in the publication 'Through the Trees to Development'.

Trenching close to trees can have a serious detrimental effect on tree physiology and stability. It will be necessary to consider alternatives to open trenching near trees in order to avoid damage. Guidance is given in the National Joint Utilities Group publication 'Guidance for the Planning Installation and Maintenance of Utility Services in Proximity to Trees'.

Protective Distances and Fencing

With reference to BS5837, 2012, recommendations for the Root Protection Areas for those trees of amenity value has been included within the Tree Schedule and as the radius of the Root Protection Areas.

These Root Protection Areas should be included on a separate drawing as part of the tree protection plan. The Root Protection Areas where possible and appropriate should be enforced by the use of robust protective fencing as outlined in BS5837, 2012.

In this instance would recommend fencing 2 metres high consisting of a scaffold framework supporting weldmesh panels (fig. 2 BS5837, 2012, Appendix 3).

Where construction processes are required to within the minimum protective distances the ground between the protective fencing and building should be protected by geo-textile fabrics beneath boarding and separated by a 100mm woodchip compression layer with reference to BS5837;2012 6.2.3.3.

High visibility tapes bearing the inscription 'Tree Retention Area Keep Out' should identify protective areas.

Tree Protection and Utilities

The location and siting of all utilities should if possible be outside of the minimum Root Protection Area as enforced on site. Where utilities need to encroach upon these areas thrust bore excavation techniques should be considered. I understand in this instance all utilities will use the existing utility and service runs and with no impact therefore upon the trees to be retained.

Tree Protection and Storage of Materials

All materials for construction purposes should be carefully stored outside of the enforced tree protection areas. All toxic substances such as oils, bitumens and residues from concrete mixing should be retained by effective catchment areas.

In this instance sufficient storage areas exist within the existing hardstanding and vehicle parking areas with no impact upon the trees to be retained.

Landscaping Works

All landscaping should avoid soil regrading and disturbance within the tree protective areas. This includes cultivations for the preparation of soil for turf, seeding or planting.

- **Specific Tree Retention and Protection**

Site Access for Construction Traffic

Construction traffic can access to site from the existing access driveway of the north west corner and can utilise all the existing driveway and vehicle hardstanding areas with no impact upon the retained trees.

Domestic Hardstanding and Car Parking

The upgrading of the driveway and car parking areas, including some resurfacing, will retain the existing driveway and hardstanding area footprint with no impact therefore on the trees to be retained. Any resurfacing of this hardstanding within the trees Root Protection Areas should maintain the subbase intact to ensure no disturbance of the soil and root zone beneath.

Construction

Remodelling of the building will not increase the existing construction footprint and all construction activities will be outside of the Root Protection Areas of the trees to be retained.

The exception is the eastern vestibule and access ramp which will encroach marginally upon the Root Protection Area of the Sycamore T12 and less than 2% of the trees total Root Protection Area. Such minimal encroachment will have no significant impact. No specific protective measures are therefore required. Light construction processes including pedestrian activity may be required within the trees Root Protection Areas. The robust fencing specified should first be erected at a position to provide construction access and the ground between the fencing and the construction should be protected by boarding overlying a geotextile layer and separated by a 100 millimetre woodchip compression layer and with reference to BS5837;2012 clause 6.2.3.3.

A raised mezzanine for cycle parking will be constructed along the southern edge of the existing southern car park area as outlined upon the proposal drawing. This structure will be supported entirely from the existing parking and will be cantilevered slightly southwards over the grassed area with no impact upon the adjacent trees.

- **Tree Protection Method Statement**

Before construction works begin and in order to ensure that all the above protective measures are enforced a Method Statement should be devised outlining a logical framework and a reasonable sequence of events and supervisory procedures.
The tree protection method statement should include a drawing depicting all individual and general tree protective distances. The drawing should also depict all areas designated for the storage of materials including catchment areas for toxic fluids, and general access routes for utilities and services.

All protective fencing should be specified in detail for each tree and area.

The tree protection method statement should also include a schedule of the sequence of events to ensure all protective measures are adhered to, the proposed draft format of which is outlined. All relevant construction and development personnel should be informed with respect to the method statement and should be made available to them.

Site supervision to ensure that protective measures are employed and protective distances are strictly enforced should be carried out by both site agent and designated arboriculturalists. This to also include regular visits by the arboriculturalists during construction and a final visit on completion. A reporting procedure should also be implemented and agreed.

This protective method statement scheme can be endorsed by planning conditions, agreement or obligations as any appropriate arrangement between the developer and planning authority. Further discussion between these relevant parties might therefore be necessary in order to finalise this document.

- **Summary**

The proposal, which includes the retention and remodelling of the existing building Kings College Court will have a very limited impact upon the surrounding trees. All the trees of amenity value including the A and B grade trees of prominence to the local landscape located at the eastern boundary and south east garden will be successfully retained.
The remodelling and retention of the existing building and upgrading of the existing vehicle hardstanding footprint will ensure that the construction process will be outside of the majority of the trees Root Protection Areas and with no significant impact upon them.
The exception is the creation of the two new disabled parking bays within the Root Protection Area of the London Plane T8. This will however be less than 5% of the trees total Root Protection Area and will therefore have no significant impact upon this specimen.

With the implementation of this specific and the general protective measures listed the proposal will have no impact upon the sites important tree and their continued contribution to the local landscape.

This concludes our report but if we can be of any further assistance, or should you require any further information, please do not hesitate to contact us.

Michael Honey
HONEY TREE SPECIALISTS

TREE SCHEDULE

Inspection date:30 September 2013
Client:Jim Garland Architects Ltd
Site: Kings College Court, 55 Primrose Hill Road, London

REF: MPH/0472/RHB
Surveyor: Michael Honey

Tree No	English Name	Height m	DBH cm	Spread m	Vigour	Age	BS Cat 2012.	BS RPA 2012 (Radius)	Comments
T1	Beech	5	35	3N 5S 3E 3W	N	Y	C		Poor suppressed tree of poor form with badly pruned top.
T2	Three Lime	14 to 15	38, 32 & 33	4 to 5	N	Middle aged	B	4.5m	Prominent group historically pollarded at 3 metres with decay to old pollard points. Extensive regrowth emanates from these points of structural weakness, future crown reduction advised to stabilise.
T3	Group of 3 Leyland Cypress	10	35 to 38	4	N	Y	C		Inappropriate trees of poor form, poorly pruned by top reduction.
T4	Lime	16	60	5 all aspects	N	Middle aged	B	7.2m	Prominent tree, basal wound with decay at 0.5 metres southern side of stem. Some root damage and decay evident but difficult to evaluate due to thick ivy and sucker growth. Remove all ivy, clear base and reinspect.
T5	Silver Maple	17	53	5 all aspects	N	Y/M	B	6.3m	Prominent tree, tight included unions of codominant spars characteristic of species, monitor.
T6	Birch	13	30	3N 3S 5W 3E	N	Y/M	B	3.6m	Slightly suppressed tree with natural lean.

Notes:

As per BS5837, 'Trees in Relation to Design demolition on construction', 2012.

1. Height describes the height of the tree from ground level.
2. DBH is the diameter of the trunk at 1.5m from ground level or as defined in the text.
3. Spread refers to the crown radius from the trunk centre and is expressed as an average or NSEW aspect, as appropriate.
4. Age range is represented as Y-young, SM-Semi mature, M-mature, OM-over mature.
5. Vigour is described as N- Normal, L- Low or D-Dead and refers to the general condition of the tree.
6. BS Cat. refers to BS 5837, 2012 retention category table1, where A category retention most desirable(life expectancy 40 yrs +) B retention desirable (20 yrs +) C could be retained (min. 10 yrs) and U (remove). Colours:- A=LIGHT GREEN B=MID BLUE C=GREY U=DARK RED where indicated on plans.
7. BS RPA is BS5837, 2012 recommended Root Protection Area given as the radius of a circle equal to that area; The final RPA may not be represented by a circle within tree protection drawings.

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Tree No	English Name	Height m	DBH cm	Spread m	Vigour	Age	BS Cat 2012.	BS RPA 2012 (Radius)	Comments
T7	Group of self-sown Prunus/plum species, one self-sown Ash	5 to 7	10 to 15	2 to 3	N	Y	C		Self-sown trees of poor form.
T8	London Plane	18	100	9N 8S 7E 10W	N	M	A	12m	Large prominent tree to street scene.
T9	2 Malus	4 & 3	10	2	N	Y	C		Insignificant ornamental trees.
T10	2 Lawson Cypress	4	12	1	N	Y	C		Insignificant ornamental trees, too close to building.
T11	Ash	5	14	2	N	Y	C		Youthful street tree of poor form.
T12	Sycamore	17	58	5N 5S 5W 7E	N	M	A	6.9m	Good tree, prominent to street scene.
T13	2 Cherries	5	10 kto 12	2	N	Y	C		Poor self-sown trees.

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Tree No	English Name	Height m	DBH cm	Spread m	Vigour	Age	BS Cat 2012.	BS RPA 2012 (Radius)	Comments
T14	Leyland Cypress	4	14	1	N	Y	C		Untidy suppressed conifer.
T15	Tree of Heaven	14	34	5N 4S 3E 4W	N	Middle aged	B	4.2m	One of prominent group of trees of moderate form.
T16	Cherry	5	22	3 all aspects	N/L	M	C		Untidy ornamental tree.
T17	Lime	17	47	3N 2S 3E 5W	N	M	C		One of prominent pair of trees but extensively decayed stem at 4 to 7 metres with decayed old pruning points at 8 metres. Limb over highway severely decayed at elbow. This tree should be reduced by 40% to stabilise. Limb over highway should be reduced by 50%.
T18	Lime	19	60	3N 6S 6E 2W	N	M	B	7.2m	Prominent tree, old pollard point at 5 metres may harbour decay. Previously crown reduced to stabilise.
T19	Lime	15	30	4N 3S 6E 3W	N	Y/M	B	3.6m	Reasonable specimen, slightly unbalanced crown.
T20	Tree of Heaven	15	42	6 all aspects	N	Middle aged	B	5.1m	Reasonable member of prominent group.

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Tree No	English Name	Height m	DBH cm	Spread M	Vigour	Age	BS Cat 2012.	BS RPA 2012 (Radius)	Comments
T21	London Plane	16	73	5N 7S 6E 6W	N	Middle aged	B	8.7m	Good member prominent group. Reasonable specimen.
T22	Norway Maple	15	38	4 all aspects	N	Middle aged	B	4.5m	Leaf spoils prevented inspection of base, remove leaves to reinspect. Union of codominant spars at 2 metres, slight displacement and weakness, reinspect in 2 years.
T23	Birch	12	26	4N 1S 2E 1W	N	Middle aged	C		Poor suppressed leaning tree. Dense ivy prevented inspection of stem, remove ivy and reinspect.
T24	Cotoneaster	4	Multi	4	N	M	C		Large shrub.
T25	Deodar Cedar	16	48	4N 7S 5E 3W	N	Y/M	B	7.2m	Reasonable tree despite slightly one sided leaning form.
T26	Prunus Plum group	4	10 to 12	3	N	M	C		Poor ornamental group.
T27	Prunus/Plum Group	5	15 to 30	4 to 5	N	M	C		Untidy unmanaged boundary screen.

Notes:

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Tree No	English Name	Height m	DBH cm	Spread m	Vigour	Age	BS Cat 2012.	BS RPA 2012 (Radius)	Comments
T28	Tree of Heaven	13	50	5N & S 2E 5W	N	M	B	6m	Prominent but one sided tree as a result of removal of neighbouring specimens. Pronounced lean, monitor.
T29	Tree of Heaven	5	18	1N 3S 2E 2W	N	Y	C		Small youthful tree
T30	Tree of Heaven	15	60	6 all aspects	N	M	B	7.2m	Prominent specimen, some decay possible at historic pollard point at 4 metres.
T31	Robinia	13	46	5 all aspects	N	M	C		Tree with pronounced lean and decay to base. Reinspect next year.

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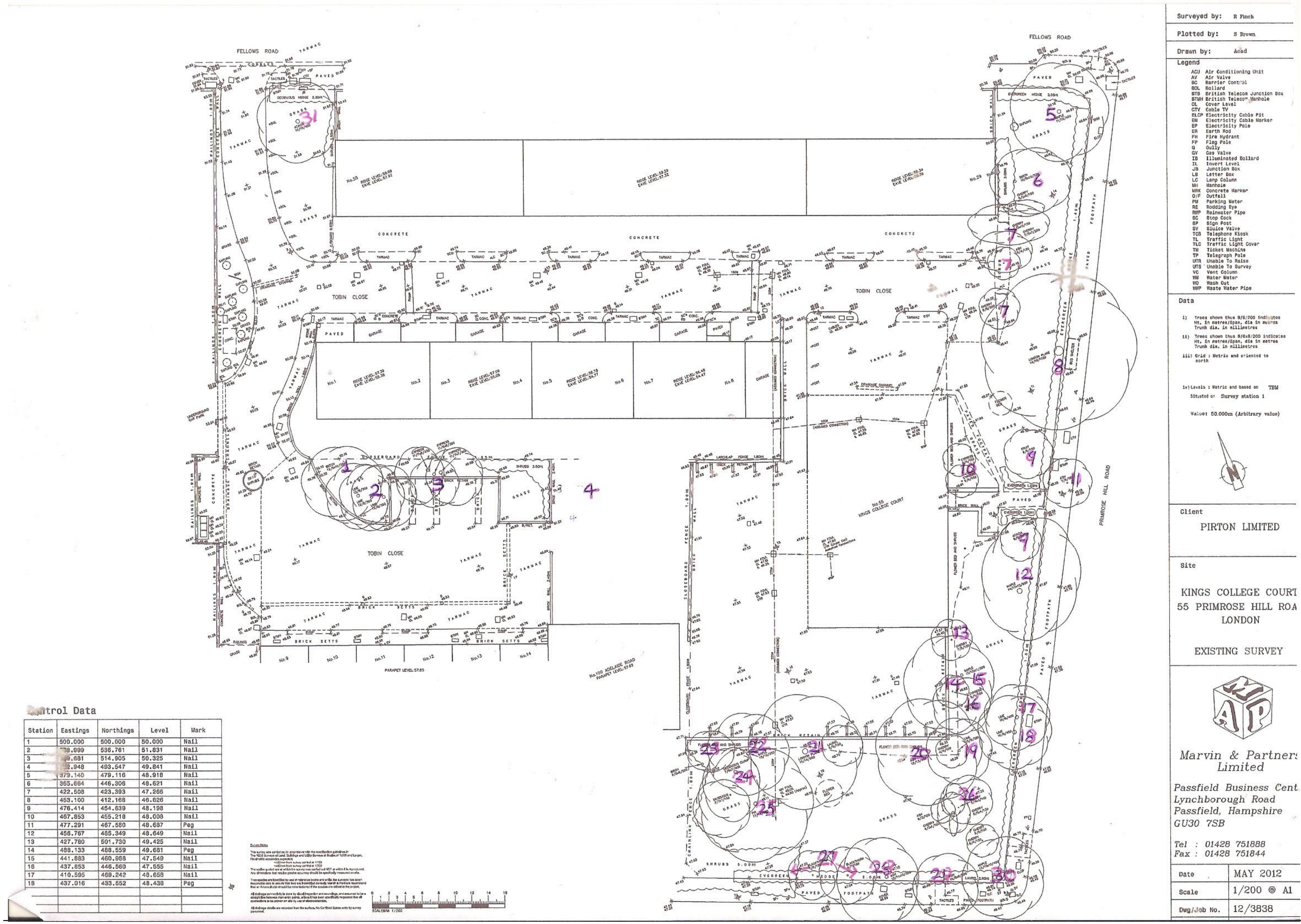
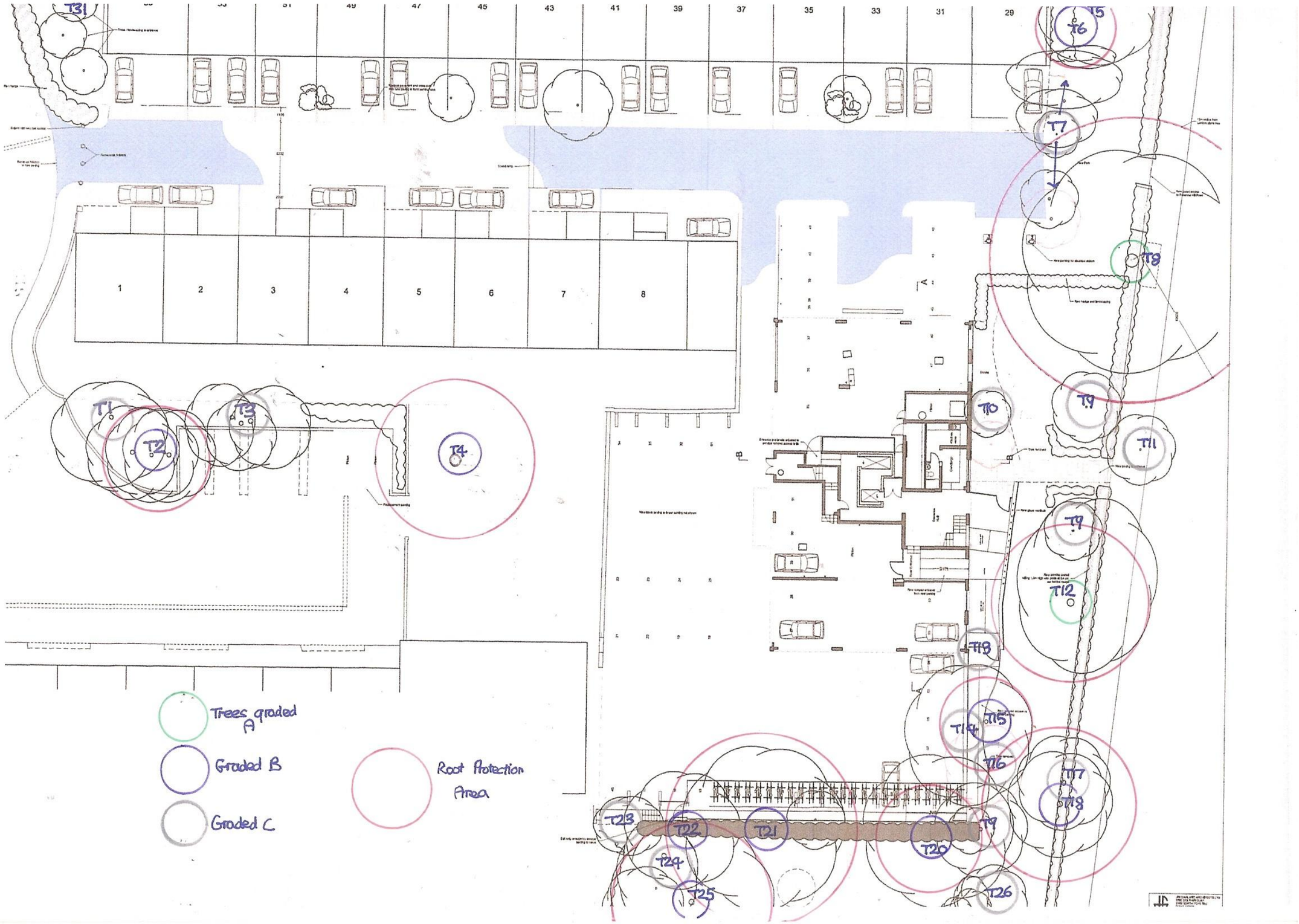


[illegible]trol Data

Station	Eastings	Northings	Level	Mark
1	500.000	500.000	50.000	Nail
2	[illegible]8.999	536.761	51.831	Nail
3	[illegible]9.681	514.905	50.325	Nail
4	[illegible]2.948	493.547	49.841	Nail
5	379.140	479.116	48.918	Nail
6	365.664	446.306	48.621	Nail
7	422.508	423.393	47.266	Nail
8	453.100	412.168	46.626	Nail
9	476.414	454.639	48.198	Nail
10	467.853	455.218	48.008	Nail
11	477.291	467.580	48.687	Peg
12	456.767	485.349	48.649	Nail
13	427.780	501.730	49.425	Nail
14	488.133	488.559	49.681	Peg
15	441.883	460.988	47.549	Nail
16	437.853	446.560	47.555	Nail
17	410.595	469.242	48.658	Nail
18	437.016	433.552	48.438	Peg


T31
T1
T2
T3
T4
T5
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T7
T8
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T11
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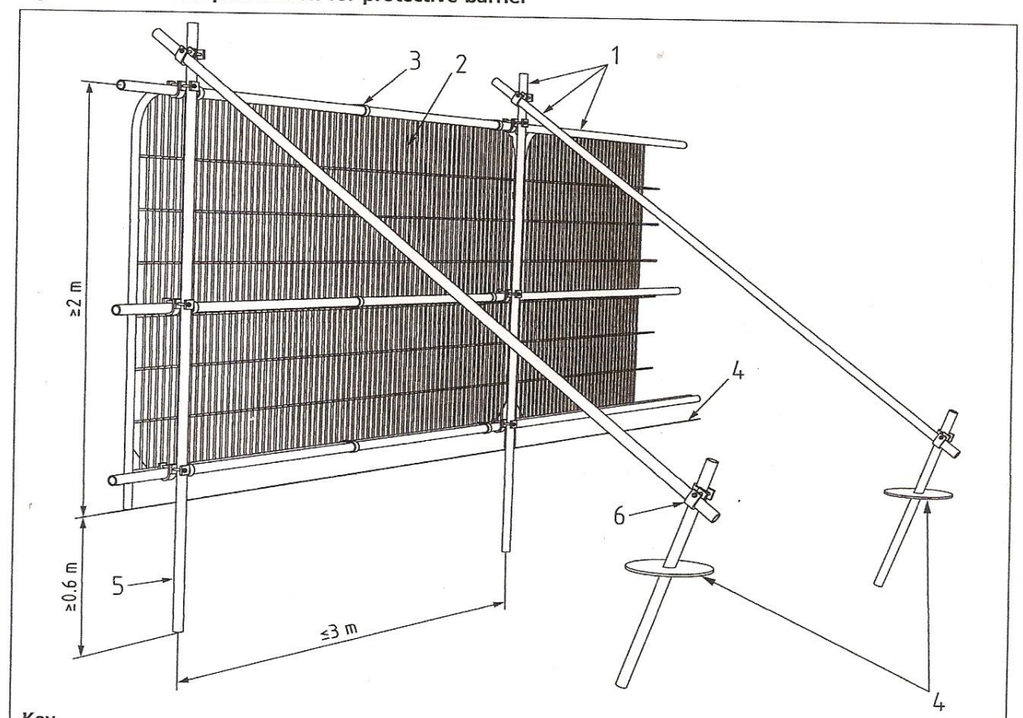
T21
T22
T23
T24
T25
T26
Trees graded A
Graded B
Graded C
Root Protection Area

Figure 2 **Default specification for protective barrier**



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps