Pre-development Arboricultural Report

Re:	**72 Fitzjohns Avenue, London, NW3**
Commissioned by:	**Attn: Mr. Feiereisen,** **72 Fitzjohns Avenue,** **London** **NW3**
Compiled by:	**Modern Arboricultural Services** **Paul Macqueen (NCH ARB, ND ARB)**
Inspection date:	**24th March 2009**

Pre-development Tree Report

1. Instructions, Objectives and limitations

1.1 I am instructed by Mr Feiereisen to inspect and report on the trees liable to be effected by the construction at the above property. The objectives of the report are to advise on the current condition of the trees, identify trees for retention and limit damage to the tree/s during construction in the interests of both health and safety, and to continue to promote the visual character and amenity of the area.

1.2 The following report is in accordance with BS 5837:2005 Trees in Relation to Construction-Recommendations.

1.3 The report includes;

i) **Tree Survey:** Including tree categorisation and identification of trees suitable for retention.

ii) **Tree Constraints Plan (TCP):** Showing the Root Protection Area (RPA) and representing the effect that the mature height and spread of trees suitable for retention will have on layouts through shade, dominance etc.

iii) **Arboricultural Implications Assessment (AIA) and Design Issues:** Whilst the TCP should inform site layout design, it is recognised that the competing needs of development mean that trees are only one factor requiring consideration.
Tree constraints and design: The presents of Tree Preservation orders or conservation area, above and below ground constraints, possible design modifications etc.
Proximity of trees to structures: A realistic assessment of the probable impact of any proposed development on trees and vice versa etc.

iv) **Arboricultural Method Statement (AMS):** To include details of tree protection prior to and during construction. Also tree pruning recommendations to promote the trees health and maximise the juxtaposition between development and post construction remedial methods to promote recovery.

v) **Tree Protection Plan (TPP):** Showing finalised layout proposals, tree retention and tree and landscape protection measures detailed within the AMS, which can be shown graphically.

1.4 The inspection has been carried out from a ground level only. Should more detailed inspection be required then this will be highlighted in survey recommendations.

1.5 Trees are living organisms whose health and condition can change rapidly, the health and safety of trees should be checked on a regular basis, preferably at least once a year. The conclusions and recommendations in this report are only valid for one year. This period of validity may be reduced in the case of any change in conditions to or in proximity to the tree.

1.6 I have been informed by London Borough of Camden Planning Department that the site is within a Conservation Area but no trees are subject to a Tree Preservation Order (TPO). Therefore it would be necessary to obtain permission before undertaking any work.

2 Information Received

2.1 The following correspondence and drawings of the existing site and the proposed development have been received on which this report is based;

i) An existing digital land survey, a preliminary site layout plan and side elevation plans. These drawings are used as a basis for the TCP and TPP.

2.2 These correspondence and drawings have been copied and attached within Appendix.

3 Site description

3.1 The proposed development site is a residential house within an urban setting, therefore tree cover is limited.

3.2 The basis to this report is a proposed pedestrian entrance from Fitzjohns Avenue and a stepped/ ramped approach for a wheel chair access. As this forms one of the major reasons for the entrance in the first place. A site visit was made with the architect Andrew Down.

4 Tree Survey

4.1 The following information is provided:

a) Reference number (recorded on plans)
b) Species
c) Height in metres
d) Stem diameter in millimetres at 1.5m or immediately above the root flare for multi-stemmed trees
e) Branch spread in metres taken at the four cardinal points to derive an accurate representation of the crown
f) Height in metres of crown clearance above ground level
g) Age class (young, middle aged, mature, over-mature, veteran)
h) Physiological condition (e.g. good, fair, poor, dead)
i) Structural condition, e.g. presence of decay
j) Preliminary management recommendations
k) Estimated remaining contribution in years (e.g. less than 10, 10-20, 20-40, more than 40)
l) R or A to C category grading (see Table 1) (recorded on TCP)

4.2 The trees are catergorized in accordance with the BS 5837 Table 1 – Cascade chart for tree quality assessment. A copy is enclosed within the appendix.

4.3 On the date of inspection a limited visual inspection from the ground was achieved. A copy of the Tree Survey is enclosed within the appendix.

5 Tree Constraints Plan (TCP)

5.1 The influence that trees on and adjacent to the site will have on the layout is plotted on a plan called the TCP. This design tool shows how the below ground constraints, represented by the RPA, and the above ground constraints that the trees pose by virtue of their size and position. Also their future potential sizes and influence.

5.2 In order to avoid damage to the rhyzosphear (rooting area) of retained trees, the RPA is plotted around each of the category A, B and C trees. This is a minimum area in m^2, which must be left undisturbed around each retained tree.

5.3 The RPA is calculated using BS 5837 Table 2 (A copy of Table 2 is enclosed within the appendix) as an area equivalent to a circle with a radius 12 times the stem diameter at 1.5m for single stem trees and 10 times basal diameter for trees with more than one stem.

5.4 A copy of the TCP is enclosed within the appendix.

6 Arboricultural Implications Assessment (AIA) and Design Issues

6.1 The juxtaposition of the trees and the proposed Pedestrian Access to Fitzjohns Avenue and ramped approached access raises no conflict. This is due to the development falling outside of the trees RPA's.

6.2 However Barriers must be erected prior to the development to prevent movement within the RPA's.

6.3 Root exposure during the excavation of the side elevations of the proposed retaining walls must be taken into consideration due to the potential desiccation of the roots of T4 within the RPA. A methodology is outlined in the AMS.

7 Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP)

7.1 All trees must be adequately protected before development operations start. Therefore the following sequence of operations must work hand in hand with the development process.

i) **Tree Works:** No tree works

ii) **Design implications:** No alternative design is required.

iii) **The construction exclusion zone. Barriers:** The location of the protective barriers are plotted accurately on the TPP.
The barriers must be erected and installed prior to any materials or machinery is brought onto the site and before any demolition, development or stripping of soil commences.

The Barriers: Must consist of a scaffold framework in accordance with BS 5837 Figure 2 (a copy of which is enclosed within the appendix).

All weather notices should be erected on the barrier with words such as

"Construction exclusion zone-Keep out"

During construction the following processes must be adhered to;

a) No materials can be stored within 5m of the tree's bole.
b) Oil, bitumen, cement or other material likely to be injurious to a tree must not be stacked or discharged within 5m of the tree's bole.
c) Concrete mixing must not be carried out within 5m of the tree's bole.
d) It is essential that fire must not be lit beneath or within close proximity to the canopies.
e) The trees must not be used as anchorage for equipment.
f) Care must be exercised when using cranes or similar equipment near the spread of the canopy.

iv) Removal of fencing must only occur at the end of construction.

v) **Retaining Wall Methodology:** The following method must be adhered to:

a) Care must be taken not to disturb tree roots that may be present during excavation of the side elevations of the proposed retaining walls.
b) Hand held tools should be used (under arboricultural supervision) to remove the existing surface avoiding damage to the protective bark of roots adjacent the proposed retaining walls.
c) Tree roots exposed by such operations should be wrapped in dry, clean hessian sacking to prevent desiccation and to protect from rapid temperature change.
c) No details have been submitted regarding the replacement hard surface but it must be a permeable and a gas-porous finished surface.

7.2 The tree's should be inspected by a competent Arboriculturalist following the completion of development for safety, any deterioration in the trees condition, and any accidental damage to identify the need for tree works.

This report is for the sole use of the above client and refers to only the trees identified within, use by any other person(s) in attempting to apply its contents for any other purpose renders the report invalid for that purpose.

Yours sincerely

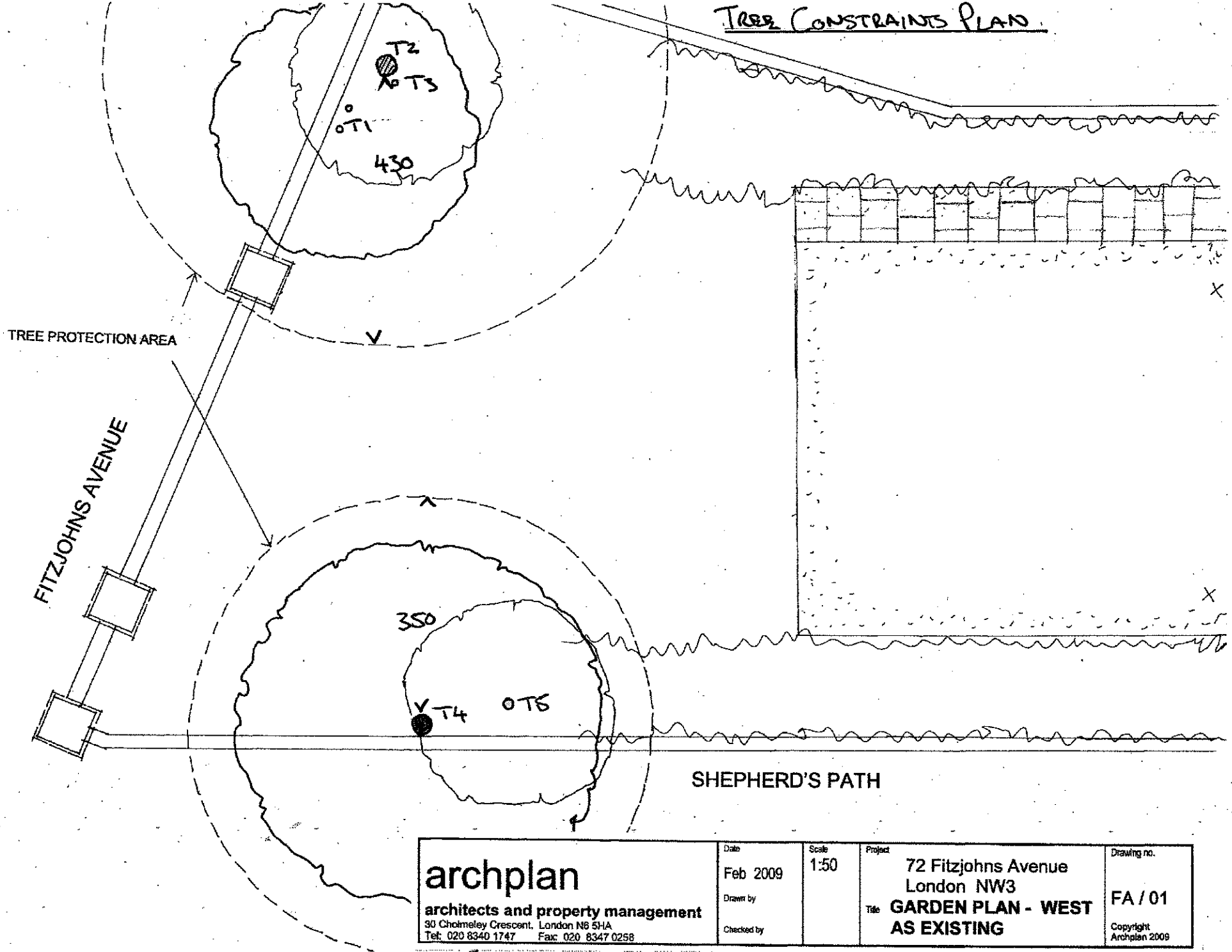
Paul Macqueen
(NCH ARB, ND ARB)

Appendix

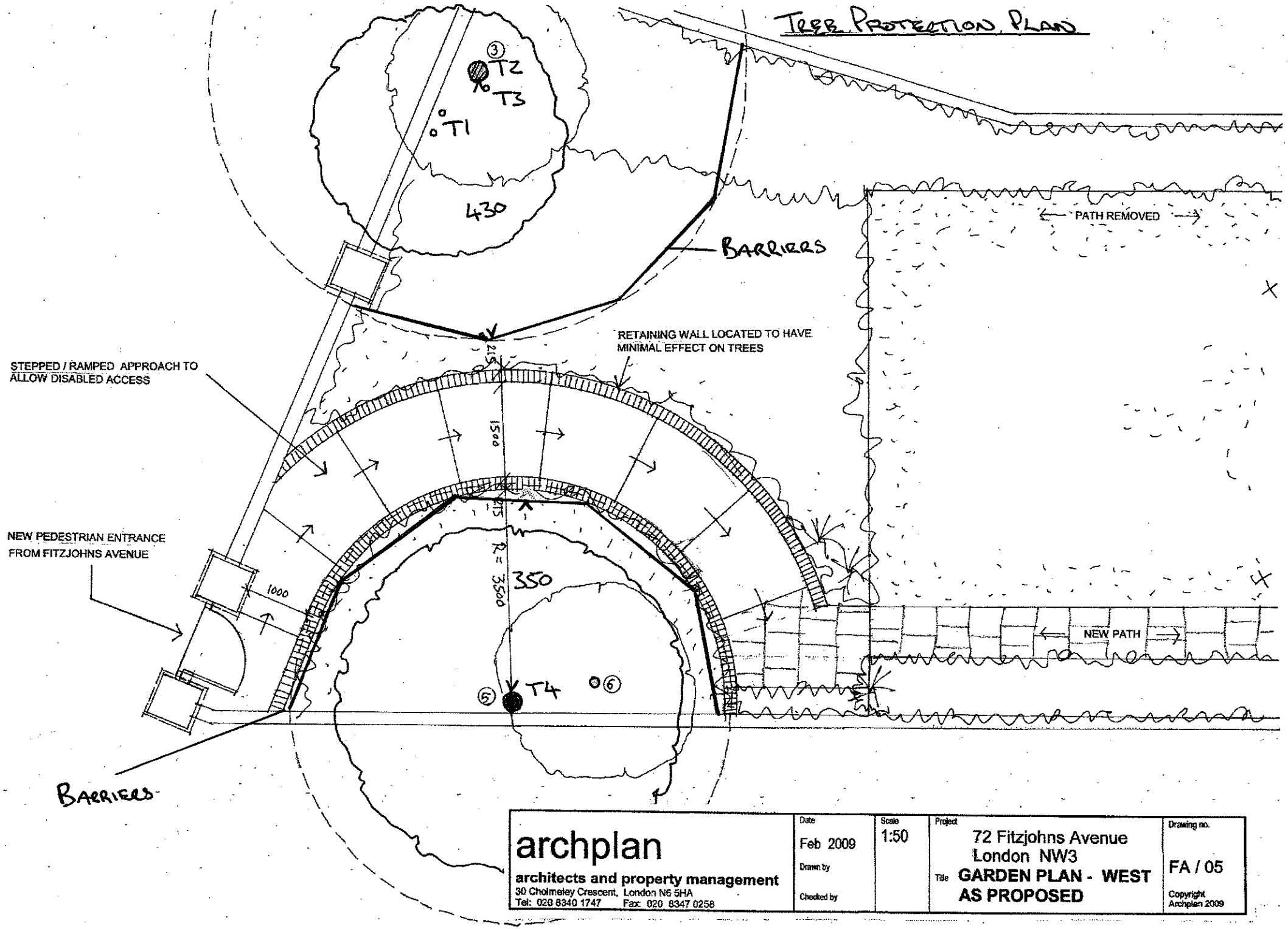
Tree Survey; 72 Fitzjohns Avenue

No.	Species	Ht.	RPA	DBH	Spr. N,S,E,W	C/C	Age	Phys. Cond.	Stru. Cond.	Pre. Recommendations	Rem. Con	Cat.
T1	Holly	4	120	10	2,2,2,2	1	Young	Average	Average	NA	20 to 40	B1
T2	Robinia	16	430	36	3,4,6,4	1	Mature	Average	Average	NA	10 to 20	B1
T3	Lawsons Cypress	7	120	10	2,2,2,2	1	Mature	Average	Average	NA	10 to 20	B1
T4	Yew	8	Multi 35	350	3,3,3,3	1	Young	Good	Good	NA	40 +	A1
T5	Cherry	5	120	140	1,4,2,1	2	Young	Good	Average	NA	40 +	B1

TREE CONSTRAINTS PLAN



archplan **architects and property management** 30 Cholmeley Crescent, London N6 5HA Tel: 020 8340 1747 Fax: 020 8347 0258	Date Feb 2009 Drawn by Checked by	Scale 1:50	Project 72 Fitzjohns Avenue London NW3 Title **GARDEN PLAN - WEST AS EXISTING**	Drawing no. FA / 01



archplan architects and property management 30 Cholmeley Crescent, London N6 5HA Tel: 020 8340 1747 Fax: 020 8347 0258	Date Feb 2009 Drawn by Checked by	Scale 1:50	Project 72 Fitzjohns Avenue London NW3 Title **GARDEN PLAN - WEST AS PROPOSED**	Drawing no. FA / 05 Copyright Archplan 2009

Table 1 — Cascade chart for tree quality assessment

TREES FOR REMOVAL		
Category and definition	**Criteria**	**Identification on plan**
Category R Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management	• 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 R category 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 (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality NOTE Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree).	DARK RED

TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	**Criteria — Subcategories**			**Identification on plan**
	1 Mainly arboricultural values	**2 Mainly landscape values**	**3 Mainly cultural values, including conservation**	
Category A **Those of high quality and value:** in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested)	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 which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B **Those of moderate quality and value:** those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits	MID BLUE
Category C **Those of low quality and value:** currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits	GREY
	NOTE Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm should be considered for relocation.			

4.4.3 The tree survey may identify the presence of veteran trees on the site. Such trees should be considered carefully in relation to new development, as it is rarely acceptable to locate them within developed areas, rather than open space. The implications of their presence on the land use of the surrounding site should be assessed at the earliest possible stage of the planning process. Veteran trees should be assessed according to the recommendations in **4.3.1**. By this assessment, most genuine veteran trees are likely to be included in category A3.

4.5 Tree survey — post-planning

It is recognized that, on occasions, arboricultural advice is not sought until after a preliminary site layout has been prepared. Although this is not the ideal situation, timely and appropriate expert advice can still make a valuable contribution to the process of tree retention and protection. In cases where the arboriculturist is provided with a layout, the tree survey should be undertaken as described in **4.2** to provide advice on tree retention, protection, remedial or mitigation works and new landscape design. It is essential that the trees are assessed objectively and without reference to site layout proposals.

5 Tree constraints plan

5.1 General

The influence that trees on and adjacent to the site will have on the layout should be plotted on a plan called the tree constraints plan (TCP). This is a design tool which should show the below ground constraints, represented by the RPA, and the above ground constraints the trees pose by virtue of their size and position.

5.2 Root protection area (RPA)

5.2.1 In order to avoid damage to the roots or rooting environment of retained trees, the RPA should be plotted around each of the category A, B and C trees (see **4.3**). This is a minimum area in m^2 which should be left undisturbed around each retained tree.

5.2.2 The RPA should be calculated using Table 2 as an area equivalent to a circle with a radius 12 times the stem diameter for single stem trees and 10 times basal diameter for trees with more than one stem arising below 1.5 m above ground level.

Table 2 — Calculating the RPA

Number of stems	Calculation
Single stem tree	$\text{RPA}(m^2) = \left(\frac{\text{stem diameter (mm) @ 1.5 m} \times 12}{1\ 000}\right)^2 \times 3.142$
Tree with more than one stem arising below 1.5 m above ground level	$\text{RPA}(m^2) = \left(\frac{\text{Basal diameter (measured immediately above root flare (mm)} \times 10}{1\ 000}\right)^2 \times 3.142$
NOTE The 12× multiplier is based on NJUG 10 [9] and published work by Matheny and Clark [10].	

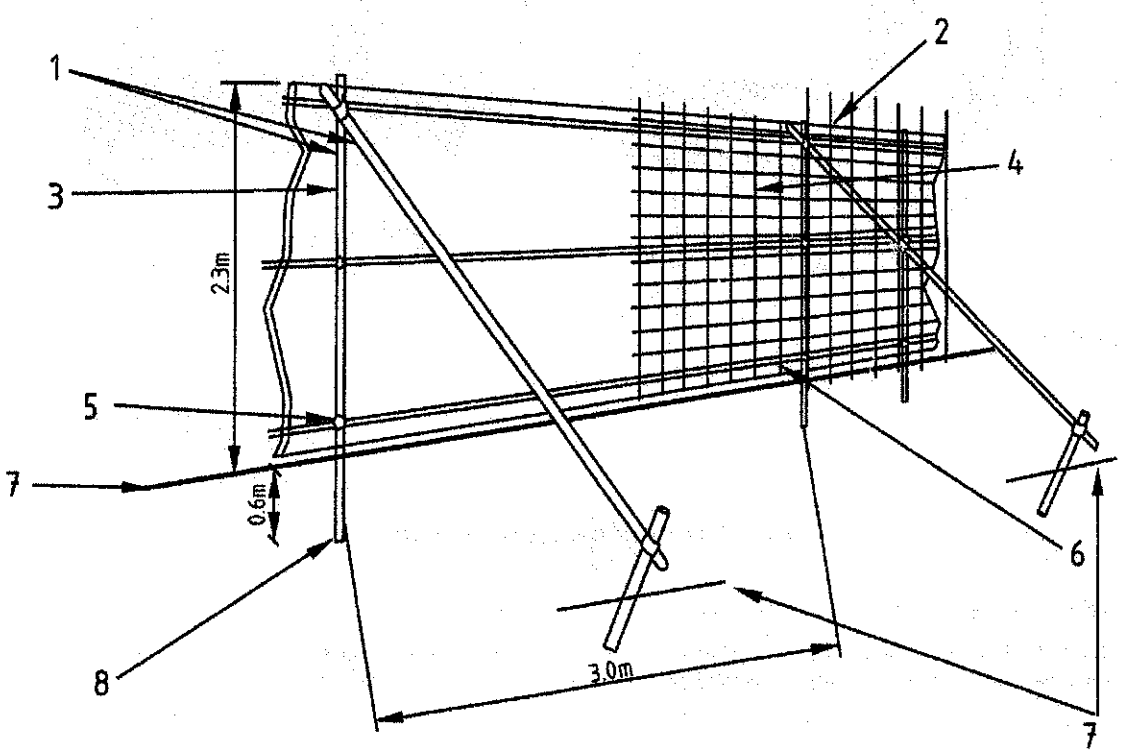
5.2.3 The calculated RPA should be capped to 707 m^2, e.g. which is equivalent to a circle with a radius of 15 m or a square with approximately 26 m sides.

9.3 Ground protection

9.3.1 Where it has been agreed during the design stage, and shown on the tree protection plan, that vehicular or pedestrian access for the construction operation may take place within the root protection area (RPA), the possible effects of construction activity should be addressed by a combination of barriers and ground protection. The position of the barrier may be shown within the RPA at the edge of the agreed working zone but the soil structure beyond the barrier to the edge of the RPA should be protected with ground protection.

9.3.2 For pedestrian movements within the RPA the installation of ground protection in the form of a single thickness of scaffold boards on top of a compressible layer laid onto a geotextile, or supported by scaffold, may be acceptable (see Figure 3).

9.3.3 For wheeled or tracked construction traffic movements within the RPA the ground protection should be designed by an engineer to accommodate the likely loading and may involve the use of proprietary systems or reinforced concrete slabs (see **11.8** and **11.9**).



1 Standard scaffold poles
2 Uprights to be driven into the ground
3 Panels secured to uprights with wire ties and where necessary standard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5 Standard clamps
6 Wire twisted and secured on inside face of fencing to avoid easy dismantling
7 Ground level
8 Approx. 0.6 m driven into the ground

Figure 2 — Protective barrier