BARROW & HOLDING

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TREE REPORT

29 PEMBROKE RD
LONDON
W8

MAY 2000

BARROW & HOLDING
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REPORT PARTICULARS

REF: IBR125001

DATE: 12th May 2000

CLIENT

Keith Horn Architects
58 St. Pauls Rd
London
N1 2QW

SURVEY SITE

29 Pembroke Rd
London
W8

DATE OF VISIT(S)

Friday 12th May 2000

PEOPLE PRESENT

Ian Barrow & Mr. Robert Buxton

SUMMARY:

The report investigates a magnificent mature Plane tree standing in the rear garden, close to the rear elevations of the above property. Proposals have been made to extend the existing dining room, to within 1m of the tree.. Current surface levels within the garden are to be retained and the new extension is to be raised on micro piles, thus avoiding tree root disturbance.

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SCOPE OF REPORT

SURVEY BRIEF

To provide an arboricultural report commenting on the potential risk posed to the tree by construction works of the new extension.

REPORT REFERENCES

As a progressive company, we keep abreast of research data relating to arboriculture. All observations, recommendations and works are based on current industry standard reference material. A selection of pertinent items is shown in appendix 2. Ian Barrow is licensed by the Arboricultural Association to carry out subsidence risk assessments; accreditation. 192/1297.

GENERAL SITE DETAILS

LOCAL CONDITIONS

Underlying soils are highly shrinkable London clays. Plasticity index is unknown, but from previous experience locally, is assessed to range from 30% to 58%. Following several years of drought, rains of 98/99 have now fully hydrated sub soils to field capacity levels.

BUILDINGS

No.29 is a semi-detached Victorian villa, with four stories and an extensive basement level. It is likely to have been constructed in the mid to late eighteen hundreds. Foundation depths are unknown.

GROUNDS

The gardens which overly the tree's roots comprise lawn and mature shrub beds. There is hard surfaced crazy paving immediately around the buttress roots of the tree. To the rear of the patio area on which the tree stands, is a sloping bed containing shrubs. This area will allow an element of drainage and re-hydration of the subsoils. There are drain runs at basement level across the rear elevation of the property.

THE TREE(S)

DESCRIPTION / SIZE / LOCATION /CONDITION/RECOMMENDATIONS

T1, London Plane 32m Ht. This is a fine specimen with a crown height of 15m; crown spread of 25m, stem diameter at breast height is 144cm, broadleaf. The tree's base is 3m from the rear of the existing dining room extension, and 4.5 from the original elevations of the property.

This tree is of good vigour and extremely high amenity value. Department of Environment guidelines list trees of this species, age, health and size as A1.

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From a ground based inspection of the tree we note that the main trunk is in good order, there is no decay at any point within the tree, and that minor old pruning wounds are healthy and well calloused. At approximately 15m there are bollings resulting from former pollarding works, all of which are sturdy and well formed with no evidence of decay present. Arising from these are another 15m of new growth, all of which is healthy and well formed.

The crown overall is well balanced and healthy and shows evidence of previous thinning works. No works, which would have been detrimental to the tree's root system, have been carried out within the garden. The containing walls to the basement levels show no signs of distortion, cracking or evidence of root invasion.

We understand that the tree was planted at around the same time as the house was built, this is consistent with the Victorians fondness for semi-exotics such as the Plane, thus the tree and building have grown and aged together without adverse effect upon either.

DISCUSSION

The proposal is for a new dining room extension to the left-hand rear elevation of the property, as viewed from the main road. We understand that the extension would be a single story structure with a balcony area above, extending some 2m beyond the existing end wall. Both the architect and the owner are keen that the tree be retained and preserved in the best possible condition, consequently, the plans and details concerning construction satisfy us that the tree will be relatively unaffected throughout.

The primary foundation structure is intended to be on five micro piles, installed between the trees current rooting zone. The floor levels above will be carried on ground beams that are likely to be above existing surface levels, and in any case, certainly not deep enough to affect the trees roots. The micro piles will also be equipped with movement sleeves to accommodate both root expansion and soil movement in future.

Given these considerations we feel that the extension itself will not be detrimental to the tree's health or stability.

CONCLUSION AND RECOMMENDATIONS

The only concern we have is that during construction work the highest consideration is given to the tree's well being. To this end, we would recommend that the excavation and removal of the existing patio area immediately around the tree is done entirely by hand, and that the subsoil beneath this layer is also excavated by hand down to the point at which the major tree roots are identifiable. It is only at this point through careful hand removal of soil, that piles can accurately be drilled to avoid major structural roots.

Following initial works, the subsoils should be remade, ideally with the original spoil removed from the excavations, and the surface immediately beneath the foundation beams is re-laid with a free draining medium, able to provide soil gas/air exchange.

During the piling operations, we also consider it extremely important that no cement, lime wash or drilling lubricant is allowed to pollute the soil around the tree's buttress root system.

Beyond the new extensions main walls, we understand that there is a proposal for decking to placed around two sides of the tree. This will also provide an opportunity for the removal of the current hard surfacing immediately adjacent to the tree, and its replacement with soft, permeable material.

We would also suggest that from the tree's point of view, it may be desirable to re-lay the existing patio area with a semi permeable surface, more able to cope with any movement caused by root and trunk expansion. The distortion of the paved area adjacent to the tree is likely to have been caused by the heavy growths of Ivy which until recently grew up the main stem. These roots are still in evidence and show that the Ivy was large, mature and vigorous, and would undoubtedly have contributed to the distortion of the paving. We do not consider this a feature of any significance or concern.

If any pruning works are carried out to the tree's crown immediately after construction, they should be contained to minor surgery to reduce the overhang of the roof area. Major thinning works, if required should be left for at least two years after the extension work is completed. This will reduce any risk of stress to the tree through the building works, to a minimum, and enable the crown to retain adequate food stores to see it through this period.

Ian Barrow. Cert. Arb'
Associate of the Arboricultural Association.

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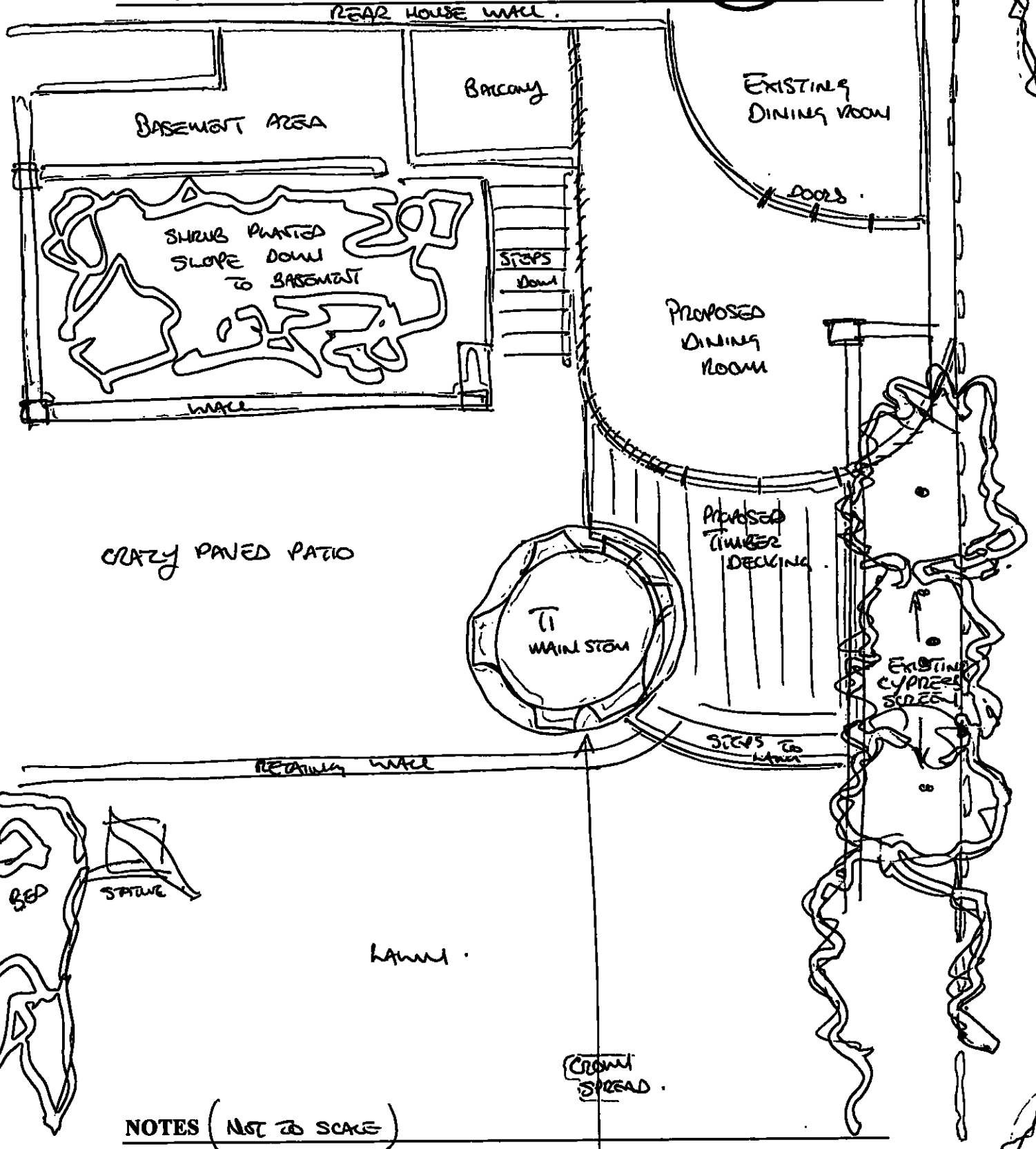

NOTES (NOT TO SCALE)

APPENDIX 1

DEFINITIONS

1 Arboriculture

This is the science, study and practice of the management of trees and shrubs, aimed primarily at the provision of amenity both in urban and rural situations.

2 Site

For the purpose of this report, the 'site' is the property for which the report has been commissioned.

3 Boundary

This can be described as the physical and/or legal demarcation of a defined area.

4 Underground/Overhead services

These are utility services such as Gas, Water, Sewerage, Electricity, Telephone and Cable television that are either buried below ground, or suspended cables overhead.

5 Local planning restrictions

Local planning restrictions related to trees come in the form of tree preservation orders or conservation areas. Under these restrictions it is an offence under statute law to cut, wilfully damage or destroy a tree.

6 Deeds of Covenant

This is a legal act or document to secure an item of value or importance to the owner. With reference to trees this is usually recorded with the land registry.

7 Subsidence and Heave

Subsidence can be defined as the downward movement of a building foundation, caused by loss of support of the soil beneath the foundations. This is associated with changes in the subsoil such as shrinkage in clay soils, or the compression of peaty soils.

Heave on the other hand, is the upward movement of a building foundation caused by an increase in volume of the soil beneath the foundation. This is commonly associated with changes in the subsoil, such as rehydration in clay soils.

8 Monitoring

This is a cyclical series of inspections over a period of time, by experienced and/or qualified personnel. The objective for the arboriculturalist is to record changes in tree condition, and/or the effect of recommended work on specific tree(s).

9 Roots

These are subterranean structures of the tree that are used for anchorage and extraction of nutrients and water from the soil. As a guideline it is assumed that the root system can extend approximately a distance of one and a half the height of the tree, or half the tree's height in the case of conifers and more upright species.

10 Trench root barrier
A measure carried out to limit the extent of a tree's root system where it may be in conflict with a neighbouring building or structure. The intention being to temporarily resolve the possibility of any direct or indirect action by roots on the building or structure in question.

11 Direct action of roots/trunks
This is a force applied to an object, structure and/or building as a result of increasing diameter of the roots and/or trunk of a tree through normal growth.

12 Indirect action of roots
The shrinkage or swelling of soils and consequent effect on a substrate as a result of soil moisture extraction by tree roots.

13 Crown
This is the branch system which grows upwards and outwards from the trunk of the tree. Recommended works that mention the crown, pertain soley to this area of the tree and not to the trunk.

14 Crown spread
This is the radial measurement of the crown of the tree, from trunk to its furthest extent in a specific direction. A mean crown radius is the average figure taken from several radius measurements in various directions.

15 Crown reduction/Re-shaping
This is a reduction of the crown size, by height, spread, and to some extent, density. The reduction is measured from the top of the crown to crown base, and is not a reduction of the height of the tree overall. Branches should be cut back to a side bud or branch (where possible) to leave a flowing crown silhouette without stumps.

16 Crown thin
This is the removal of a portion of the secondary branch growth throughout the crown to produce a well-balanced branch structure, of an even density. The volume of timber removed will be approximate and expressed as a percentage.

17 Crown lift
This is the removal/reduction of low branches or limbs, (generally back to a side bud, branch or the main trunk) to give a specified height of the crown above the ground surface or other structure.

18 To "deadwood"
This is the removal of dead, dying and diseased branches in excess of 5cm diameter from the crown/trunk of the tree, which can constitute a considerable potential hazard. This also includes the removal of any split limbs, broken or dying and hanging branches.

19 Formative prune
This is the pruning of small trees and/or saplings to help prevent major problems associated with shape and structure arising in the future.

20 Pollard

This can be either a considerable reduction in height and spread of a tree, back to a truncated framework of major branches or the removal of re-growth from a previous pollarding, back to original points or **bollings.**

21 Cyclical pruning

This is the regular pruning of a tree, for example, on a periodic or yearly cycle in order to regulate its size or crown density. This also reduces, and to some extent regulates, the tree's uptake of water from the soil, and will go a long way to alleviating some of the problems associated with soil dehydration.

22 Fell

This is the removal of a tree by cutting its stem through at, or just above, existing ground level.

23 Stump poisoning

This is used when it is necessary to kill a remaining stump and root system, in situations where stump removal is impractical, or to prevent unwanted re-growth, with or without stump grinding.

APPENDIX 2

BIBLIOGRAPHY

All observations, assessments and recommendations contained within this report are based around and/or subject to the following documentation:

BS 3998: 1989 (British Standard Recommendations for Tree Work)

BS 5837: 1991 (British Standard of Trees in Relation to Construction)

A Risk Limitation for Tree Root Claims (Unpublished: London Tree Officers Association.)

Arboricultural Advisory and Information Services (AAIS) Research notes. In Particular. . .

Tree roots and foundations (P G Biddle)

Tree root damage to buildings; (P G Biddle)
Volume one- Causes, diagnosis and remedy.
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Published papers in the Arboricultural Associations journal. In particular . . .

Interactions Between Tree Roots and Construction Work. (D F Cutler) February 1993

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The prediction of Building Foundation Damage Arising from the Water Demand of Trees. (Paul F McCombie) : 1995

The Arboricultural Association's Subsidence Risk Assessment Model.

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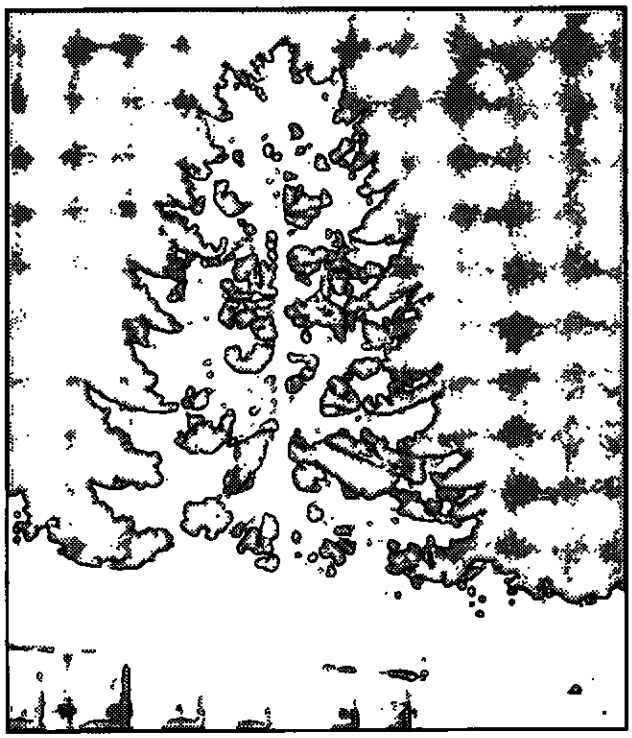
HOME BUYERS TREE REPORTS, SAFETY INSPECTIONS AND SURVEYS



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The two principals of Barrow & Holding are:-
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