07/3470/FU

Arboricultural Impact Assessment

Waldegrave Arms
Teddington

260603-PD-01A
August 2007

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PROPOSED DEVELOPMENT

Waldegrave Arms, Teddington

Arboricultural Impact Assessment

Introduction

The following arboricultural report has been commissioned by Dukelease Property Limited, in order to clarify a number of issues:

- The species, size and position of the trees and other vegetation within the area of the proposed development and within neighbouring and adjoining areas where trees may have some significance to the proposed development.
- The maturity and condition of the trees surveyed with appropriate recommendations for action.
- The impact of the proposed development upon the tree population in and around the site.
- Measures required to protect trees during proposed development works.

Information available

The site was visited on 6 June 2006 and a survey carried out identifying and locating the relevant trees and other vegetation. An assessment of the trees has been made in line with the recommendations given in British Standard 5837:2005 – Trees in relation to construction – Recommendations. (BS 5837:2005).

The proposed site layout has been provided by the architect, HFBT Architects, and shows the footprint of the building in relation to the trees. The drawing reference for this is PL.207 rev A.

The position of retained trees is based upon those shown on the topographical survey received from HFBT Architects, drawing number EX.207.

The Trees

British Standard 5837:2005 provides guidance for the assessment of trees on development sites and suggests four categories into which trees should be placed for assessment purposes. These categories are reproduced in the schedule in Appendix 1.

Trees surveyed have been categorised according to the above guidelines. The trees have been assessed from ground level only. Details of the trees surveyed will be found on drawing 260603-P-01C at Appendix 1.

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Juxtaposition of Trees and Structures

British Standard Guidance 5837:2005

British Standard guidance provides a formula for calculating the Root Protection Area (RPA) required to be protected for existing trees that are to be retained. The shape of the RPA and its exact location will depend upon arboricultural considerations and the area will normally be represented on a plan as a polygon.

In addition, the British Standard requires that the arboriculturist considers the constraints posed to development by the above ground parts of the tree and takes into account such matters as future growth trees and obstruction of daylight and sunlight in accordance with published guidance from the Building Research Establishment.

The retained trees are to the north of the proposed flats and therefore we do not consider there to be significant sunlight issues with the retention of the two trees.

Following consultations with the Arboricultural Officer for The London Borough of Richmond, the retention of T1 and T2 has been accommodated in a revised layout. To reflect the Arboricultural officers concerns the root protection areas of T1 and T2 have been extended to cover the whole of the proposed garden area.

Currently the retained trees are aesthetically unbalanced, with the visual balance being weighted into the site and away from Shacklegate Lane. This is caused by past pruning for highway clearance on the sycamore and by poor crown structure on the Eucalyptus. It is proposed that some crown reduction works are undertaken to the trees to maintain sufficient clearance from the proposed development and to allow the construction of the development. These matters have been discussed with the Arboricultural Officer. The extent of crown reduction is illustrated in drawing 260603-P-02 attached at Appendix 2.

The retention of these two trees will contribute to the quality of the garden area and the setting of the proposed development.

Methods of Demolition & Construction

Demolition of the existing hard surfaces within the root protection areas of the retained trees will need to be carried out using specialised methods to avoid damaging roots. Full details can be dealt with in an arboricultural method statement.

The proposed construction works are outside the RPA and crown extension of the retained trees and will not therefore have an adverse effect on these trees.

Where it is proposed to construct the new entrance for pedestrian access and for other paved/hard landscaped areas within the RPA of the two trees, the use of no-dig construction techniques will be used. An indicative drawing can be found in Appendix 6, drawing number 260603-P-06 showing the principles of no-dig construction.

Erection of Scaffold and Ground Protection within the Minimum Root Protection Areas in Accordance with BS 5837:2005

Scaffolding will need to be erected within the root protection area to facilitate the proposed construction. The guidance given in BS 5837:2005 will be used with regard to the protection measures for scaffolding and ground protection within the RPA, as demonstrated on drawing number 260603-P-03._The areas where ground protection will be necessary are highlighted on drawing 260603-P-04 at Appendix 4.

Pruning Works to Retained Trees

It is proposed to reduce the southern section of the crowns of both retained trees by up to 2 metres, to suitable secondary growth points, for the lower third of the crowns, reducing this amount to 1 metre for the middle third of the crowns to ensure a visually balanced crown of natural appearance for the reasons stated above. It is not proposed that any reduction works are undertaken to the upper section of the crowns in order to maintain natural growth habit and form. It is also recommended to lift the low secondary branching to a height of 4 metres to allow uninterrupted access beneath the tree and to improve daylight levels in the area around the trees. The extents of the reduced canopies are illustrated on Drawing 260603-P-02. These works were discussed with the Arboricultural officer at an early stage of the project.

Drainage and Service Runs

Drainage and service runs have not been identified on submitted plans. Any proposed drainage and/or service runs should avoid the RPA's of the retained trees. Where this is unavoidable the guidance found in NJUG 10 will be adhered to, in consultation with the arboricultural consultant and the Arboricultural Officer.
A copy of NJUG 10 is attached at Appendix 7.

Trees at Risk

It must be assumed that trees will be at risk from a number of construction operations. These include:

- Bringing heavy plant onto the site – Potentially damaging to the crowns, stems and roots of trees. Trees with low branches over the area of works may require pruning and protective fencing will be required to prevent compaction of soil beneath the crowns of trees and to prevent damage to stems and crowns.

- Fire damage – Trees are very easily damaged irreparably by fire. No fires should be permitted within 20m of the nearest part of the crown of any tree.

- Handling and storage of materials on site – The construction of the proposed buildings will require the transporting, storage and handling of large quantities of materials. Space for these activities must be provided without damage to trees that are to be retained.

- Construction works – It must be assumed that some space will be required around the proposed buildings to allow for normal construction activities. Any tree crowns within 1.5m of proposed structures will need to be pruned to allow for the erection of scaffolding etc.

- New service runs – If new service runs are required to or from the proposed buildings, car parking areas or driveways these may impact upon existing trees by severing roots or altering drainage characteristics of the soil. The impact on trees will need to be assessed when plans are available.

The above risks to trees can be adequately managed by an approved method statement in response to suitably drafted planning conditions.

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Proposed Tree Works

Some tree surgery works are recommended to these trees for structural or arboricultural reasons and the following works are recommended.

Local Authority approval may be required for tree works

Tree No	Species	Proposed works
T1	Sycamore	Crown reduce the southern side by up to 2 metres, to suitable secondary growth points, for the lower third of the crowns, reducing this amount to 1 metre for the middle third of the crowns to ensure a visually balanced crown of natural appearances. Lift low secondary branching to a maximum of 4m.
T2	Eucalyptus	Crown reduce the southern side by up to 2 metres, to suitable secondary growth points, for the lower third of the crowns, reducing this amount to 1 metre for the middle third of the crowns to ensure a visually balanced crown of natural appearances. Lift low secondary branching to a maximum of 4m.
G1	Mixed species, including sycamore and Prunus species	Prune overhanging growth back where encroaching into the site to provide sufficient clearance for construction works.

Tree Protection

Trees on development sites have a poor survival rate with an unacceptably high percentage of trees dying, declining or becoming unsafe within a few years of the completion of works.

The successful long-term retention of trees on development sites requires some understanding of the ease with which trees can be damaged or killed. The following general principles should be noted:

- Older trees are generally at greater risk than younger trees and are less able to tolerate changes to soil conditions or pruning
- Most mature trees have roots that spread beyond the spread of the crown.
- 90% of tree roots are found within the top 600mm of soil.
- Raising soil levels around the base of trees will normally result in stem decay
- Lowering soil levels close to trees will normally result in root death
- Raising soil levels beneath the crowns of trees will often cause root asphyxiation.
- Physical damage to the bark of trees will often cause decline and ultimate death of the tree
- Compaction of the soil, caused by vehicular traffic, destroys natural soil structure resulting in poor aeration and loss of water absorption leading to root death.
- Fires within 10m-20m of trees can cause bark dieback leading to death or structural instability.
- Spillage of chemicals, fuel or cement on ground occupied by tree roots will cause root death.

Before plant or equipment is permitted on site, protective fencing should be erected to protect all trees, or groups of trees, which are to be retained.

It is important that protective fencing is securely fixed to a static fence. The use of site fencing without a fixed fence will not be acceptable. A suggested specification for protective fencing is illustrated on drawing 260603-P-05 at Appendix 5.

The positioning of protective fencing should take into account the size and condition of the individual trees to be protected, their age and vigour and the risks to their health posed by the development during and after construction.

An indicative position of protective fencing can be found on drawing 260603-P-04 at Appendix 4.

Conclusions

- Advice was taken at an early stage and the layout amended in order to retain trees of high and moderate value.
- Consultations have been undertaken with the Arboricultural Officer with regard to the retention of trees, pruning works and tree protection.
- Trees can be retained without damage to their health or amenity.
- It will be necessary to follow the recommendations given in British Standard 5837:2005 throughout the proposed development works.