Arboriculture Survey to British Standard, B.S. 5837 2012

Trees in relation to design, demolition and Construction - Recommendations

31Belsize Rd, London, NW3

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Prepared by
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Introduction

Survey date was carried out the afternoon of 6 May 2020 the weather was fine, with good visibility.

Property- Garden Flat, no.31 Belsize Park, London, NW3.

The property being on the ground floor converted from a large handsome five storey house.

A Handsome property built using a traditional brick built method of construction circa 1900,s. A leafy residential road with charm and character large London plane trees to the public highway.

Highly likely to be within a conservation area, Local authority being London Borough of Camden may confirm this.

The house, has front and rear garden areas mainly laid to lawn flower beds shrubs also containing two principal trees to the rear garden which (Root Protection Areas) fall outside the proposed scheme .

To the front garden being the bin storage area side access to the property with small bedding area laid with bamboo species, hard standing and brick built wall to separate the public highway.

The Rear garden faces west with lawn terracing, shrubs and 2 significant trees within the far boundary and third significant landscape tree close to the south boundary from neighbouring rear garden at no.33 Belsize Park (Bay Tree).

The Bay tree grows with unorthodox position between the two properties very close to the boundary brick constructed wall and may well have been self- set in the distant past. I would advise this crown area be reduced in size and volume as general management also given proximity to the built environment.

This will possibly have a fair presence with rooting material around the proposed scheme and this would require on site investigation to locate the most suitable pile points avoiding unnecessary root damage.

This will preserve the Bay trees health avoiding heavy root loss and further evaluate the root morphology position. Therefor installation will be identified with locations for the technical footings.

The two principal trees to the rear garden are the Eucalyptus and Cherry tree with the root protection area falling outside of the proposed construction area.

These must be awarded other protection measures to satisfy the condition and health of the soil and trees vulnerable area from start to end during construction work; these details are included as protective fencing and temporary surface protection.

The trees within the rear garden of no.31 are not close enough to the proposed structure to be a concern in the current proposed layout and the R.P.A will not be breached/compromised or threatened according to the B.S calculations of the scheme and data is provided to confirm within this survey.

Protection of the retained trees must be still be in place and measures met before any construction begins in order to preserve the health of the trees from indirect and direct damage that may occur .

An Impact assessment describing the impact of the construction with regards to the trees health and landscape changes, the proposed protection measures where significant trees are off site the R.P.A needs to be also included and data collected to consider the impact. I have not been given access to gain precise data so have estimated the data for this purpose.

I would expect the relevant professional disciplines i.e. (structural engineers, architects and building control to contribute in design and structural information on build and design to provide this information.

Trees on site

I'm not informed of any trees protected on site by Tree Preservation Order but likely by way of conservation area protection. This should be confirmed by the Local Authority (Camden council).

To the south side of the property there is a fair size brick built wall approx. 2.5m in height and the length of the property front to rear boundary this stands separating the houses and gardens with the Bay tree being the tree that is very close to the wall structure and also the root protection area falls within the working zones of this proposed rear extension.

Although I feel the morphology of the root system will possibly be partially offset when developing to avoid the foundations of the wall. This proximity to the newly proposed scheme will have foundation construction within the r.p.a of the Bay tree; this will need to be technically designed to avoid heavy root loss to the retained tree and the r.p.a zone.

To the North West direction of the rear garden stand the Eucalyptus the furthest away being 22m and the cherry tree being 17m from the proposed structure outline.

They add and contribute to the leafy character and charm of the rear landscape setting and there is no proposal to remove these, however the management of both tree crowns is a good idea in the near future and an application should be made to the L.A before work to the trees is carried out.

The trees to the rear garden are not compromised or threatened by the proposal directly and are a significant distance from the construction area.

The proposed extension is facing west and will not suffer from excessive shading from the existing trees, some minor shading will be brought about from the proximity of the

bay tree which is due for some crown pruning management and has been pruned in the past with a crown reduction approx.6-8 years ago.

As long as the crown is managed I don't see why this would cause excessive shade or valid reason for removal unless the property owner would wish for this and approval granted if the tree is protected an application to the L.A will need to be made.

There is also no evidence or reports I'm aware of discussing and commenting on the proximity of tree stem, roots and possible damage inflicted on the brick built boundary wall, directly and indirectly but appears the trunks are very close and may well put mechanical pressure and likely damage unless a modern technical construction solution is reached for in the longer term.

I was not instructed to carry out a hazard assessment to report the structural condition or discuss soil/root samples. To gather data of soil changes or report the potential of indirect or direct damage to existing structures.

All survey information was gathered visually from the ground level.

I used a clinometer to measure the trees height and a diameter tape for the stem measurements.

Any other tree data is estimated if not within the boundary and access has not been provided to be accurate.

Data collection

- Each tree surveyed will be given a tree number and information as categorised in the B.S 5837 2012.
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- Trees off site will be estimated only
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- This can then be identified on the tree protection plan, by number and in the tree schedule table.
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- This would include species (common name), Age, height, crown clearance and stem diameter, estimated life expectancy with potential to contribute.
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- Each tree was then allocated to one of four categories (A, B, C or U), which reflected its suitability as a material constraint on development.
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- Calculation of Root Protection Areas –Table D1 of B.S 5837, diameter listed and radius of a nominal circle used from the table in the standard is listed below.

Trees Root protection area annex D- Tree Survey 5837

Radius of nominal circle and R.P.A in M2

T1 Laurus nobilis-Bay 10.80m radius of nominal circle RPA m2 =366

T2 Prunus avium -Cherry 11.40m radius of nominal circle RPA m2= 408

T3 Eucalyptus spp. 14.40m radius of nominal circle RPA m2 =652

Tree survey Data

Tree No.	Species Common name	Height (m)	Stem diameter (mm)	Age	E.R.C Years	category	Visual Management observations	Ground clearance In Significant direction (M)
T1	Bay	14	900	M	20>	A2	Previous pollard reduction points ,management approx. every 3-5 years	North 5.5m
T2	Cherry	11	950	M	30>	A2	Prune crown to clear property by 3-4 metres reshape crown 25% volume to manage near existing rear of property	North 3.4m
T3	Eucalyptus	15	950	M	40>	A2	Crown reduction in the next year to manage crown and root growth Within garden management	North5.0m

Notes for colour coded protection plan

Life stage, Young=Y, semi-mature=SM, early-mature =EM, mature =M, over-mature=OM.

Category U –Trees unsuitable for retention colour Dark red

Category A-Trees to be considered for retention colour Light green

Category B- trees of moderate quality colour mid- blue

Category C- Trees of low quality- Colour Grey

Arboriculture Impact Assessment

Access and materials

1. The proposed Construction has the space and design techniques to be carried out successfully. There is enough room for materials and general construction traffic accessed from the East front side access to the rear West rear garden side passage being the main outdoor access point.

2. Through the property the other suited for foot traffic. The rear lawn area will accept storage of some materials for the project and this can be protected by ground protection using boards for compaction and tarpaulin or similar quality coverings for any spillages.

3. The materials for this scale of project are not vast in terms of bulk volume so can accommodate.

4. No storing of materials in bulk form to cause compaction to soil in or around the retained trees, protective fencing measures will not be breached or moved once installed this will ensure the health of the soil and trees protection is in place.

1.1 Protection of Trees

There is the opportunity to protect all significant trees outside of working zone site and on site without compromise. Given distance and proximity I don't believe roots will be found belonging to the trees within the rear garden T2 & T3and given the dividing wall structure being double skinned thick 9"wall depending on age of foundations this will have redirected some rooting areas from the bay tree on the west side .

Construction area has a divide brick built 9"wall to serve as a barrier between traffic storage spillage and direct contact with the neighbouring Bay tree.

The crown clearance is high at over 5m and no facilitation prune is required.

Vegetation and Lawns can be protected with temporary surface protection using scaffold boards and ply boards timber fit for purpose to use as temporary materials storage which will distribute the material weight and avoid disruption to the soil structure and offer a degree of protection.

Plastic sheeting can be laid first to protect measures against spillages and other to prevent further contamination.

1.2 Removal and facilitation remedial works

No trees or shrubs are to be removed as part of the proposed plans under this scheme.

Trees considered interfering with construction area to need facilitation works.

1.3 Root Protection Areas and barriers

Once barriers are in place before construction starts they are considered sacrosanct, not to be moved from position until end of construction.

To avoid damage to roots existing ground levels should be retained within the RPA.

Trenchless techniques must be used, when working inside r.p.a and there must be hand dig only technique.

Protecting roots and soil area after the method of work has been achieved with engineered foundations as I have mentioned in 2.4.

Traditional strip foundations can cause too much soil and root loss and should be avoided inside the R.P.A of all retained trees.

There are no existing trees on site of value affected by the construction site.

A protective fence can be installed easily along the lawn area in the rear garden to protect the T2and T3.

The paved area in place (south side) will serve as the access point also the brick built boundary wall separating the properties protects the mature Bay tree and there is no room to store materials around the base of the tree as this would hinder the only main direct narrow footpath access. The protective barriers and boundary wall in place will prevent direct damage and stored materials, prevention of site fires to be lit near tree crowns, chemical spillage or hazardous waste damage to tree soil.

Waste rubbish disposal will not be loaded under trees or stored in rear garden as there will be a waste skip (licensed) to public highway.

1.4 Mitigation of tree /vegetation loss

No mitigation scheme or remedial work is needed for low impact to trees as all retained and minimal threat to vegetation or trees on site.

1.5 Summary of impact overall

Overall the project is likely to have very low impact and not be considered largely detrimental to the trees retained. No landscape loss in the proposed scheme if methods and recommendations are followed correctly.

However there must be protection measures in place and followed by main contractors adhering to the recommendations in this report at all times and by the correct sequence of events.

The overall expected length of time and disturbance is expected to be minimal given the scale of the project.

There should be adequate protection in place with no ground levels changed inside the trees vulnerable area, no working under or around the tree crowns to take place.

There will be no constraints of existing trees to compromise or change the design of the project or redesign excavation area.

The site plans do not need to be adjusted and given the scale of the project can be managed and scheduled without compromise to the trees on site.

The rear garden landscape designs are not removing or stripping soil or changing levels on site within retained trees or that would affect the drainage or soil volume of the retained trees.

The retained trees are on the rear boundary points north / west and will be far enough from the areas of construction work and should not be put under pruning pressure in the future once the construction has been built.

1.6 Potential incompatibilities of Layout and retained Trees

No excavation or construction is proposed inside any of the rear garden trees or Root protection area.

No services are to run through root protection area trees located on or off site.

I don't foresee any potential incompatibilities' for the trees on or off site.

Presence of TPO Trees

1.7 Summary of Affected trees, there are 2 significant trees on site of significant value, so recorded information in the tree survey data table.

These trees have distances in excess of 22metres- Eucalyptus and Cherry -17 metres from the construction area and there will be minimal to no root and rooting soil volume area loss expected given the existing layout and positions of trees.

Categorised as values according to the BS5837 standard and value awarded, protection measures to be put in place.

Facilitation pruning

1.8 No Facilitation pruning is needed on site.

Services

1.9 Services are present in the existing dwelling so no new services need to be provided.

Existing services will continue to run out towards the road area so no further service disruption within the rear garden

Trees Root Protection Areas, there is no proposal of services running through the current RPA's as I am made aware of.

No plans to run services outside of the boundaries of the site and into the adjacent occupiers land or to pass through or enter any of the protected trees.

Low Impact from services.

2.0 Method statement- Points to be Followed and Addressed

2.1 Site Monitoring and Responsibilities

Main contractor appointed to ensure that all contractors on site adhere to the planning condition and meet all requirements fully. Contact to the Local Authority related issues are carried out and in place.

The issues in the Method statement are followed before and during works until completion .Protection Remains in place at all stages of the construction ensuring no possible harm to trees retained on site.

Site visit by Arborist to inspect the foundation details and rooting area inspection also the correct Installation of surface protection and barriers that adhere to BS 5837 2012.

A qualified Arborist will need to be appointed by the contractor and ensure the tree protection measures are in place before any machinery or materials are brought onto site.

Main contractor will be responsible for site protection measures before and during construction through to the end of all works to supervise the protection measures are in place and fit for purpose. Any progressive works may need further discussion/assistance by the visiting Arborist agent.

There will need to be a thorough and clear communication when site is up and running to ensure the measures /conditions are satisfactory and followed from start to finish of work phase. Planning regulations include the provision for the local authorities to enforce planning requirements if they feel necessary.

2.2 Construction Exclusion Areas

No trespassing inside exclusion areas protected by fencing.

Excess dust settling on local trees and neighbouring garden shrubs or hedges can be lightly watered down occasionally as to reduce this build-up of pollution.

Barriers should be fit for purpose ,excluding construction activity and appropriate to the degree and proximity of work taking place with no storage of building material, lighting of fires near trees or changes of soil level within the protection areas or under around tree crowns which may cause damage directly or indirectly to soil structure and drainage.

The default specification should consist of vertical and horizontal scaffold framework, well braced to resist impacts. Vertical tubes spaced at 3m driven securely into the ground or mounted to avoid services and root damage. Onto this framework welded mesh panels should be securely fixed to tolerate impacts without failing.

To agree the best type of fencing and ground barriers are in place for the trees and construction exclusion zones.

The Tree protection plan will show locations recommended for installation. Precise location will need to be finalised on site. The Appropriate protection measures will need to be installed prior to construction activity on site. They should remain rigid and complete. Once barriers are installed they should not be moved or altered, without prior recommendation by the Arborist.

Once installed there should be no reason for protective barriers to be moved until the project is completed if there is the need to consult before the removal or interference.

2.3 Typical protective fencing detail

2.4 Additional Helpful information- Roots

I believe roots will be exposed from trees in the construction zones or areas of excavation so these details are for contractor's information .

Whilst exposed should be immediately wrapped or covered to prevent desiccation and to protect them from rapid temperature changes. Any wrapping should be removed prior to backfilling, which should take place as soon as possible.

Good quality top soil free of contaminants or other inert granular fill which will not harm the tree roots

Roots smaller than25mmdiameter should be pruned back, making a clean cut with a suitable sharp tool (secateurs). Roots occurring in clumps of 25mm diameter and over should be retained. Severed only following consultation with the Arborist as they may be vital to the trees health and stability.

2.5 Contractors parking-toilets and office

There is no provision area for parking and residential parking bays will suffice for the duration and scale of trades necessary for the works.

Wash convenience to be agreed and positioned when site up and running for best access.

2.6 Materials & storage

The rear garden and internal parts of the property can be used for some storage of materials, can be delivered as needed, large quantities are not expected to be stores on site.

2.7 Precautions to Vulnerable tree Areas

Any spillages of concrete or other harmful substances should be washed away to avoid leaching into the surrounding soil area. Water is available on site if emergency irrigation is required.

No fires to be lit within 10 metres of trees and unsupervised no harmful material to be backfilled into the ground and covered over for use.

Any hosing down of dusty foliage should be carried out and watering take place around the base of the trees to wash away and reduce fine debris and pollution build up that may well have occurred over the period. Any void area that may require backfill to use a good quality top soil.

2.8 Technical Foundation design& construction

I'm not involved in design and suitability of structure near trees and would suggest the architect and structural engineer to have details to assist with the building regulation approval.

Other specifications with regard to future root threats from vegetation and soil movement /changes are to be considered.

Notes may be useful to the contractors.

No mechanical trenching for foundations or other inside of the trees root protection area and must be hand dig only.

Proposed piling with onsite investigation will determine the optimal location whilst avoiding damage and tree root loss.

Beams laid at or above ground level and cantilevered as needed to avoid unnecessary damage as identified by site investigation is a tried and tested method.

The smallest practical pile diameter to be used on site and crown clearance is satisfactory on site so facilitation pruning of low crown growth will be unnecessary.

The pile type will be sleeved to protect the leaching of uncured concrete into the surrounding soil area to protect the natural condition and soil properties.

2.9 Soil survey assessment

A soil assessment should be undertaken by a competent person to inform any decisions relating to whether the soil is shrinkable if it is; trees and other vegetation have the ability to cause indirect damage to structures.

In such cases, desiccation assessments should be carried out at a specialist laboratory to check the extent to which existing vegetation has dehydrated the soil.

: The root protection area

: Tree Protection

: New planting design

: Foundation design to take account of retained, removed and new tree planting schemes.

3.0 Protective barrier dismantling

Notes useful to onsite contractors and management-

Following site work construction complete, protective barriers can then be dismantled carefully and stored away from trees or hedges and stored without lasting damage away from landscape vegetation.

3.0 Tree Works /Planning Laws/Habitat and Wildlife

Under the provisions of the Town and country planning Act 1990(Tree Regulations1999) section211, any tree in excess of 75mm diameter, measured 1m from ground level is protected.

Prior to working any such tree protected either by an individual Tree Preservation order or by conservation area must submit an application of proposed work to the L.P.A. and receive approval to proceed with .The wildlife and countryside Act1981 provides statutory protection to birds, bats and other protected species. Any work should be planned and assessed to limit the potential adverse impact on wildlife generally. Taking into account season cycles of the species of fauna and flora concerned with the nesting of birds and egg laying habits of insects. I advise any pruning work or tree removal that may disturb the wildlife should be outside of the most sensitive times. Autumn/winter timing will be good timing. Nesting season will be over and the phenology timing suits the tree cycle and dependants.