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Addendum to: Tree Report & Arboricultural Impact Assessment. (Previous report ref: SB/JS/450 date February 2016).

Land at 6 Templewood Avenue, London NW3.

Client: Mr A. Alizade.

Date: October 2018.

Reference: SB/JS/616.

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Addendum to Tree Report - Land at 6 Templewood Avenue NW3.

Tree Survey and Arboricultural Impact Assessment. Recommendations for Tree Protection.

1.0 Brief and Objectives

- 1.1 This report has been prepared as an addendum to the previous tree report prepared for this property in February 2016 (Ref: SB/JS/450). It is understood that a planning application has been submitted for a new summer house / orangery in the rear garden. The LPA has asked for a tree report to set out the measures to be put in place for the protection of the Cedar tree during the construction of the new building. The large Cedar tree to be retained on the site has been identified on the attached Tree Survey and Protection Plan. The proposed development is for a new summer house / orangery to be located in the north east corner of the property and well outside the tree root protection area. The Tree Survey and Protection Plan is based on the Proposed Plan Layout Drg.No.06 by Hampton Conservatories.
- 1.2 A visual assessment of the health and structural condition of the tree was carried out in 2016 and the recommendations for management work were carried out. The tree is recorded on the enclosed plan Dwg. No. SB/JS/616/TS and in the Tree Schedule. Photographs of the tree taken in 2016 have been appended to help with identification. A previous tree inspection was carried out in 2009 and a Tree Report was prepared for the development at that time. This addendum to the 2016 report updates the information contained in the previous reports.
- 1.3 Having regard to the proposed development of the site, to measure tree stem girth and to calculate the Root Protection Area (RPA) in accordance with the BS 5837:2012 Trees in relation to design, demolition and construction Recommendations.
- 1.4 To prepare recommendations for a Tree Protection Plan and Arboricultural Method Statements, to ensure the satisfactory protection of the retained tree throughout the construction period.

2.0 Scope / Limitations

- 2.1 The location of the tree shown on the appended drawing has been measured and plotted from the previous layout drawing and now shows the outline of the proposed summer house / orangery in the northeast corner of the garden. There are other trees in the garden and adjoining property but they are a good distance from the proposed area of construction.
- 2.2 The assessment and recommendations made in this report are based on a visual assessment made at ground level only and no invasive or checking of internal structure has been undertaken.
- 2.3 Additional defects that are not visible from the ground level inspection may be present in the tree's root, stem and crown structure. The report does not guarantee the safety of any trees on site and Sacha Barnes Limited does not take responsibility for

subsequent or future damage or injury caused by trees on the site. No guarantee can be given to the structural integrity of trees when placed under extremes of weather, especially high winds or heavy snow fall.

3.0 Legislation - Notification of intention to carry out tree works.

3.1 It is understood that the tree is not protected by a Tree Preservation Order but the property is within the Redington Frognal Conservation Area and it is regarded as a 'protected tree'. The tree will therefore be fenced and protected throughout the construction period. Attention has been given to its amenity value, the contribution it makes to the character of the area and its local value to wildlife.

4.0 Assessment of Amenity Value

4.1 When considering trees for retention the British Standard 5837: 2012 requires an assessment to be made of their quality and amenity value. These are normally categorised as A of High Quality, B of Moderate Quality and C of Poor Quality. Trees that are dead or in a dangerous condition and should be felled are given a U rating. Trees that have to be removed for the new development are also given a U rating. Cedar tree T1 is a good specimen and is quite prominent as a feature of the Conservation Area and has been given an A rating.

5.0 Tree canopies and Root Protection Areas - Site access and the protection of trees within the Construction Exclusion Zone.

- 5.1 The measured tree canopy and Root Protection Area for Cedar tree T1 is shown on the Tree Survey and Protection Plan. RPA's should be regarded as Construction Exclusion Zones unless development has been permitted within this area and special measures of mitigation are taken. Based upon the recommendations of BS 5837:2012, the Root Protection Area (RPA) is calculated at a certain radius from the base of the tree. This is the minimum area in m² that should be left undisturbed (without special measures of mitigation). The RPA is calculated as an area equivalent to a circle with a radius 12 times the stem diameter for single stem trees when measured at 1.5 metres above ground level. The crown spread should not be used as a guide to the possible extent of major roots.
- 5.2 Unless special measures of surface protection are used or existing hard surfaces are retained, the whole of the RPA shall normally be fenced and protected from any disturbance and excavation during the construction period. In this situation the proposed construction will take place well outside the RPA but pedestrian and possibly light vehicular access will have to be taken across the RPA. A passage will need to be provided across the lawn so that operatives can carry the pre-constructed units over to the erection site in the northeast corner of the garden. Special ground protection will be provided to avoid soil compaction and to protect the root zone of the tree. See Method Statements below.

6.0 Measured Root Protection Area

6.1 The Root Protection Area for the retained tree has been plotted on the Tree Survey and Protection Plan. This is based upon the tree stem diameter and measured as a radius from the centre of the tree.

Tree Number	RPA Radius (m)	
T1	7.8m	

7.0 Soils and Foundations

7.1 The soil type is understood to be a medium clay loam. Previous excavations on the site have provided good information on the soil profile and will record the depth and nature of any underlying clay. Although the proposed summer house / orangery is well outside the RPA of the tree the presence of the tree will influence soil moisture levels and account should be taken of this when designing the foundations. Refer to the NHBC Standards – Chapter 4.2 for technical requirements, performance standards and guidance on the design of suitable foundations.

8.0 Tree Schedule Description

- 8.1 Please refer to each of the paragraphs on the Tree Schedule.
 - The Tag Number identifies the tree and refers to the number and location on the Tree Survey Drawing (Note: Trees have not been physically tagged or numbered on site).
 - The Species column gives the common and botanical name of each tree.
 - The Height column records the height of each tree measured as the overall height from ground level.
 - The Stem Diameter is then measured at 1.5m above ground level for single stem trees.
 - The ground clearance to canopy is the height between the ground and the first major limb.
 - The Tree Spread records the maximum spread of the tree canopy at the four cardinal points.
 - The Age Class is normally given as either young, early mature, mature or over mature.
 - The Life Expectancy is given as the estimated timescale before the tree seriously declines and may have to be felled.
 - The Physiological and Structural Condition is a record of certain factors that have been identified for attention, it is not a comprehensive diagnosis.
 - The Management column lists the main and most urgent management works required to address any structural condition that could cause a hazard or problem on the site. This may also include a recommendation for more detailed and more frequent monitoring of the tree.
 - The BS Classification gives an individual amenity rating in accordance with BS 5837: 2012.
 - The Priority column is a recommendation of whether the work required is of High, Medium or Low Priority. In the context of proposed construction or demolition work, any essential pruning has been given a high priority.

9.0 Arboricultural Impact Assessment

- 9.1 The Arboricultural Impact Assessment has considered the practical issues involved with the site preparation, gaining access across the lawn to the construction site and then the excavation and construction work that will take place entirely outside the RPA. It has identified the following 'potential' risks. Each of these potential risks is then addressed and answered in the Method Statement Recommendations that follow.
 - a) Risk Damage to tree stem and overhanging branches caused by the carrying of building units and materials across the lawn and below the canopy of the tree.
 Protection measure - Protective fencing will be put in place to protect the stem of the

tree and the carrying of materials will be supervised to make sure that no damage is caused to overhanging branches.

- b) Risk Damage to tree roots and tree health caused by the passage of vehicles and the rutting and compaction of soils. Also the frequent passage of pedestrians / site operatives. Damage caused to tree roots by lack of moisture and air caused by soil compaction and the use of sealed and impermeable paving materials. Protection measure - A 2.0m wide passage will be formed across the lawn with protective fencing on either side. Heavy duty access matts (such as Elite Trackguard) will be laid along the passage to spread loads and prevent the compaction of soils within the RPA.
- c) Risk Damage caused by accidents, inadequate controls within the Root Protection Area and lack of awareness by site operatives. Protection measure - The Site Agent and Contractor will be made fully aware of the method statements in this report and will be briefed by the Project Arboriculturalist at the start of the work.
- d) Risk Damage to tree stem, root and branches and contamination of soils caused by the operation of machinery and storage of plant and machinery and materials. Protection measure - No machinery will operate within the RPA and no materials will be stored in the RPA or in the near vicinity.
- e) Risk Damage caused by the lighting of fires too close to trees causing scorching, the desiccation of soils and drying / burning of roots. Protection measure - No fires will be lit on the site.

10.0 Method Statement Recommendations - For the Protection of Trees during construction.

- 10.1 The following paragraphs are a strict guide to the measures of protection required to ensure the proper protection of the Cedar tree. They shall be applied to all future construction and building operations.
 - a) Programme of Supervision and Monitoring of Protection (See method statement section attached) - The Project Arboriculturalist must be involved in the site preparation and construction work at the earliest stage to brief the main contractor and site operatives on the importance of compliance with the method statements set out in this report. Then to be in attendance to make sure that the protective fencing and protective matting is in place before materials are delivered or any construction operations take place. The programme of supervision and monitoring of protection set out in the attached method statement is rather generic and will be applied in a manner appropriate to the limited scale of the proposed development.
 - **b)** Tree Pruning and Management The tree management work identified in the previous report in 2016 has been carried out.
 - c) Protective Barrier / Fencing Construction Exclusion Zone The Cedar tree shall be protected in accordance with BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations. Before the proposed development works are started on site (including all ground works, scraping of top soil) protective 'Heras' fencing or scaffolding work (see attached detail) shall be erected on the alignment shown on drawing SB/JS/616/TS. This shall be erected and then inspected by the supervising agent before any materials or machinery is brought onto site and before any ground works are commenced. Once erected the the Low Impact Surface of protective matting will be laid over the surface of the access corridor.

- d) Site Compound Erection of site huts, delivery and storage of machinery and materials and parking of vehicles – The site cabins / storage units required for other construction work on the main building are already in place on the stone patio area. It's is understood that no further huts or storage units are required for the erection of the summer house / orangery. The stone patio is very well constructed and the weight of the cabins is not likely to impact on the tree roots below. No other materials, machinery, site huts, fuel oils or chemicals shall be stored outside of this area and none shall be permitted within the Root Protection Area of the Cedar tree (the fenced Construction Exclusion Zone). Measures will be taken to prevent the seepage or spillage of fuel oils and other liquids such as cement slurry beyond the existing site compound. The contractor must be aware of the restricted height clearance caused by the overhanging tree and then to make sure that when operatives carry large panels across the lawn they are supervised to avoid causing any damage to low limbs and overhanging branches.
- e) Lighting of Fires No fires shall be lit on the site.
- f) Notices Tree protection notices shall be fixed to the protective fencing where they can clearly be seen from all approach angles. They shall also be displayed in site huts making it clear to all site operatives and visitors that the Cedar tree is protected. See attached detail of a typical notice.
- **g) Protection of tree roots** No excavations for foundations and construction shall be made within the RPA and fenced Construction Exclusion Zone.
- h) Surface treatment below trees and no dig construction It is important that the ground below the trees remains porous and well drained, allowing air and moisture to the tree roots. A heavy duty matting such as Elite Trackguard will be laid along the passage across the lawn for the short duration of the construction period for the summerhouse / orangery. On completion of the work and the removal of the matting the surface of the lawn will be forked over to relieve any surface compaction.
- i) Pedestrian access and working within the RPA For the construction and building works it will be necessary for pedestrian access to be taken within the Root Protection Area. Wherever possible pedestrians / operatives shall gain access and work outside the fenced Construction Exclusion Zone. Where access is required for the carrying of materials to the site this must be taken over the protective matting as set out in h) above. The matting shall be left in place until the construction works are completed.
- **j)** Construction within the RPA No construction will be permitted within the Root Protection Area.
- k) Services and Utilities It is understood that the services required for the new summer house / orangery will be routed from the main house along the northern boundary of the garden. No excavation for services will be permitted within the Root Protection Area.
- 11.0 Tree Pruning / Management Operation Recommendations (Refer to Tree Schedule).

There is still a small amount of dead wood in the crown of Cedar tree T1. The recommendation in the tree schedule is for the dead wood throughout the crown to be removed. The tree work shall be carried out in accordance with BS3998: 2010

'Recommendations for Tree Work' and in compliance with current industry best practice.

12.0 Ecology / Wildlife Interest

12.1 The arboricultural brief did not require a detailed survey of fauna and flora within the site and on inspection it is very unlikely that Cedar tree T1 is being used by bats or owls for roosting / nesting. All tree works must be carried out and completed during daylight hours when bats are not in flight. If possible, non-urgent tree works should be carried out before or after the bird nesting season, between the middle of March and the end of August.

13.0 Conclusion

13.1 I have carried out a thorough Arboricultural assessment taking full account of the operations required for the construction and erection of the proposed summer house / orangery building. I am satisfied that provided the method statement recommendations given above are followed there should be no harm caused to Cedar tree T1.

Tree Schedule – 6 Templewood Avenue NW3.

Tag	Species	Height [m]	Stem Dia. [mm]	Ground Clearance to Canopy	Tree spread (m)			٨٥٥	Life	Physiological		BS 5837 -		
No.					Ν	Е	S	w	Class	Exp (Y)	and structural condition	Management	2012 classification	Priority
T1	Atlas Cedar <i>Cedrus atlantica</i>	14	650	6.0m	6.8	7.4	6.5	6.3	Mature	>30	Good form with moderate vigour. Slight lean to north. Main stem forks at 8.5m. Past pruning has raised crown to 6.0m. Roots part restricted by stone slab patio on the north side and stone slab path on the west and south sides. Minor dead branches throughout crown. (Subject to proposed construction of a summerhouse / orangery in the rear garden but outside the Root Protection Area).	Remove minor dead branches. (Protect within context of proposed access and construction work).	A	High





Project:						
Land at 6 Templewood Avenue, London NW3.						
Drawing:						
Tree Survey and Protection Plan.						
Scale:	Date:					
1:200 @ A3	October 2018					
Drawing No.						
SB/JS/616/TS						
Sacha Barnes Ltd						
The Colin Sanders Innovation Centre, Mewburn Road, Banbury, OX16 9PA Tele: 01295 817640, email: enquiries@sachabarnes.com						

Drawing based on proposed plan layout by Hampton Conservatories.

Photographic record (Photographs taken in 2016)



Photograph 1 – Cedar tree T1. The site cabins have been placed on the stone patio surface for the duration of the construction work. The protective fencing is a temporary measure and will be moved out to protect all the soft ground within the Root Protection Area.



Photograph 2 – Looking down the side of the building and the existing stone slab path and patio. The stem of the Cedar tree to the right of photograph.

Programme of Supervision and Monitoring of Protection.

Programme

The following programme of supervision and monitoring is governed by operational constraints and subject to change. The Project Aboriculturalist must be given prior notice of any changes to the schedule. (See Arboricultural Supervision / Monitoring Description below)

Phase 1 – Pre development stage

- Pre-commencement site meeting between Project Arboriculturalist, (PA); Project Manager, (PM); Project Architect (Arch); Site Manager (SM) and Contractor (Con). The Local Planning Authority (LPA) shall be informed and given the opportunity to attend.
- Permitted tree removals / pruning of trees directly or indirectly impacted by development.
- Induction and arboricultural awareness meeting with the above and all site operatives. Copies of the Summary of Tree Protection Measures shall be issued.
- Installation of all ground protection measures including fencing, signage and ground protection measures in accordance with the requirements of the Tree Report / Methodology Statement.
- Final Inspection and signing off of all tree protection measures by PA. To be recorded on the Site Monitoring Report Sheet.

Phase 2 – Development construction stage

- Phase 2 is subject to monthly monitoring visits by the PA. These inspections may become more frequent if considered essential by the PA or as required by the PM, Arch, SM, Con or LPA.
- Daily inspections and monitoring of the tree protection elements will be the responsibility of the PM, SM or Con. The Project Arch should also check on these measures when visiting the site. <u>Any</u> changes, adjustments of damage caused to the tree protection measures shall be recorded on the Site Monitoring Report Sheet and this shall be signed and retained on site as a site record. The PA, Arch or LPA may ask for a copy of these records at any time.
- All the above personnel will have delegated powers to require the immediate reinstatement / repair of any tree protection measures that may have been damaged or breached by construction work.
- Access to site by vehicles will be via the identified entrance / entrances. (These will normally be shown on the Project Arch's site plan or the PA's Tree Protection Plan.
- Installation of site compound / huts / WC / materials / fuels, must be outside of all exclusion areas shown on the Tree Protection Plan. (These will normally be fenced).
- Temporary ground works and services No ground works or underground services are permitted within the tree protection areas. No temporary overhead cables, pipes or services shall be routed through the tree protection areas unless first approved by the PA. This shall be recorded on the Site Monitoring Report Sheet.
- Start of demolition /groundwork/ excavation The PM or SM shall give the PA and LPA seven days notice of the start of any demolition, groundwork or excavation on site.
- Completion of development construction stage and reinstatement. The PM shall inform the PA of the completion of the development construction stage and none of the tree protection measures shall be removed until the PA has signed them off on the Site Monitoring Report Sheet.

Phase 3 – Post development construction stage.

- Removal of protective fencing and protective surfacing and reinstatement of site.
- Final inspection and signing off of all tree protection measures by the PA.
- Landscaping contractor / operatives briefed by the PA.

Arboricultural Supervision / Monitoring Description.

Arboricultural monitoring involves the inspection of the site works, the trees, tree protection measures and the completion of the Site Monitoring Report Sheet. The S.M.R.Sheet must be signed by the Project Arboriculturalist (PA) and Project Architect, Project Manager (PA) or Contractor (Con). If required, copies will be posted to the Local Planning Authority (LPA).

The monitoring visit is to ensure that the approved tree protection measures are continually adhered to and if remediation is required, that this is promptly addressed and made clear to all parties.

Arboricultural supervision is to be carried out at all crucial stages in the Development Programme to ensure detailed tasks are carried out in accordance with the requirements of the Tree Report / Methodology Statement. At all points as detailed above and especially during:

- Remedial tree works as recommended within the Tree Report.
- Erection of tree protection fencing. (See detail within Tree Report).
- Any demolition or excavation near to the edge of Root Protection Areas.
- Hand excavations for any tree protection fencing posts.
- Any essential temporary incursion into the RPA's / Construction Exclusion Zone.
- Any exposure and pruning of roots over 50mm diameter found within excavations.

This supervision will require the PA to be present throughout the task, to ensure all the arboricultural objectives are met. If the task is to take a long period of time, provided the PA is satisfied, the supervision may be reduced to telephone contact between the PA and PM or Con.

The LPA Arboriculturalist will have free access to the site (site security and health and safety requirements to be observed at all times) and will pass any recommendations to the PA or PM.

Remedial tree works as recommended within the Tree Report should normally be carried out prior to the erection of the tree protective fencing, however, it may be expedient to mark out the extents of any fencing and essential access to indicate if any crown lifting will be required.

Temporary site access across any areas designated for low impact (no dig) measures may be achieved by use of the Cellweb construction (See description within Tree Report). Any temporary protective surfacing must be capable of supporting the expected loads to avoid compaction, rutting or disturbance to soil within or close to the Root Protection Areas.

The PA will inspect the removal of any temporary surface within Root Protection Areas (Where applicable) and the reinstatement with top soil. The PA will sign off the final Site Monitoring Report Sheet when all reinstatement has been completed.

on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 3b).

NOTE 1 Examples of configurations for steel mesh perimeter fencing systems are given in BS 1722-18.

NOTE 2 It might be feasible on some sites to use temporary site office buildings as components of the tree protection barriers, provided these can be installed and removed without damaging the retained trees or their rooting environment.

6.2.2.4 All-weather notices should be attached to the barrier with words such as:

"CONSTRUCTION EXCLUSION ZONE - NO ACCESS".





- 5 Uprights driven into the ground until secure (minimum depth 0.6 m)
- 6 Standard scaffold clamps

Example of Tree Protection Sign.







TREE PROTECTION AREA KEEP OUT ! (TOWN & COUNTRY PLANNING ACT 1990) TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER. CONTRAVENTION OF A TREE PRESERVATION ORDER MAY

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

LEAD TO CRIMINAL PROSECUTION