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Arboricultural Report

Tree Survey

Arboricultural Impact Assessment

Tree Protection Specification

On proposed development at

**32 Torrington Square
Bloomsbury
London
WC1E 7HX**

Client

Birbeck University of London

Prepared by

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Site	32 Torrington Square, Bloomsbury, London. WC1E 7HX.
Survey Date	17 October 2017
Report Date	07 November 2017
Surveyed by	Curtis Barkel

1.0 Instructions

- 1.1 Sylvanarb has received instructions to carry out a BS5837 Tree Survey and provide an Arboricultural Impact Assessment and tree protection specification, in respect of the proposed development as detailed on the Bissett Adams, Proposed Ground Floor Plan, Ref: BB029-1202-D2, Rev. P3.

2.0 Documents Supplied

- Randall Surveys, Site Survey, Ref. 14672/JD/1.
- Bissett Adams, Proposed Basement Plan, Ref: BB029-1201-D2, Rev. P3.
- Bissett Adams, Proposed Ground Floor Plan, Ref: BB029-1202-D2, Rev. P3.
- Wilder Associates, Stage 3 Landscape Design details, drawing Refs: 001-006.

3.0 Aim of Report

- 3.1 To survey existing trees in accordance with BS5837 2012: *Trees in Relation to Design, Demolition and Construction (BS5837)*, in order to assess the condition and quality of trees located on the site.
- 3.2 To assess the impact of development proposals on existing trees.
- 3.3 To advise on tree retention/removal and provide a specification for tree protection measures required to protect trees identified for retention throughout the development of the site.
- 3.4 To advise on tree work required to accommodate the proposed development.

4.0 Scope of Report

- 4.1 The survey has been carried out in accordance with British Standard 5837:2012 *Trees in Relation to Design, Demolition and Construction* (BS5837).
- 4.2 The trees have been inspected considering the current and proposed site use. The assessment categories have been allocated on the condition and merits of the individual tree irrespective of the proposed development.
- 4.3 A detailed condition survey and hazard assessment of the subject trees has not been carried out, where obvious faults have been noted a further detailed condition assessment may be recommended in the tree survey comments column (see Appendix A).
- 4.4 The 'Required Tree Works' set out in Section 11.0 detail the tree works required to accommodate the proposal.
- 4.5 Prior to tree work being carried out the Local Planning Authority is to be consulted to ascertain whether prior permission is required to carry out such work.
- 4.6 A tree with internal structural faults will often display associated external evidence of such faults, these would be noted in a visual tree inspection. However such signs are not apparent at all times of the year, for example pests and diseases or leaf size and condition. The following findings and recommendations have been drawn from the evidence present on the day of inspection.
- 4.7 All advice given in this report is based on the information available on the day of inspection. Should additional information not available or apparent on the day of inspection come to light, the right is reserved to modify the conclusions found within this report. This report is valid for 12 months notwithstanding change of site conditions, extremes of weather or other such overriding environmental changes.

5.0 Survey Method

- 5.1 The survey includes those trees on and adjacent to the application site with a stem diameter greater than 75mm measured at 1.5m from ground level.
- 5.2 Subject trees have been allocated identification numbers prefixed with 'T'.
- 5.3 The locations of subject trees have been estimated using a laser measure. The approximate tree locations shown on the Tree Survey Plan and Tree Protection Plan are considered to be sufficiently accurate to assess the impact of development and provide adequate detail of required tree protection.
- 5.4 The survey was carried out with the help of the following inspection aids:
- Digital Clinometer To calculate tree heights
 - Diameter tape To measure stem diameters
 - Laser measure To plot trees where necessary and canopy extents
- 5.5 Each tree was inspected from ground level noting external faults and features only. The inspection did not include an aerial crown inspection, detailed excavation of the root system or the use of internal decay detection equipment.

6.0 Site Details

- 6.1 No.32 Torrington Square is a Grade II listed, Georgian end of terrace house, located to the east of Torrington Square.
- 6.2 The application site includes No.32 and the adjacent area of land to the north, formerly 33 Torrington Square.
- 6.3 The building is comprised of five stories, including the basement.
- 6.4 The rear garden is between basement and ground floor level, accessed via steps down from ground floor level, and up from basement level. A substantial retaining wall separates the garden from the service area to the side and rear of the property, which is up to approximately 2m lower than the existing garden level.
- 6.5 The house is currently disused and in need of renovation.
- 6.6 The British Geological Survey describes the underlying geology as London Clay Formation, with superficial deposits of Lynch Hill Gravel, to depths of 1-12m. The presence of London Clay presents the potential for vegetation related building damage. As such, a structural engineers advice and site specific soil samples are recommended to inform the design of building foundations in accordance with NHBC Ch.4.2.

7.0 Planning Proposal

- 7.1 A planning application has been submitted to Camden Council and registered under planning reference 2017/4300/P, the scheme proposes:

'Restoration of 32 Torrington Square including internal changes together with erection of a 4-storey new annex building (plus basement) within the gap land to the north to accommodate a research facility (Toddler Lab) for Birkbeck, University of London (Class D1 Use).'
- 7.2 No. 32 is to be renovated and linked to the adjacent proposed building to provide an educational and research facility for Birbeck.
- 7.3 The existing garden area to the rear of no.32 is to be landscaped to provide a secluded, open space for families using the facility.
- 7.4 Access to the new building will be gained from pavement level on Torrington Square, with a sloping access passage also provided, from pavement level down to the service area to the rear of the building. Rear access to the building is also provided, adjacent to a cycle shelter proposed alongside the rear boundary wall of no.32.

8.0 Subject Trees

- 8.1 The survey identifies three individual trees, one located in the rear garden of No.32, the others located in the rear gardens of neighbouring properties.
- 8.2 The trees have been graded into quality assessment categories in accordance with recommendations given in BS5837:2012 *Trees in Relation to Design, Demolition and Construction*. One tree is graded in Category A; one in Category B; and one in Category C (see Appendix A for full category definitions):
- 8.3 Table 1 provides a breakdown of tree quality assessment:

Table 1: Retention Category Breakdown

BS5837:2012 Category	Tree Survey Numbers	Total
A	T3	1 x Individual
B	T2	1 x Individual
C	T1	1 x Individual
U	-	0

- 8.4 Trees classified in Category A are considered to be high value trees with a minimum of 40 years potential in the existing setting. Tree T3 is located in the rear garden of No.30 Torrington Square and, in arboricultural terms, is a good example of the species. However, being located to the rear of the terrace block, the tree has limited wider public amenity value.
- 8.5 Trees classified in Category B are recognised as being trees of moderate quality and value with a minimum of 20 years potential in the existing setting. Tree T2 is located in the rear garden of No.31 Torrington Square, adjacent to the side boundary wall with No.32. Again, due to the location, this tree has limited wider public amenity value.
- 8.6 Trees classified in Category C are considered to be of poor form and/or offer limited current or long-term potential. Tree T1 is located in the garden of No.32 Torrington Square, this is a small tree of no significance to the character of the site or the wider Conservation Area.
- 8.7 Camden Council Planning Administration has confirmed today that none of the subject trees are protected by Tree Preservation Order. However, Torrington Square is located in the Bloomsbury Conservation Area, this requires that formal notice of any intended tree works be submitted to the LPA six weeks prior to undertaking the works (unless approved under detailed planning approval).

9.0 Arboricultural Impact Assessment

9.1 *Trees Requiring Removal to Accommodate Proposal*

9.1.1 One tree located in the rear garden of 32 Torrington Square is to be removed under the landscaping proposals for the garden space.

Table 2: Trees Requiring Removal to Accommodate Proposal.

Tree No.	Species	Condition/Comments	Reason for Removal	BS5837 Cat.
T1	Elder	Mature tree of limited current or potential significance.	Re-designed landscaping proposals.	C1

9.1.2 Tree T1 is graded in Category C, contributing little to the character of the site or wider local area. The tree is not considered to be of such value or significance as to impose constraints to the proposed landscaping improvements.

9.1.3 The landscaping proposals include a replacement tree and a variety of shrubs and plants, these more than compensate for the loss of T1, providing an attractive, low maintenance garden space for visitors.

9.1.4 The loss of T1 will be of no detriment to the character of the Conservation Area.

9.2 *Impact of Development on Trees Identified for Retention*

- 9.2.1 Assuming that the recommended tree protection measures provided herein are applied, those trees shown for retention on the Tree Protection Plan may be successfully retained in accordance with BS5837:2012.
- 9.2.2 The retained trees (T2 & T3), are located in the rear gardens of neighbouring properties. In situations such as this: where there are level changes; retaining walls; boundary walls and buildings within the standard (circular) Root Protection Area (RPA), the exact pattern of expected rooting is difficult to ascertain. However, it is expected that the rear garden of No.32 Torrington Square will serve as part of the rooting area for the two neighbouring trees. As such the rear garden is to be treated as a protected area throughout the duration of development works on site.
- 9.2.3 Due to the nature of the site, no tree protection fencing is required, however the garden space is to be fitted with Temporary Ground Protection, to provide access for contractors when carrying out external works and to provide a storage space for materials. Temporary ground protection is to be installed across the garden area in accordance with BS5837, as detailed at Section 10.3 and Appendix C.
- 9.2.4 Other than the provision of replacement steps, from garden to ground floor level; and the provision of a disabled access lift and steps, from basement to garden level, no other external development works are proposed within the rear garden. These works are located in the area immediately adjacent to the rear of the existing building and present minimal impact on the protected garden space. It is considered that these works may be carried out without risk to the long-term health of the retained trees.
- 9.2.5 The proposed cycle store to the rear of No.32 will require excavation of the existing soil bank next to the rear retaining wall. This bank is within the potential rooting zone of the two retained trees. The presence of roots here will depend somewhat on the depth of the retaining wall: i.e. if the wall is deeper than the level of the proposed cycle store, the likelihood of encountering tree roots within the bank is decreased; however, if the wall foundation is shallower than the cycle store level, the potential for the presence of tree roots within the bank increases.
- 9.2.6 Trial pits will be required prior to carrying out the main excavation to determine the depth of the wall foundation. This work will also be used to determine the presence and extent of any tree roots. Trial pit excavation is to be carried out using hand tools only, ensuring any roots larger than 25mm diameter are not severed without first seeking further arboricultural advice and the permission of the Local Authority Tree Officer.
- 9.2.7 Upon completion of the renovation of No.32 and the construction of the proposed building, the rear garden is to be re-landscaped as detailed in the submitted Wilder Associates Stage 3 Landscape Design scheme. The specification as proposed, and detailed on Drawing 006 of the submitted document, requires minor modification to minimise excavations within the potential rooting zone of retained trees and to provide permeable surfacing.

9.2.8 The following modifications have been discussed with the landscape architect, it is expected that these details will be finalised and agreed under conditions attached to any planning approval granted:

1. Planting Area Around Perimeter of Garden:

Proposed 475mm deep excavation for imported topsoil not carried out.

Amelioration of existing soil to be undertaken only.

2. Artificial Turf:

Type 1 aggregate base layer to be replaced with washed no-fines aggregate, such as Type 3.

3. Decking:

Concrete slab to be removed from spec, Type 1 replaced with Type 3 (or similar permeable aggregate). Total depth of base layer to be reduced from 300mm, to the minimum required to install Kinley aluminium support rails - consult manufacturer.

4. Resin Bound Gravel:

Type 1 aggregate base layer to be replaced with washed no-fines aggregate such as Type 3.

5. Bench:

Recommend that the concrete slab be removed from spec, Type 1 replaced with Type 3 (or similar permeable aggregate), depth of base layers reduced where at all possible - landscape architect has agreed to consult with structural engineer.

6. Block Paving:

Type 1 aggregate base layer to be replaced with Type 3 (or similar permeable aggregate).

Replace proposed 'Tobermore Pembury Heather' blocks with their 'Hydropave' permeable range, such as 'Hydropave 240 Heather' for garden area and 'Hydropave Mayfair Flags' for the cycle stand.

9.2.9 All excavations within the rear garden of No.32 are to be carried out using hand tools only and in accordance with the guidelines provided at 7.2.1 of BS5837. Any roots encountered that are larger than 25mm diameter must not be severed without first seeking further arboricultural advice and the permission of the Local Authority Tree Officer.

9.2.10 No tree pruning work will be required to retained trees to accommodate the scheme.

10.0 Tree Protection Measures

10.1 *Monitoring and Maintenance*

- 10.1.1 The trees identified for retention are protected under Conservation Area legislation. To cause damage to protected trees, even unintentional damage, is an offence carrying potentially heavy penalties. It is imperative that the recommended tree protection measures are installed, and all works carried out, in accordance with the following recommendations.
- 10.1.2 The contract manager is to be made aware of their responsibility to ensure that the specified tree protection measures are installed prior to commencing works on site and maintained throughout the development and through to immediately prior to landscaping works.
- 10.1.3 The location and reason for tree protection measures is to be highlighted at the induction of all new contractors involved with the project.

10.2 *Tree Protection Fencing*

- 10.2.1 No tree protection fencing is required.

10.3 *Temporary Ground Protection Measures*

- 10.3.1 Temporary Ground Protection (TGP) is required to protect the soil profile within the rear garden of No.32 Torrington Square.
- 10.3.2 The location for TGP is shown on the Tree Protection Plan (Appendix B).
- 10.3.3 TGP is to be installed in accordance with the principles provided at 6.2.3 of BS5837: 2012, the details of which are provided at Appendix C.
- 10.3.4 Ground protection is to be installed prior to commencement of any works on site and maintained throughout the development phase. TGP may only be removed immediately prior to carrying out the approved landscaping works.

10.4 *General Protection Measures*

- 10.4.1 No access into the rear garden is permitted without first installing the specified Temporary Ground Protection.
- 10.4.2 Other than approved development, no level changes, service runs or other excavations are to be carried out within the standard circular Root Protection Areas (as shown on the Tree Protection Plan), without first seeking further arboricultural advice and Local Authority Tree Officer permission.
- 10.4.3 No fires are permitted where flames will reach within 5m of a tree canopy.
- 10.4.4 No storage or discharge of materials harmful to tree health is permitted on unsealed surfaces within 10m of any retained tree, including storage of fuels, tarmac, cement and oil.
- 10.4.5 No cement mixing is to be carried out on unsealed surfaces within 10m of any retained tree.
- 10.4.6 Final revised details of proposed soft & hard landscaping within the rear garden of No.32 are to be submitted for approval by the LPA Tree Officer, in order to minimise the risk of damage to tree root systems.

11.0 **Required Tree Works**

- 11.1 Table 3 provides details of the tree work required to accommodate the proposal.

Table 3: Proposed Tree Work

Tree No.	Schedule of Works
T1	Fell and grind/grub-out stump.

- 11.2 The removal of T1 is required to accommodate the proposed landscaping scheme. Should detailed planning approval for the development be granted it will be assumed, unless the LPA informs otherwise, that the tree works detailed at Table 3 may be carried out under the planning approval without any additional notification of intent or application for tree works.
- 11.3 The tree work is to be carried out prior to the commencement of any demolition/development operations on the site.
- 11.4 Tree work is to be carried out by a competent arborist in accordance with the British Standard for tree work BS3998: 2010 'Recommendations for Tree Work'.
- 11.5 Upon completion of tree works the prescribed tree protection measures are to be installed as detailed on the Tree Protection Plan (TS/TPP/1374-02).

12.0 Conclusion

- 12.1 The two off-site trees identified for retention are to be retained and protected in accordance with BS5837:2012.
- 12.2 This will require revisions to landscaping proposals, to be approved under planning conditions; and the excavation of trial pits, and further arboricultural advice sought, prior to proceeding with the proposed cycle store.
- 12.3 The scheme requires the removal of one low value tree from the rear garden of No.32 Torrington Square. The loss of this tree will be of no significance to the visual amenity of the application site, or the wider character of the Conservation Area.
- 12.4 The scheme provides a valuable educational/research resource, whilst also presenting the opportunity for the LPA to secure a high quality landscaping scheme to improve the character of the rear garden space, whilst maintaining a healthy rooting environment for the adjacent trees.

13.0 Recommendations

- 13.1 The recommended tree protection measures detailed herein are to be adhered to at all times. Should any need arise to alter or not comply with any of the recommendations given within this report the prior written permission of the Local Authority Tree Officer is required.
- 13.2 Details of the location of service runs have not been provided, clarification of service routes is required and is to be approved by the LPA Tree Officer. Contractors responsible for the installation of services are to be instructed to carry out such works in accordance with recommended guidelines given in NJUG Vol.4.
- 13.3 An individual (such as the Contract Manager) is to be appointed with responsibility for all arboricultural affairs during development. This individual is to be fully aware of the arboricultural requirements on the site and is to be responsible and held accountable for the monitoring and enforcement of tree protection measures.
- 13.4 Prior to any tree work being carried out enquiries are to be made to the LPA to clarify whether prior permission is required. To carry out unauthorised work to a protected tree carries heavy penalties.

References

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'Principles of Tree Hazard Assessment and Management', HMSO

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'Modern Arboriculture', Shigo and Trees Associates

BS 3998: 2010

'Recommendations for Tree Work', British Standards Institute

BS5837: 2012

'Trees in Relation to Design, Demolition and Construction - Recommendations', British Standards Institute

National House Building Council (NHBC)

'Building Near Trees', Chapter 4.2

National Joint Utilities Group (2007)

NJUG Vol.4 Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees