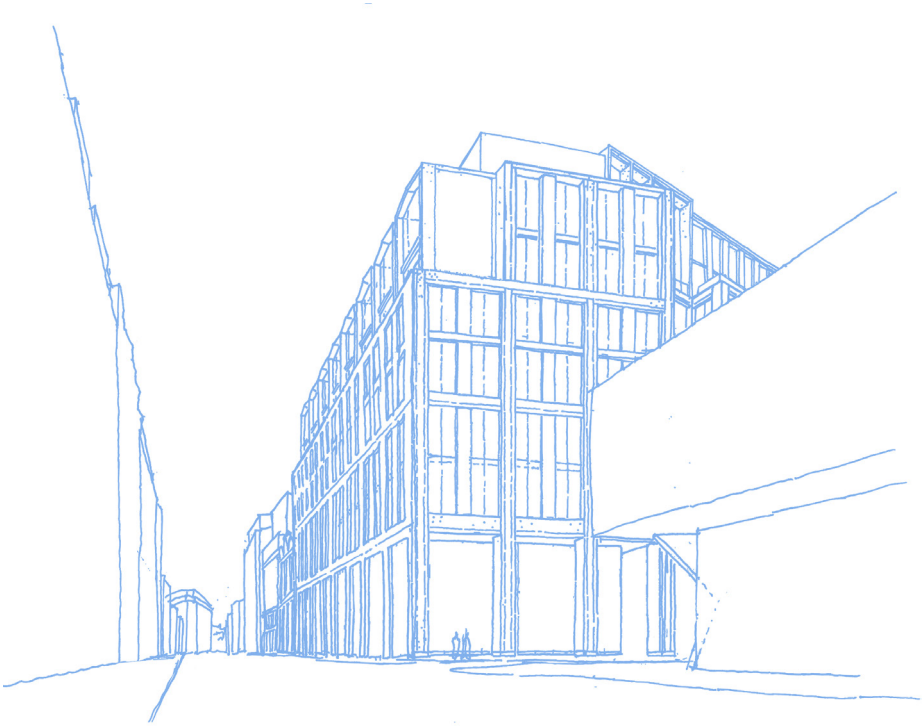
Prepared by Sharon Hosegood Associates
On behalf of Royal London Mutual Insurance Society

Arboricultural Impact Assessment Report

Castlewood House & Medius House, WC1A



January 2017

Sharon Hosegood
ASSOCIATES

ARBORICULTURAL IMPACT ASSESSMENT REPORT
BS 5837:2012 'Trees in relation to design, demolition and construction. Recommendations'

report

SITE

Castlewood W1A

New Oxford Street

London

W1A

CLIENT

Royal London Mutual Insurance Society

SHARON HOSEGOOD
FICFor FArborA BSc (Hons) Tech Cert (ArborA)

DATE: 27.07.16
OUR REF: SHA 188 Rev A
7.01.17

Executive summary

This report is submitted in connection with a planning application for redevelopment at Castlewood, New Oxford Street, London W1A. I have provided all information in accordance with the British Standard (BS 5837: 2012 '*Trees in relation to demolition, design and construction – recommendations*' (referred to as BS). This report follows a preliminary arboricultural report and design team meeting to inform design.

The development results in the removal of two trees; one which is in decline (grey alder, T5) and the other is a smaller tree (Italian alder, T6). All other trees will be retained to enhance the landscape and will be protected during construction. This scheme includes significant new landscaping in the public realm.

Two street trees growing in the pavement on New Oxford Street will be retained and protected during works. Two other street trees, growing in a triangular paved area fronting Earnshaw Street, will be retained and protected during public realm improvements. The draft method statement included in the report outlines how the work will be carried out, but will need to be detailed further post-planning. The works will be carried out under arboricultural supervision.

The development of this site includes new planting to improve the tree canopy cover which is relatively low in this part of Earnshaw Street.

Contents

Appendices

1. Introduction:

1.1. This report accompanies a planning application, which will be submitted on behalf of the applicant Royal London Mutual Society for demolition of the existing building, at Castlewood House, and construction of a replacement ten storey mixed use building, plus ground and two basement levels, including the provision of retail (Class A1 and/or A3) and office (Class B1) floor space. External alterations to Medius House including partial demolition, retention of the existing façade and two floor extension to provide 20 affordable housing units (Class C3), together with associated highway improvements, public realm, landscaping, vehicular and cycle parking, bin storage and other associated works.

1.2. This report details tree condition, the impact of the proposal on, and from, the existing trees and the measures taken to protect trees to be retained. It also includes tree surgery recommendations.

1.3. The survey has resulted in a layout as shown in the tree protection plan at Appendix 3. Where technical terms are used, the words are in grey and explanations are found in the glossary.

2. Statement of instructions and the issues addressed:

2.1 I was instructed by Mr P Little of CBRE on behalf of Royal London Mutual Society on 6thth May 2016, to:-

a. Carry out a tree survey in accordance with BS 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*' (BS);
b. Analyse the proposals and the impact on trees to be retained;
c. Produce a tree protection plan, showing the location of the tree protection fencing in accordance with the BS and a specification for the protection of the existing trees;
d. Provide a tree surgery schedule which includes work to facilitate construction, based on the layout of, and works to, trees due to their condition or previous management; and
e. Provide arboricultural method statements in as much detail as is practical at this stage.

2.2. The issues addressed are tree condition and how the scheme impacts on the scheme, and vice versa.

3. The site:

3.1. Castlewood House is an existing office (Class B1) building providing 13,099sqm GEA of commercial floorspace over nine storeys. The existing post-war building is predominantly a brown brick facade above a single storey stone plinth. It is solely office use, from lower ground floor (looking out into the sunken courtyards to the rear of the building) to level 08, with the main entrance accessed from New Oxford Street.

3.2. Medius House comprises 652sqm GEA of retail (Class A1) at ground floor level and 1,610sqm GEA of office (Class B1) floorspace over five upper floors. The existing interwar building of five storeys, stepping up to six storeys at the junction with Dyott Street.

3.3. The application red line is 0.3 ha. The rear of the site has a complex topography due to the slope leading down to a sunken car park, 2.5m lower than Bucknall Street. The site boundary with Earnshaw Street is 3m lower than the pavement, and is enclosed by a boundary wall

4. The trees:

4.1. *Generally:* There are six trees which form the subject of this survey, two of which are on site. Full details are found in the survey sheets at appendix 1 and their location on the tree survey plan at appendix 2.

4.2 *Legislation:* Medius House is located within the Bloomsbury Conservation Area. A check with Camden Council on 3 June 2016 confirmed that the trees are not protected by a Tree Preservation Order. The only tree which falls within the conservation area is one of the street trees, T2. The four street trees (T1, T2, T3 and T4) are managed by Camden Council and any works to these trees must be carried out by their approved contractors.

5. The Proposal

5.1 The proposed development comprises: for demolition of the existing building, at Castlewood House, and construction of a replacement ten storey mixed use building, plus ground and two basement levels, including the provision of retail (Class A1 and/or A3) and office (Class B1) floor space. External alterations to Medius House including partial demolition, retention of the existing façade and two floor extension to provide 20 affordable housing units (Class C3), together with associated highway improvements, public realm, landscaping, vehicular and cycle parking, bin storage and other associated works.

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5.2 For specific details on this application, refer to the planning statement by Gerald Eve.

6. Arboricultural impact assessment:

6.1. *Summary of the impact on trees*: Development can adversely impact on trees by causing them to be removed to facilitate the development, or in the future, by adversely affecting their potential for retention through disturbance in root protection areas (RPAs) or through post development pressure to prune or remove.

6.2. Tree roots can be asphyxiated and die if the rooting zone becomes compacted and soil structure damaged which can easily occur, particularly on clay soils, even with the passage of light vehicles. At the design stage, disturbance within the RPA should be avoided. If unavoidable (which may need demonstrating), consideration must be given to any construction activity such as demolition, including removal of existing hard surfaces, changing soil levels and the provision of services where within RPAs, as well as new surfaces and structures.

6.3. Construction of hard surfaces and other construction may be acceptable within RPAs providing specialist methods of design and construction are used. This can result in the use of minimal or no-dig methods which result in higher finished levels which must be allowed for during design due to the effect on access thresholds and structure heights etc. The ability of trees to tolerate some disturbance depends on individual circumstances including prevailing site conditions, tree species, age and condition which will be assessed by the Arboriculturist.

6.4. *Arboricultural Impact Assessment*

6.5. *Comments on specific trees and the arboricultural impact*

6.5.1 T1 and T2 purple Norway maple

These are both street trees managed by Camden Council. They are of moderate value and in early maturity. They are 10.5m high with an average crown spread of 6m. They have been historically crown lifted to clear the traffic, however T1 has a large wound on the lowest branch over the road as a result of being hit by a passing vehicle. I recommend that this damage should be pointed out to the tree officers at Camden Council so that they can prune this branch.

The trees are the only trees on this part of New Oxford Street and therefore, whilst they are unremarkable specimens, they play an important part in the landscape character of the area.

They have a root protection area* equating to a circle with a radius of 2.8m and 2.4m respectively.

**Root protection area: A layout tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.*

Photo 1 of T1 looking east

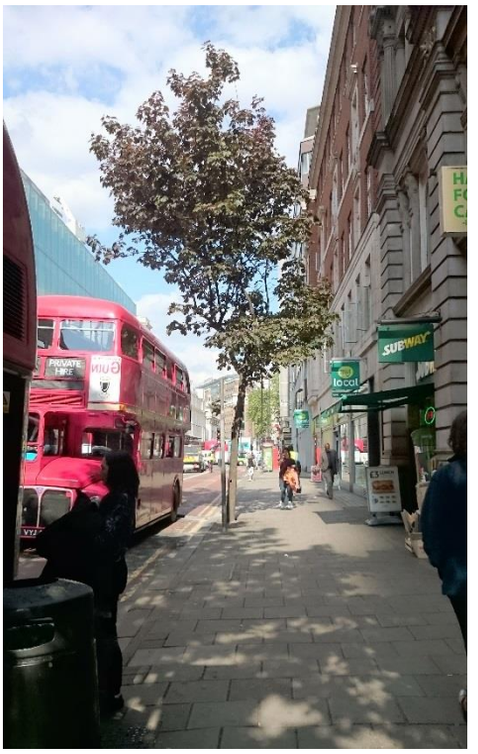

Photo 2 of T2 looking east

Photo 3 of the damaged branch on T1

This should be pruned to reduce the strain on the wound

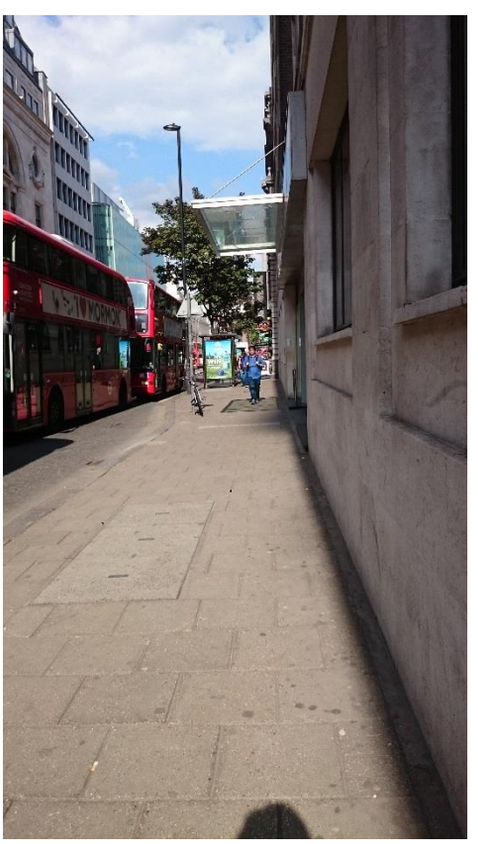

Photo 4 of T1 and T2 looking east showing the expanse of pavement leading up to the trees

Arboricultural impact assessment: The trees are within the ownership of Camden Council. A proposed north-south footpath from Bucknall Street to New Oxford Street will open up a vista of T1 from the south. There may need to be some very light pruning of the crowns of the trees on the southern side to facilitate scaffolding. This should be planned ahead as Camden Council would need to agree to, and carry out, these works. The tree protection will be determined between the consultant, council, and contractor.

6.5.2 T3 and T4 field maple

These two early mature trees are growing in a wide stretch of pavement on the western side of Castlewood House, fronting Earnshaw Street. They provide an attractive focal point and are the only trees in the immediate vicinity. T3 is a very good example of its species and has been classified as an A class (high value) under BS 5837:2012. It is 7m high with a crown spread of 7m. T4 is also an important tree, but with a very slightly lower vitality than T3.

Photo 5 of T3 and T5 looking north-west

Photo 6 of T3 looking south. The wall enclosing the sunken courtyard will be acting as a root barrier.

Arboricultural impact assessment: The root protection areas of the trees do not extend up to the wall, therefore the demolition of the wall, or any changes of level within the courtyard (if required) do not require an arboricultural method statement.

The area to the east of the trees will become public realm thus increasing the role of the trees in the landscape. The trees are managed by Camden Council. The cycle stands and hard surfacing will be removed with care in accordance with an arboricultural method statement (drafted at appendix six). The trunks will be triple wrapped in hessian during the external works phase. The works will be supervised to ensure that the root function and integrity is not affected.

6.5.3 T5 Grey alder

This tree is growing in the sunken parking courtyard on the southern side of Castlewood House, accessed by a sloping drive. It is the largest tree of the survey (at 16.5m tall with a crown spread of 9.5m). The crown has fewer leaves than typical of the species, and the leaves that are present are slightly smaller than expected and some branches have died. There are a few bleeding exudations on the trunk at the lower level. All these factors indicate that the tree is in decline and unlikely to have a safe useful life expectancy beyond ten years. The roots are lifting the tree grille and causing lifting of the paving blocks due to the upward force of growing roots.

Photo 7 looking north-east

Photo 8 looking north

Photo 9 looking south

Photo 10 of the trunk showing gummy exudations

Photo 11 of the trunk being deformed by the grille.

Arboricultural impact assessment: The tree will need to be removed to facilitate development. Whilst this is the largest tree, it is in decline and development provides an opportunity for new planting. Large canopy trees are important as they provide greater ecological, environmental and landscape benefits, therefore I recommend that this tree is replaced with two large canopy trees which is a matter for the landscape architect.

6.5.4 T6 Italian alder, yew hedges and mixed shrubs

This tree is growing within a sunken courtyard on the western side of Castlewood House used by office staff. It is 7m high with a crown spread of 4m. It is in good health, but can be replaced by a similar sized tree as part of the landscaping scheme. The hedges (H7 and H8) are 0.5m high and managed by regular clipping to edge borders. The shrubs are an untidy, disparate group of low value.

Arboricultural impact assessment: The tree, hedges and shrubs will be removed as part of the proposal. I do not consider that this should be a constraint on development as the public realm will provide greater benefits.

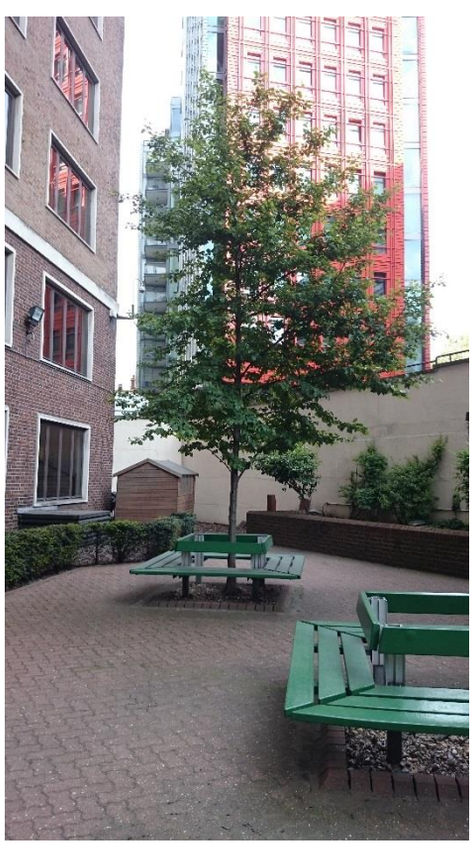

Photo 12 of T6 looking south

7. Conclusions:

7.1 The two on site trees, T5 and T6, should not be a constraint on development. This is because T5 is in late maturity and in decline and T6 is young and easily replaceable. There is an opportunity to plant new trees and increase the tree cover of this part of Earnshaw Street which currently has a low tree population. Where space allows, large canopy trees should be provided. There is no arboricultural impact on trees from the works on Medius house.

7. Recommendations:

8.1. That a copy of the report and tree protection plan is kept on site at all times, is part of the site induction, and is sent to the contractor.

8.2. That the arboricultural method statements are developed further and are observed by all site personnel and supervised at key stages by the project arboricultural consultant. Short supervision reports are to be written after each inspection as a record of compliance and audit trail to the Local Authority.

8.3. That the foundation design takes into account trees to be retained, trees to be removed and trees to be planted.

8.4. That the line of the underground services should be ideally located outside of Root Protection Areas of trees to be retained. However, as a precaution the final service plan should be assessed by an arboriculturalist. If it is unavoidable that services are to be located in RPAs, then an arboricultural method statement must be produced.

8.5. That the landscaping scheme includes a mix of native trees from a cross section of species to ensure biosecurity against host specific pests and diseases.

8.6. That no tree works take place until consent is granted.

8.7. That the two trees T3 and T4 have their trunks triple wrapped in hessian during the external works phase only. This will need to be agreed with Camden Council.

8.8. That the tree protection for the two street trees, T1 and T2, is discussed with the contractor, Camden Council and the arboricultural consultant at the site planning (construction layout and logistics) stage, but the principle of protecting the trees is incorporated in the tender package for the contractor.

8.9. That the method statement for changing the surfaces and removing the cycle stands around T3 and T4 is carried out in accordance with a method statement approved by the landscape architect, Camden Council street trees, the contractor and arboricultural consultant, and that this is carried out under arboricultural supervision (Camden Council, or arboricultural consultant).

8.10. That the damaged branch to T1 is inspected by Camden Council for their consideration.

Sharon Hosegood FICFor FArborA BSc (Hons) Tech. Cert. (Arbor A)

Director
Sharon Hosegood Associates Ltd

Appendix 1

Tree survey sheets

Castlewood, New Oxford St W1A

27.05.16

Tree/Group Number	No. of Trees	Species	Height (m)	Stem diameter	No. of Stems	Spread N (m)	Spread NE	Spread E (m)	Spread SE	Spread S (m)	Spread SW	Spread W (m)	Spread NW	Crown Cleanrance	Life stage	Condition	Recommendations	RPA (m^2)	RPR (m)	Life	BS Category
Tree T1	1	Red Norway Maple Acer platanoides 'Deborah'	10.5	23	1	4.0		4.1		3.5		4.0		6.0	Early Mature	Structural condition Good. Physiological condition Good. Arboricultural work - Historic. Decay / structural defect in crown limb / limbs - Major. Decay / structural defect in crown limb / limbs - Localised. Pruning wounds - Historic. Physical damage / vandalism. This tree is growing in a hard surface tree pit close to the bus stop. The main branch on the road side has been hit by a high vehicle resulting in half the branch being gauged out. As this branch supports long slender branches above, I recommended the branches are reduced to limit the loading. The tree provides softening and is one of only two trees in this part of New Oxford Street. Heavy infestation of Pulvinaria regalis present (a sap sucking insect of low significance).	Reduce faulted limb / limbs by -20%..over the road	23.9	**2.8**	**20-40**	B1/B2
Tree T2	1	Red Norway Maple Acer platanoides 'Deborah'	10.5	20	1	4.0		2.5		3.5		4.5		6.0	Early Mature	Structural condition Good. Physiological condition Good. Arboricultural work - Historic. Decay / structural defect in crown limb / limbs - Major. Decay / structural defect in crown limb / limbs - Localised. Form - Good crown structure. No significant faults observed. This tree is growing in a hard surface tree pit close to the bus stop. The tree provides softening and is one of only two trees in this part of New Oxford Street	No works recommended at time of survey.	18.1	**2.4**	**20-40**	B1/B2

Stem	grey	estimated value
Stem	AVE	average stem diameter for multi-stemmed trees

The survey information in this schedule has been gathered following a BS5837 survey for planning purposes. Where hazardous trees have been noted recommendations for works may have been made but this survey cannot be relied upon as a full health and safety assessment of the trees.

Tree/Group Number	No. of Trees	Species	Height (m)	Stem diameter	No. of Stems	Spread N (m)	Spread NE	Spread E (m)	Spread SE	Spread S (m)	Spread SW	Spread W (m)	Spread NW	Crown Cleanrance	Life stage	Condition	Recommendations	RPA (m^2)	RPR (m)	Life	BS Category
Tree T3	1	Field Maple *Acer campestre*	7.0	19	1	3.6		3.5		3.5		3.5		2.5	Early Mature	Structural condition Good. Physiological condition Good. Dense crown. Deadwood - Minor. Form - Good crown structure. No significant faults observed. This tree is one of two trees growing in the pavement. It is a very good example of its cultivar.	No works recommended at time of survey.	16.3	**2.3**	**20-40**	A1/A2
Tree T4	1	Field Maple *Acer campestre*	8.0	16	1	3.6		3.5		3.5		3.5		2.5	Early Mature	Structural condition Good. Physiological condition Good. Dense crown. Deadwood - Minor. Form - Good crown structure. No significant faults observed. This tree is one of two trees growing in the pavement. It is a very good example of its cultivar. It is slightly sparser than the other field maple.	No works recommended at time of survey.	11.6	**1.9**	**20-40**	B1/B2
Tree T5	1	Grey alder *Alnus incana*	16.5	40	1	4.5		5.0		5.0		4.5		7.0	Late Mature	Structural condition Fair. Physiological condition Fair. Arboricultural work - Historic. Bark exudation. Bark wound - Mechanical. Die-back - Throughout crown. Decline - Suspected. Deadwood - Major. Form - Large sail area / crown extent. Physiological stress. This tree is growing in a metal grille which is lifting due to root pressure. The roots are lifting some of the paving blocks. Old impact wound on northern aspect at 5m. Historically crown lifted.	Deadwood - Remove..	72.4	**4.8**	**10**	C2
Tree T6	1	Italian Alder *Alnus cordata.*	7.0	11	1	2.0		2.5		2.0		2.0		2.0	Semi Mature	Structural condition Good. Physiological condition Good. Form - Good crown structure. No significant faults observed. This tree is growing in a courtyard surrounded by a bench.	No works recommended at time of survey.	5.5	**1.3**	**20-40**	B1

Stem	grey	estimated value
Stem	AVE	average stem diameter for multi-stemmed trees

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Tree/Group Number	No. of Trees Species	Height (m)	Stem diameter	No. of Stems	Spread N (m)	Spread NE	Spread E (m)	Spread SE	Spread S (m)	Spread SW	Spread W (m)	Spread NW	Crown Cleanrance	Life stage	Condition	Recommendations	RPA (m^2)	RPR (m)	Life	BS Category
Hedge H7	Yew *Taxus bacatta*	0.5	7	1	0.5		0.5		0.5		0.5		0.0	Semi Mature	Structural condition Fair. Physiological condition Fair. Hedgerow - Maintained. Low rectangular hedge. About 10% of the plants are in a poor condition.	*Continue with current management regime*	2.2	**0.8**	**10-20**	C2
Hedge H8	1 Yew *Taxus baccata*	0.5	7	1	0.5		0.5		0.5		0.5		0.0	Semi Mature	Structural condition Fair. Physiological condition Fair. Hedgerow - Maintained. Low rectangular hedge. About 10% of the plants are in a poor condition.	*Continue with current management regime*	2.2	**0.8**	**10-20**	C2

Stem	grey	estimated value
Stem	AVE	average stem diameter for multi-stemmed trees

The survey information in this schedule has been gathered following a BS5837 survey for planning purposes. Where hazardous trees have been noted recommendations for works may have been made but this survey cannot be relied upon as a full health and safety assessment of the trees.

Table 1 of BS5837 (2012) **Cascade chart for tree quality assessment**

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	* Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) * Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline * Trees infected with pathogens of significance to health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7*			RED
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Tree that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricutural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	GREEN
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	BLUE
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	GREY

Appendix 2

Tree survey plan SHA 188TSP

T1 - A Category A - high quality and value
T1 - B Category B - moderate quality and value
T1 - C Category C - low quality and value
T1 - U Category U - unsuitable for retention

Crown spread

RPA - root protection area as defined by Table 2 BS 5837:2012

Low yew hedges 0.5m high

Shrubs

Notes

1. Contractors to check all dimensions on site
2. Discrepancies must be reported to the Arboricultural Consultant before proceeding
3. The original of this drawing was produced in colour, a monochrome copy should not be relied upon.
4. It is the responsibility of the contractor to ensure necessary consents for tree works are in place
5. This drawing is copyright © Sharon Hosegood Associates Ltd

Rev :	Description :	Authorized :

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Site Address
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Drawing Title	Orientation	Drawn	Authorized
Tree Survey Plan		ND-H	SMH
Date	**Drawing Number**	**Scale**	**Drawing Status**
01.06.16	SHA 188 TSP	1:250@A2	For Issue
Revision			
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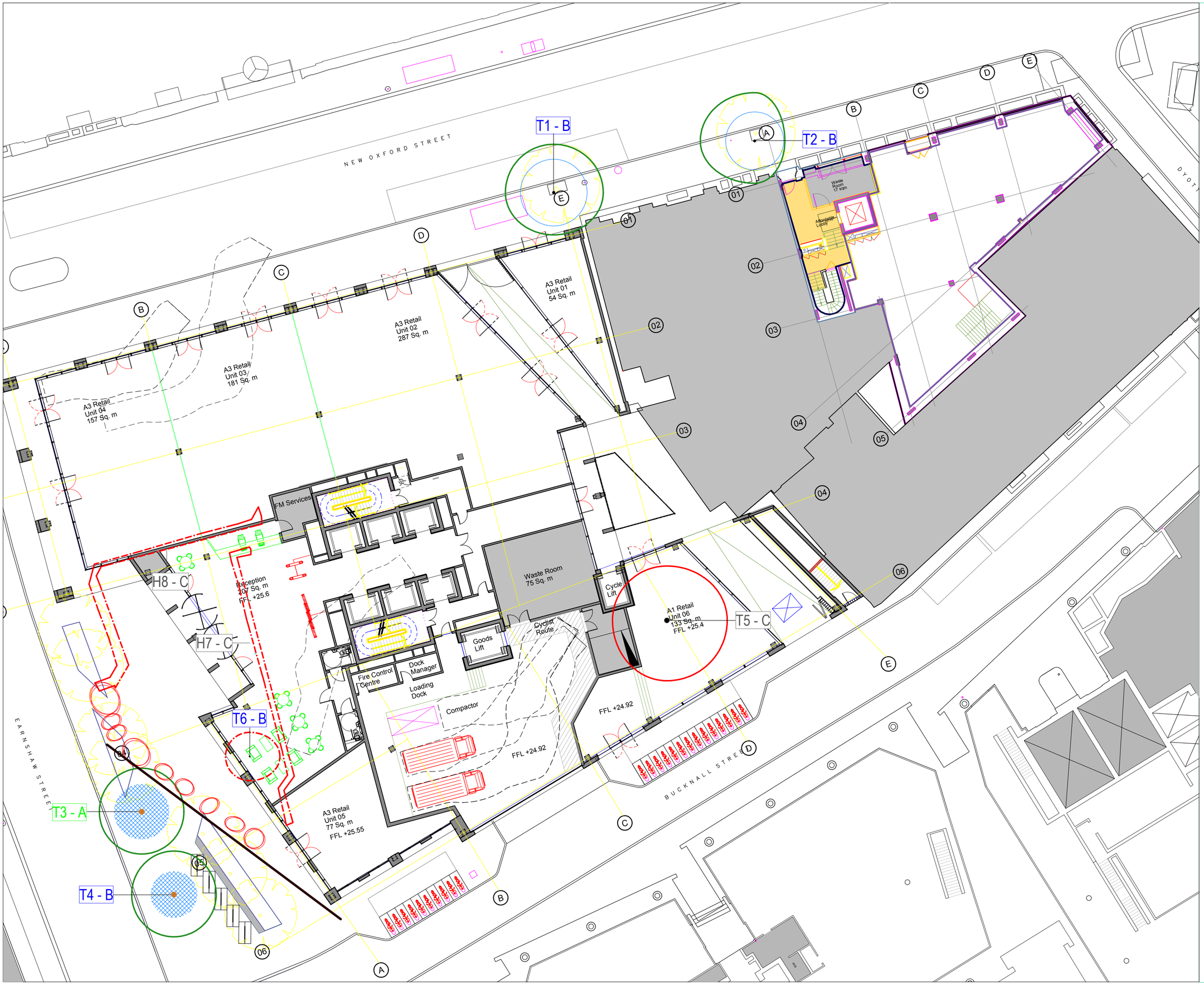
Appendix 3

Tree protection plan SHA 188 TPP Rev A



T1 - A — Category A - high quality and value

T1 - B — Category B - moderate quality and value

T1 - C — Category C - low quality and value

T1 - U — Category U - unsuitable for retention

Crown spread of trees to be retained

RPA - root protection area as defined by Table 2 BS 5837:2012

Low hedges to be removed

Trees to be removed

Shrubs to be removed

Tree protection fencing comprising site hoarding as determined by the conractor

Method statement for change in surfaces

Area for tree protection. This is to be determined by the arboricultural consultant, working with the main contractor and Camden Council. The type of tree protection will depend on site hoarding and scaffolding.

Triple layer of hessian wrapped around the trunks of T3 and T4 and tied with string during the external works phase near the trees, and removed immediately after.

Notes

1. Contractors to check all dimensions on site
2. Discrepancies must be reported to the Arboricultural Consultant before proceeding
3. The original of this drawing was produced in colour, a monochrome copy should not be relied upon.
4. It is the responsibility of the contractor to ensure necessary consents for tree works are in place
5. This drawing is copyright © Sharon Hosegood Associates Ltd

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Site Address

Castlewood W1A

Drawing Title	Orientation	Drawn	Authorized
Tree Protection Plan		ND-H	SMH
Date	**Drawing Number**	**Scale**	**Drawing Status**
19.07.16	SHA 188 TPP Rev A	1:200@A2	For Issue

Revision A

Appendix 4

Tree surgery schedule

Tree surgery schedule

All works to be carried out in accordance with BS 3998:2010 'Tree works – Recommendations'. All pruning cuts to be made at suitable growing points in the line with the principles of 'Natural target pruning'. Works to T1 – T4 must be carried out by Camden Council tree contractors.

Tree no.	Species	Proposed works	Reason
T1	Norway maple	Inspection of the branch overhanging the road – works specification is a matter for Camden Council	For safety reasons
T2	Norway maple	No works	n/a
T3	Field maple	Light trimming to clear the boundary (up to 0.5m)	Facilitation access pruning for site hoarding
T4	Field maple	Light trimming to clear the boundary (up to 0.5m)	Facilitation access pruning for site hoarding
T5	Grey alder	Fell to ground level and grind stump	To facilitate development
T6	Italian alder	Fell to ground level and remove stump	To facilitate development
	Low yew hedges and shrubs	Remove	To facilitate development

A check with the project ecologist must be made before carrying out tree works

Appendix 5

Tree protection specification

The tree protection for T1 and T2 will be determined by the contractor, council and arboricultural consultant. The principle of protecting the tree must be made clear in the tender package for the contractor

The trees T3 and T4 will be protected by the site hoarding during demolition and construction

During the external works phase, the trunks of T3 and T4 will be triple wrapped in hessian and tied in string

Appendix 6

Draft arboricultural method statement

Tree works:

Recommendations for tree works can be found in the tree surgery schedule in Appendix 5. All works shall be in accordance with BS 3998:2010 '*Tree work. Recommendations*'. The use of a competent tree surgery contractor is necessary to comply with this. The main contractor and tree surgery contractor must ensure that any necessary consents have been received from the local authority and that no protected species are harmed whilst carrying out site clearance or tree surgery works. Within root protection areas, stumps, shrubs and other vegetation must be removed by hand or using stump grinding machinery to minimize root damage of retained trees. Where poisoning of stumps is specified, this must be carried out by competent operatives. Only chemicals approved for this purpose and used in accordance with the manufacturer's instructions will be used. Works to T1 – T4 must be carried out by Camden Council tree contractors.

Fires: Fires on site should be avoided if possible. If unavoidable, they should be situated far enough so that there is no risk of damage to the trees, taking into consideration the wind direction.

Site and fuel storage, cement mixing and washing points: All site storage areas, cement mixing and washing points for equipment and vehicles and fuel storage areas should be outside root protection areas unless otherwise agreed with the Local Planning Authority. No discharge of potential contaminants should occur within 10m of a retained tree stem or where there is a risk of run off into Root Protection Areas.

Temporary buildings for site use: Site cabins, trailers and other temporary buildings can sometimes be used in root protection area if consent is agreed by the local planning authority. This can be very useful if there is a robust existing hard surfacing in place. The method for installing the buildings, and assessment of whether ground protection is needed is to be agreed with the Arboriculturist and specified prior to installation.

Protection of tree canopies: Piling rigs and cranes are often used close to trees. Work must be carefully planned so that there is sufficient room to avoid hitting the canopy during transportation or operation. Arboricultural supervision may be required, however it is the responsibility of the contractor to assess and plan the work. Any access facilitation pruning required is detailed in the tree surgery schedule.

New landscaping: Within the root protection areas of trees to be retained, the preparation of soil for planting and turfing will be carried out by hand. Cultivation will be kept to a minimum and new topsoil must not exceed 100mm in depth within 1m of the stem. Top soil and other materials will be transported by wheelbarrow on running boards when working near trees.

Demolition:

The buildings will be pulled back *'top down, pull back'* away from the trees. If the works generate a lot of dust, and no rain is forecast for 48 hours, the trees will be hosed down. This is to prevent the build up of dust impeding photosynthesis.

Removal of hard surfacing and cycle stands within the root protection areas:

The hard surfacing will remain in place during works and lifted at the external works stage. The following method statement will be observed:

Lift the paving slabs in a safe manner. There may be a sheath of fine feeder roots and main structural roots beneath the concrete. Great care must be taken to avoid scuffing and damaging these roots. Once removed, the exposed soil must be immediate covered with a suitable backfill medium such as good quality top soil.

Any roots found with a diameter greater than 25mm growing around the base of the cycle stands will be retained and carefully wrapped in damp hessian. The holes are to be immediately backfilled with a suitable backfill medium to the landscape architects specification.

The works should not take place in frosty or hot sunny dry weather as this can harm fine roots.

If roots are accidentally damaged, then the arboricultural consultant must be contacted immediately

Installation of new hard surfaces near T3 and T4:

The area to which this applies is shown by blue cross hatched areas on the tree protection plan SHA 188TPP. The purpose of the method statement is to ensure that tree roots are retained and that they can function. Therefore digging down, compacting the soil and creating an impermeable surface will be prevented. The details of the method will be worked up with the contractor and landscape architect and the arboricultural consultant.

Arboricultural site supervision

An initial site meeting:

Before works have started, but after the tree surgery and tree protection measures are in place. At this meeting the site manager, contractor, arboricultural consultant should discuss methodology and the tree protection measures will be examined. A 'What *you need to know about working near trees at Castlewood, New Oxford Street, London W1A'* sheet will be issued which includes contact details.

After each site supervision, a short report will be sent to the contractor, client and local authority as a record of compliance.

Appendix 7

Tree related legislation and policies affecting the site

Tree preservation orders

The Town and Country Planning (Tree Preservation) (England) Regulations 2012. A check with Camden Council on 3 June 2016 confirmed that the trees are not protected by a Tree Preservation Order.

Conservation Area

Castlewood House sits between two conservation areas: the Bloomsbury Conservation Area and the Denmark Street Conservation Area. The only tree which falls within the conservation area is one of the street trees, T2. The four street trees (T1, T2, T3 and T4) are managed by Camden Council and any works to these trees must be carried out by their approved contractors.

The trees within the ownership of the site (T5 and T6) are the responsibility of the owner. T5 has some dead wood in the crown, and this deadwood should be removed for safety reasons.

Ecological considerations

The Wildlife and Countryside Act 1981, as amended, The Conservation of Habitats and Species Regulations 2010 and the Countryside and Rights of Way Act 2000, provide statutory protection to species of flora and fauna including birds, bats and other species that are associated with trees.

Occupiers Liability Act 1957 and 1984

The Occupiers Liability Act (1957 and 1984) places a duty of care to ensure that no reasonably foreseeable harm takes place due to tree defects. Therefore this report includes recommendations within the tree tables for work required for safety reasons. 'Common sense risk management of tree (National Tree Safety Group 2012)' states that *'The owner of the land on which a tree stands, together with any party who has control over the tree's management, owes a duty of care at Common Law to all people who might be injured by the tree. The duty of care is to take reasonable care to avoid acts or omissions that cause a reasonably foreseeable risk of injury to persons or property'*.

Appendix 8

Statement of methodology and reference material

Statement of methodology

Review of architects plans

Site visit carried out on 26 May 2016 by Sharon Hosegood

Tree survey using Visual Tree Assessment carried out in accordance with BS 5837:2012 '*Trees in relation to design, demolition and construction – Recommendations*' (BS). All investigations were from ground level only and binoculars were used when necessary. All trees with a trunk diameter of 75mm or above were surveyed. Obvious hedges and shrub masses were identified where appropriate. Information collected is in accordance with recommendations in subsection 4.4.2.5 of BS and include species, height, diameter, branch spread, crown clearance, age class, physiological condition, structural condition and remaining contribution. Each tree was then allocated one of four categories (U, A, B or C). Full details of the trees are found at appendix one, the plans at appendix two and photographs within the text.

Discussion with design team January 2017 regarding the retention of T3 and T4

Production of Revision A

Received material

33246T-01A topographical survey

160425_GLA pre-app meeting_lowres

160706 Draft Planning Deliverables Schedule - Castlewood House

CBRE site description and proposed development text from the EIA Screening Request

CBRE-Castlewood-RFP-Arboriculture

Complete design package Robin Partington and Partners, 20 December 2016

BSI. BS 3998:2010 *Tree work-Recommendations.*

BSI. BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*

R.G.Strouts and T.G.Winter 'Diagnosis of ill-health in trees' TSO 1994

Camden Council website

C. Mattheck 'The body language of trees' 2015

Appendix 9

Caveats

Specific report caveats

1. At the time of writing this report, the protected tree status is correct. However, this can change. Therefore I advise that a further check is made with Camden Council before any works to trees take place.
2. No internal diagnostic equipment was used other than a sounding mallet and probe and all inspections where from ground level only, with the aid of binoculars where necessary.
3. The survey is concerned solely with arboricultural issues.
4. Any changes in ground level, or excavations near to tree roots not discussed within this report may change the stability and condition of the trees and a further examination would be required.
5. As trees are a dynamic living organism this report is only valid for a period of 12 months, in respect to their health and condition.
6. Only the trees listed in this report have been examined.
7. The tree information is from the time of the survey. Some pests, diseases and fungi only appear seasonally, therefore it is possible not all issues that may affect the health of the trees could be observed.

Appendix 10

My experience and qualifications

Sharon Hosegood
ASSOCIATES

Sharon Hosegood

FICFor FArbor A BSc (Hons) Tech Cert Arbor A

Profile

Institute of Chartered Foresters
Registered Consultant

Sharon is an Expert Witness, chartered arboriculturist and Director of Sharon Hosegood Associates Ltd. Sharon had eleven years experience as a local government tree and landscape officer before joining DF Clark Contractors as a tree consultant in 2005. In 2007 she formed an environmental practice in Essex with the owner. As managing director, she built up the ecological and arboricultural consultancy to a team of 20. She is a regular presenter and an occasional trainer for Trevor Roberts Associates. She appeared on BBC1 in July 2015 and September 2015, in 'Britain Beneath Your Feet' demonstrating tree radar at the Burghley Country Park, Lincs, with Dallas Campbell, and latterly in the consumer programme 'Rip Off Britain', again with tree radar equipment.

Specialities:	Trees in relation to development, including appeals and planning hearings
	Tree root investigations, including TreeRadar
	Tree hazard evaluation
	Tree preservation orders
	Trees and well-being with community engagement
Professional bodies:	Fellow of the Institute of Chartered Foresters (ICF) Councillor for the ICF East England ICF regional committee Assessor for the ICF examination board
	Fellow of the Arboricultural Association
Qualifications:	Cardiff University Law School Bond Solon Civil Expert Certificate Arboricultural Associations Technicians Certificate BSc (Hons) Geography and Landscape Studies
Awards:	Top student award for the Technician's certificate in 2005
	The Broomfield Hospital Woodland Management project she has managed since 2009 has won the following awards:
	The Essex Biodiversity Awards (nomination) The Excellent Community Engagement Award (NHS Forest) Green Flag and Green Apple Award Highly commended for the Health Sector Journal Award 2013

Appendix 11

Glossary

Access facilitation pruning	**One-off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary for operations on site.**
Anchorage	In trees, the holding of the root system within the soil, involving the flow of forces from the stem through the branches of the roots system to the cohesive root/soil interface.
Arboriculture	Formerly all aspects of the culture of trees, especially for forestry. Latterly, the art and science of cultivating and managing trees as groups and individuals, primarily for amenity and other non-forestry purpose.
Arboricultural method statement	Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.
Arboriculturist	Person who has, through relevant education, training and experience in the field of trees in relation to construction.
Architecture	In a tree, a term describing the pattern of branching of the crown or root system.
Backfill medium	Material used for refilling an excavated planting hole.
Bark	A term usually applied to all the tissues of a woody plant lying outside the vascular cambium, thus including the phloem, cortex and periderm.
Branch	A limb extending from the main stem or parent branch of a tree.
Branch bark ridge	The raised arc of bark tissues that forms the acute angle between a branch and its parent stem
Branch collar	The swelling or roughened bark often found at the base of a branch which should be left intact if the branch is to be pruned off.
Canopy	The topmost layer of twigs and foliage in a tree.
Construction exclusion zone	An area based on the root protection area from which access is prohibited for the duration of the project.
Crown	In arboriculture, the main foliage-bearing portion of a tree.
Crown lifting	The removal of shortening of the branches that form the lower part of the crown of a tree.
Crown reduction	Pruning in order to reduce the size of the crown of a tree.
Crown thinning	Pruning inside the crown of a tree in order to reduce its density.
Defect	In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment.
Direct damage	Direct physical damage to a structure of surface from pressure exerted by the trunk or growing roots.
Hazard	A thing, a process or a potential event that has the potential to cause harm.

Landscape character	A distinct, recognisably and consistent pattern of elements in the landscape that make one landscape different from another, rather than better or worse.
Mulch	Material laid down over the rooting area of a tree or other plant to help conserve moisture, suppress weeds and encourage a beneficial microflora.
Root protection area	A layout tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. BS 5837:2012 *'Trees in relation to design, demolition and construction – Recommendations'*.
SULE	Safe useful life expectancy of a tree (Barrell)
Target pruning	The pruning of a twig or branch so that tissues recognisably belonging to the parent stem or branch are retained and not damaged.
Targets	In tree hazard assessment, persons or property or other things of value which might be harmed by mechanical failure of the tree or by objects falling from it.
Tree Preservation Order	In Great Britain, an order made by a local authority, whereby the authority's consent is generally required for the cutting down, topping or lopping of specified trees.
Tree protection plan	Scale drawing, informed by descriptive text where necessary, based upon the finalized proposal, showing trees for retention and illustrating the tree and landscape protection measures.
Utility	An undertaker by statute that has a legal right to provide customer services (e.g. communication, electricity, gas and water).
Vigour	In tree assessment, an overall measure of the rate of shoot production, shoot extension or diameter growth.
Vitality	In tree assessment, an overall appraisal of physiological and biomechanical processes, in which high vitality equates with near-optimal function, in which high vitality equates with healthy function.
Visual Tree Assessment (VTA)	In addition to the literal meaning, a system expounded by Matteck and Breloer (1995) to aid the diagnosis of potential defects through visual signs and the application of mechanical criteria.

Sharon Hosegood
ASSOCIATES

ARBORICULTURAL IMPACT ASSESSMENT REPORT
BS 5837:2012 'Trees in relation to design, demolition and construction. Recommendations'

SITE

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London

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CLIENT

Royal London Mutual Insurance Society

SHARON HOSEGOOD
FICFor FArborA BSc (Hons) Tech Cert (ArborA)

DATE: 27.07.16
OUR REF: SHA 188 Rev A
7.01.17

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