SIMON JONES ASSOCIATES Ltd.

ARBORICULTURAL PLANNING CONSULTANTS

Arboricultural Consultancy - Tree Surveys
Planning & Development · Hazard & Safety
Tree & Woodland Management - Expert Witnesses

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ARBORICULTURAL METHOD STATEMENT

For Protection of Trees
at
20 Guilford Street, London, WC1

May 2015

SJA ams 13012-02

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1. Statement of purpose.

1.1. The purpose of this method statement is to detail what actions need to be taken to prevent the '**Erection of new hospital research building following the demolition of an existing computer facility**' causing any unacceptable damage to trees. The development comprises the construction of an eight storey building (six levels above ground and two below) at No. 20 Guilford Road, London. All of the trees to be protected are growing on land adjacent to the site.

1.2. This method statement has been drawn up to comply with both Condition nos. 7 and 8 of the planning permission (ref: 2014/6068/P) granted by the London Borough of Camden, which state:

- "**7. Prior to the commencement of any works on site, details demonstrating how trees to be retained shall be protected during construction work shall be submitted to and approved by the Council in writing. Such details shall follow guidelines and standards set out in BS5837:2012 "Trees in Relation to Construction". All trees on the site, or parts of trees growing from adjoining sites, unless shown on the permitted drawings as being removed, shall be retained and protected from damage in accordance with the approved protection details**; and

- **8. Prior to the commencement of any works on site, a detailed Arboricultural Management Plan to include an auditable system of on-site monitoring of trees on and adjacent to the site, shall be submitted to and approved in writing by the local planning authority**."

1.3. The key words and phrases used in this statement are defined in ***Table 1*** below.

Arboricultural consultant	Arboricultural expert instructed by the developer to oversee the retention and protection of trees adjacent to the development site.
Arboricultural monitoring	Regular inspections of retained trees and tree protection measures by the arboricultural consultant, in order to monitor their health, condition and effectiveness.
Arboricultural supervision	Pre-arranged attendance on site of appointed arboricultural consultant for the duration of specific construction activities that could otherwise result in unacceptable damage to retained trees. Whilst on site the consultant will control, supervise and where appropriate assist in the undertaking of these activities.
Protective fencing	Temporary fencing, erected for the duration of demolition and construction activities; designed to prevent access and disturbance to the trunks and root protection areas of trees.
Pruning	The removal of living or dead parts of a tree, especially branches, to reduce size, to maintain shape, health, safety, or to regulate growth.
Root Protection Area ('RPA')	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.
Construction Exclusion Zone ('CEZ')	Area based on the root protection area (RPA), normally surrounded with protective fencing, from which access is prohibited during development works.

Table 1: **Key Words & Phrases**

1.4. This method statement has been drawn up to comply with the recommendations of British Standard BS 5837: 2012, '*Trees in relation to design, demolition and construction – Recommendations*' BS 5837). Details of the trees can

be found in the tree survey schedule at **Appendix 1**. Their locations are shown on the tree protection plan at **Appendix 3**. This plan is based on the proposed site layout plan by Stanton Williams, drawing no. 464_00_202.

1.5. This statement is designed to reflect the principles of the proposed layout only in so far as these relate to the protection of trees to be retained, and should **not** be read as a definitive engineering or construction method statement for this development[1].

2. Planning and communication.

2.1. Unless otherwise agreed with the Local Planning Authority (LPA), the following actions are to be taken, in the order specified in the Sequence of Works at ***Table 2***.

2.2. The developer will appoint an arboricultural consultant to oversee all aspects of tree care and protection for the duration of construction works.

2.3. Prior to the commencement of works, the project manager will send copies of any construction method statements that might have implications for existing trees to the arboricultural consultant for his comments. The arboricultural consultant will liaise with the project manager to ensure that there are no conflicts between the construction method statements and this arboricultural method statement.

2.4. Prior to the start of any site clearance, demolition or construction works the developer will convene a pre-commencement site meeting. This shall be attended by the developers' contract manager or site manager, the demolition contractor, the fencing/boarding contractor, the groundwork contractor(s) and the arboricultural consultant. The LPA tree officer will be invited to attend. The tree felling/surgery contractor should also attend. At that meeting contact numbers will be exchanged, and the methods of tree protection outlined in this statement shall be fully discussed, so that all aspects of their implementation and sequencing are made clear to all parties. Any clarifications or modifications to this statement arising from the meeting shall be circulated to all parties in writing.

2.5. The developer will immediately inform the arboricultural consultant if at any time during site clearance, demolition or construction the site manager or agent is replaced or transferred. The arboricultural consultant will convene a site meeting with the incoming/replacement site manager, to be held within five working days, to explain all outstanding tree protection measures detailed in this method statement.

2.6. A copy of this method statement shall be supplied to all site personnel who have control over works of any nature within the Root Protection Areas (RPAs) of trees to be retained, or within the footprints of their canopies. The contractor will provide

[1] Reference should be made to the architect or structural engineer over any matters of construction detail, specification, engineering performance standards or regulatory requirements, relating to structures, surfaces or underground services to be constructed. As arboricultural consultants, Simon Jones Associates Ltd. can accept no liability for any matters relating to the structural integrity or engineering performance of structures, surfaces or underground services described, proposed or eventually constructed. The responsibility for satisfying any Health & Safety requirements relating to any operations described in this method statement remains with those commissioning or undertaking the operations concerned.

adequate instruction on its implementation for all relevant staff. This instruction will be carried out by or to the approval of the arboricultural consultant.

Order	Works	Details at Section:	Arb. supervision required:
1	Pre-commencement site meeting	2	Yes
2	Tree removal and tree pruning works	3	-
3	Erection of protective hoarding	4	-
4	Supervision of replacement basement adjacent to Plane trees nos. 1 & 2 (only if existing retaining wall is to be replaced)	5	Yes
5	Clearance of machinery/materials from site, reinstatement and landscaping.	6	-
6	Removal of protective fencing.	4	-

Table 2: **Sequence of works (relevant to protection of existing trees)**

3. Removal and pruning.

3.1. The two trees to be removed (nos. 4 & 7) shall be felled and disposed of.

3.2. The stumps of the above trees are within the footprint of proposed structures and will therefore be removed. As the stumps of these trees are not within the RPAs of retained trees they can be grubbed out without harming any retained trees.

3.3. Trees to be retained shall be pruned as specified on the TPP. A full specification for tree felling and surgery works is at **Appendix 2**.

3.4. All tree works are to be done in accordance with British Standard BS 3998: 2010, *Tree work - Recommendations*. Climbing irons or spikes are not to be used whilst pruning trees; they may only be used for the sectional removal of trees.

4. Protective fencing.

4.1. No site clearance, demolition or construction shall commence on site, and no demolition or construction vehicles or plant will enter the site until the off-site trees have been safeguarded by the erection of protective site hoarding.

4.2. The site hoarding shall be at least 2.1m in height, comprising a timber post and rail framework attached to either a minimum of 20mm exterior grade ply or other robust man-made boards, and posts secured by at least 450mm into the ground. In this way, Construction Exclusion Zones (CEZs) will be created ensuring all construction activities will take place on-site away from the trees.

4.3. In addition, oil, bitumen, diesel, and cement shall not be stored, mixed or discharged onto the ground within 10m of the trunks of any trees. Areas for the storage or mixing of such materials shall be agreed at the pre-commencement meeting.

4.4. Once the site hoarding has been erected, the arboricultural consultant will visit the site and inspect it. He will record the position of the hoarding and the condition of

the retained trees. If it complies with this statement, the arboricultural consultant will 'sign off' the tree protection hoarding to the contractor, and copy this (in writing) to the developer. (See also 'Supervision and Monitoring' below.)

4.5. The site hoarding will not be moved or re-located without the prior approval of the arboricultural consultant. It will only be removed once all construction works are completed: the arboricultural consultant will be informed in advance of when it is intended to remove the fencing.

5. Demolition and site preparation.

5.1. The existing building which is to be demolished abuts the RPAs of two trees to be retained. These are listed at ***Table 3*** below.

Tree no.	Species	Description
1	London plane	Replacement of adjacent basement
2	London plane	Replacement of adjacent basement

Table 3: **Demolition works that abut or are within RPAs**

5.2. The base and foundations of the existing building to be demolished that abut the RPAs of these two London planes shall be either be left in place, or shall be excavated and removed with care, under the control and supervision of the arboricultural consultant.

5.3. Demolition will be undertaken inwards from within the footprint of the existing building ("top down, pull back").

5.4. The low level retaining wall and below ground root retaining structure adjacent to the off-site Tree of heaven no. 5 shall either be left in place, or shall be excavated and removed with care, under the direct control and supervision of the arboricultural consultant.

6. Fencing, landscaping and reinstatement.

6.1. Care will be taken to ensure that fencing, landscaping and reinstatement do not cause any damage to the existing trees. Prior to the commencement of any landscaping works the developer will convene a site meeting to be attended by the site manager or agent, the landscape contractor, the fencing contractor and the arboricultural consultant. The methods of tree protection outlined in this section of the arboricultural method statement shall be fully discussed, so that all aspects of their implementation and sequencing are made clear to all parties. Any clarifications or modifications to this statement shall be recorded and circulated to all parties in writing.

6.2. Within RPAs the following points shall be observed:

- Ground levels will not be changed.

- Only lightweight plant or vehicles shall enter the RPAs.
- No fuels or chemicals shall be brought into or stored within these areas.
- Digging (for fence posts etc.) shall be done by hand. Any roots of 25mm diameter and above that are encountered shall not be cut: if such sized roots are found the position of the proposed post will be re-located. Any smaller roots shall be cut cleanly. All roots exposed should be back-filled with sharp sand on the same day they are uncovered.
- No parts of any fencing shall be nailed or otherwise attached to any parts of the retained trees.
- Unwanted vegetation shall be removed manually or by using chemicals that cannot damage the roots of the trees.
- No irrigation or drainage pipes shall be installed within the RPAs.

7. Supervision and monitoring.

7.1. Once the site hoarding has been erected, the arboricultural consultant will visit the site and inspect these tree protection measures. In the event that the specification or location of these items does not comply with this method statement, the arboricultural consultant will inform the fencing contractor, and adjustments will be made. Once compliance is achieved, the arboricultural consultant will 'sign off' the tree protection measures to the contractor, and copy this (in writing) to the client and to the LPA.

7.2. Throughout the construction process the arboricultural consultant will monitor the condition of the trees, and the integrity and effectiveness of the protective fencing. He will visit the site at appropriate intervals, as agreed with the LPA Tree Officer at the pre-commencement meeting, to ensure that the protection measures outlined in this document are adhered to; and will contact the site manager or agent on a weekly basis whilst ground works are being undertaken, and on a fortnightly basis thereafter, to ascertain what works are planned for the coming week and whether any of these require arboricultural input or supervision. Records of all monitoring and supervisory visits will be made, and will be forwarded to the client and copied to the LPA.

7.3. If existing structures which abut RPAs are to be removed or replaced the arboricultural consultant shall directly supervise these works.

7.4. The project or site manager will give the arboricultural consultant at least 48 hours written notice of the date of intended construction of any proposed buildings or structures adjacent to the RPAs of any of the trees, so that he/she can attend.

7.5. All drawings or revised drawings issued to the site agent or to sub-contractors, that show details of any works immediately abutting RPAs or beneath the crowns of trees are to be referred in advance to the arboricultural consultant to enable him to advise on any changes to the impact on the trees that these drawings may cause, and to be able to provide solutions to avoid or mitigate any further tree damage. All such drawings will be approved and signed off by the arboricultural consultant before being proceeded with.

7.6. The arboricultural consultant will issue variation orders to the contractors in the case of any agreed changes to this method statement, and non-compliance notices in any cases of substantial deviation from the statement. These will be recorded in his final report to the client. All variation orders or non-compliance notices shall be copied to the LPA.

Simon Jones Associates

May 2015

Appendix 1

Tree Survey Schedule

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Tree Survey Schedule

GOSH 20 Guilford Street, London WC1

January 2014

Tree Survey Schedule: Explanatory Notes

GOSH 20 Guilford Street, London WC1

This schedule is based on tree inspections undertaken by Simon Jones and Abi St.Aubyn of Simon Jones Associates Ltd., on Thursday the 17th January, of Simon Jones on Thursday the 7th of February 2013 and Abi St.Aubyn on Wednesday the 8th January 2014. Weather conditions during all of these inspections were clear, dry and bright. Deciduous trees were not in leaf during any of these inspections.

The information contained in this schedule covers only those trees that were examined, and reflects the condition of these specimens at the time of inspection. We did not have access to the trees from any adjacent properties; observations are thus confined to what was visible from within the site and from surrounding public areas.

The trees were inspected from the ground only and were not climbed, and no samples of wood, roots or fungi were taken. A full hazard or risk assessment of the trees was not undertaken, and therefore no guarantee, either expressed or implied, of their safety or stability can be given.

Trees are dynamic organisms and are subject to continual growth and change; therefore the dimensions and assessments presented in this schedule should not be relied upon in relation to any development of the site for more than twelve months from the survey date.

1. Tree no.
Given in sequential order, commencing at "1".

2. Species.
'Common names' are given, taken from MITCHELL, A. (1978) A Field Guide to the Trees of Britain and Northern Europe.

3. Height.
Estimated with the aid of a hypsometer, given in metres.

4. Trunk diameter.
Trunk diameter measured at approx. 1.5m above ground level; or where the trunk forks into separate stems between ground level and 1.5m, measured at the narrowest point beneath the fork. Given in millimetres.

5. Radial crown spread.
The linear extent of branches from the base of the trunk to the main cardinal points, rounded up to the closest halfmetre, unless shown otherwise. In the cases of small trees with reasonably symmetrical crowns, a single averaged figure is quoted.

6. Crown break.
Height above ground and direction of growth of first significant live branch.

7. Crown clearance.
Distance from adjacent ground level to lowest part of lowest branch, in metres.

8. Age class.
Young: Age less than 1/3 life expectancy
Semi-mature: 1/3 to 2/3 life expectancy
Mature: Over 2/3 life expectancy
Over-mature: Mature, and in a state of decline
Veteran: Surviving beyond the typical age range for species

9. Physiology.
Health, condition and function of the tree, in comparison to a normal specimen of its species and age.

10. Structure.
Structural condition of the tree – based on both the structure of its roots, trunk and major stems and branches, and on the presence of any structural defects or decay.
Very good: No significant physiological or structural defects, an upright and reasonably symmetrical structure; a particularly good example of its species.
Good: No significant physiological or structural defects, and an upright and reasonably symmetrical structure.
Moderate: No significant pathological defects, but a slightly impaired physiological structure; however, not to the extent that the tree is at immediate or early risk of collapse.
Indifferent: Significant physiological or pathological defects; but these are either remediable or do not put the tree at immediate or early risk of collapse.
Poor: Significant and irremediable physiological or pathological defects, such that there may be a risk of early or premature collapse.
Hazardous: Significant and irremediable physiological or pathological defects, such that there is a risk of imminent collapse.

11. Comments.
Where appropriate comments have been made relating to:
-Health and condition
-Safety, particularly close to areas of public access
-Structure and form
-Estimated life expectancy or potential
-Visibility and impact in the local landscape

12. Category.
Based on the British Standard "Trees in relation to design, demolition and construction - Recommendations", BS 5837: 2012, Table 1, adjusted to give a greater weighting to trees that contribute to the character and appearance of the local landscape, to amenity, or to biodiversity.

Category U: Trees 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 the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality.

Category A: Trees of high quality with an estimated remaining life expectancy of at least 40 years.
(1) Trees that are particularly good examples of their species, especially if rare or unusual.
(2) Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.
(3) Trees, groups or woodlands of significant conservation, historical, commemorative or other value.

Category B: Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
(1) 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 minor 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.
(2) Trees present in numbers, usually growing as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals; or trees present in numbers but situated so as to make little visual contribution to the wider locality.
(3) Trees with material conservation or other cultural value.

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 150mm.
(1) Unremarkable trees of very limited merit or of such impaired condition that they do not qualify in higher categories.
(2) 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 landscape benefits.

TREE SURVEY SCHEDULE

GOSH 20 Guilford Street, London WC1

No.	Species	Height	Trunk diameter	Radial crown spread	Crown break	Crown clear-ance	Age class	Physio - logy	Structure	Comments	Cate gory
1	London plane	19.5m	870mm	10.6m N 11m NE 9.5m E 9.5m SE 4m S 4.5m SW 6 W 11.5 NW	4.5m W	5m N	Mature	Average	Moderate	On site; stout, single trunk; upright, growing in rectangular planting pit in pavement; evidence previously pollarded at approx. 8m, since then allowed to grow out; wide spreading crown, suppressed on SW side by the crown of tree no.2, with which it forms a group; otherwise a dominant crown, extends some way over the roof of 20 Guilford Street to E; no evidence of significant disease or decay; however, small cavity noted on S side of trunk at 5.5m opposite lowest lateral branch to the N; probable former pruning wound with localised cone of decay within; some of the re-shoots from the pollard points at 8m have excessive end weight and protrude from the crown, particularly one ascending branch to the NW; other heavy laterals in other areas would benefit in some reduction to reduce the pressure on these pollard points; also one particularly long lateral growing to the SE protrudes from the remainder of the crown as probably has been suppressed by lateral on tree no.2; together with tree no.2 and no.3 on the W side of Guilford Place, these trees form a significant group and are readily visible in the landscape; mirrors the tree'd character of Coram's Fields on the N side of Guilford Street, consequently of high landscape value; of only moderate quality due to previous pruning and slightly suppressed and one-sided crown; of long-term potential.	B (2)
2	London plane	19m	860mm	8m N 6.5m E 10m S 12m W	6m W	8.5m E	Mature	Average	Moderate	On site; significant buttress roots around base of single trunk which bows to the NW from just above ground level; growing within large planting pit within footpath; buttress roots most prominent to the E and S; evidence that previously pollarded at 8m but since then has been allowed to grow out; possibly the lean and the one sided crown on the NW side due to former suppression by tree no. 1, but actually this tree has a more rounded and less suppressed crown than that specimen; long branches have excessive end weight, particularly that on the E side which grows out to the E/SE above the 20 Guilford Street and above Nos. 3-6 Guilford Place; this should be reduced to clear it from the other tree and to reduce its weight; evidence that branches to W that overhang Guilford Place have been reduced in the past; pruning wounds readily visible, most of them not fully occluded indicating this was done quite recently; together with tree no.1 and no.2, makes a significant contribution to the landscape of Guilford Place and this section of Guilford Street from both of which it is readily visible, also visible from Coram's Fields to N; of moderate quality and high landscape value; of long-term potential.	B (2)

No.	Species	Height	Trunk diameter	Radial crown spread	Crown break	Crown clear-ance	Age class	Physio - logy	Structure	Comments	Cate gory
3	London plane	20.5m	850mm	11.5m N 11m E 7.75m S 4.75m W	2.5m N	3m S	Mature	Average	Moderate	Off site; evidence at base of lifting / distortion of brick and concrete pavers consistent with root activity; prominent buttress roots particularly on S and W sides, with lifted bark to a height of 2m on S side of trunk; stout trunk leans by approx. 15°, straightens to vertical above the lower pollard points at approx. 7.5m; low branch to N at 2.5m has developed into a subsidiary leader and extends heavily over Guilford Street to N, it protrudes from the remainder of the crown and is consequently wind exposed at its tips, extent of protrusion is approx. 3.5-4m, if branch removed crown spread to N would be reduced to 7.75m; evidence of pruning wounds on lower main trunk; two non-occluded wounds just above the lowest branch at 3m; the lower wound has some seepage from a very small non-occluded hole in the centre, the upper at approx. 3m has exposed wood approx. 100mm x 100mm; specimen previously pollarded at 7.5m with four main stems from this point; re-pollarded at a later date at 13m; broad dominant crown, spreading above this point; suppressed on S side and reduced back from adjacent four/five storey building; apparent magpie nest in top of crown; tree readily visible in views from Guilford Street and Guilford Place; in conjunction with trees trees no.1 and no.2 forms a significant landscape feature in this location; of moderate quality but of high value and of long-term potential.	B (2)
4	Tree of Heaven	9.5m	50mm 130mm 30mm	3m N 1m E 3m S 3m W	0m	2m N	Young	Average	Poor	On site; triple trunks from base, growing adjacent to building; trunks in contact with wall of building, high potential for future structural damage; should be removed for sound arboricultural management reasons; of low quality, of low landscape value, but of medium-term potential.	U
5	Tree of Heaven	16.5m	450mm	8m	7m NE	7m	Mature	Average	Indifferent	Off site tree; growing on adjacent garden where ground is 0.5m higher than the level of the car park; high crown; crown has been lifted and reduced in past; previously crown reduced at 4.5m on NE side leaving pruning wounds of approx. 130mm diam. which are partially occluded and from which there is vigorous regrowth; at 12.5, above ground level of car park, a S branch has necrotic bark and evidence of die back in a branch above this point leaving a stub of approx. 5-6m in length; of no more than moderate quality and of long-term potential; although views of the tree are prominent in the immediate area, tree is only visible in a glimpsed view from a single point in Millman Street, looking west down Millman Mews between Millman Court and the GOSH building, and therefore whilst it is the largest tree in the area it has only limited visibility from public areas and is of no more than moderate landscape value.	B (12)
6	Sycamore	12m	est. 400mm (over ivy)	3m N 3m E 5m S 5m W	m	3m	Semi-mature	Below average	Poor	Off site tree; covered in ivy from base to approx. 11m and therefore it was not possible to ascertain crown break or inspect trunk or branch condition; sparsely foliated as it has become swamped by ivy; minimal overhang into the site; of low quality, of low landscape value, and of little potential.	U
7	Tree of Heaven	12m	360mm	5.5m N 6.5m E 6.5m S 4m W	3m N	2m	Semi-mature	Average	Indifferent	On site; single trunk specimen growing in tarmac; from 1.5m above ground level the trunk leans 20 degrees to the E; union at 3m where main branch structure commences; above average deadwood in the crown av. diam. 30mm, suppressed by Tree of heaven no. 5; of moderate quality and of long-term potential; but of low landscape value.	C (1)

No.	Species	Height	Trunk diameter	Radial crown spread	Crown break	Crown clear-ance	Age class	Physio - logy	Structure	Comments	Cate gory
8	Cotoneaster	10.5m	est. 230mm	5.5m	1.75m N	2m	Mature	Average	Poor	Off site tree; single trunk growing adjacent to wall; at 1.75m trunk bifurcates into co-dominant unions with included bark; numerous crossing branches within the crown; of low quality, of low landscape value, and of little potential.	C (12)

Appendix 2:

Schedule of Tree Works

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Schedule of Tree Works

at:

GOSH,
Guilford Street,
London.
WC1

May 2015

Ref. SJA stw 13012-01a

Schedule of Tree Works.

GOSH, Guilford Street, London WC1

No.	Species	Recommended works
4	Tree of heaven	Fell and remove stump.
5	Tree of Heaven	Crown lift on the E side to a height of 9m above ground level to allow clearance between the boundary line to the west and the proposed building, and to allow 2m clearance from the proposed building to the south.
7	Tree of Heaven	Fell and remove stump.
8	Cotoneaster	Reduce crown on N side back to the boundary wall.

All tree works are to be done in accordance with the British Standard BS 3998: 2010, *Tree work - Recommendations*.

Climbing irons or spikes are not to be used whilst pruning trees; they may only be used for the sectional removal of trees.

All arisings are to be removed from site, which is to be left neat and tidy as found.

Care must be taken that the ground next to retained trees does not become compacted as a result of tree surgery operations. No vehicles or equipment such as tractors, timber lorries, cranes or excavators shall be driven or parked beneath the crowns of any trees to be retained, as this could cause soil compaction and consequent root death.

Birds. Please note that it is an offence under Wildlife and Countryside Act (WCA) of 1981, as amended by the Countryside and Rights of Way (CRoW) Act 2000, to:

- Kill, injure or take any wild birds
- Damage or destroy nests that are in use or are being built
- Take or destroy eggs
- Intentionally or recklessly disturb any wild bird while it is nest building, or at (or near) a nest containing eggs or young, or disturb the dependent young of any bird.

Care must therefore be taken that none of these offences are committed whilst undertaking the above works. If trees or hedges are to be felled or pruned between March and August, they should first be inspected carefully for nests; if found, and the proposed works are not necessary to preserve public health or safety, felling or pruning should be delayed until young birds have flown.

Bats. All bats are legally protected by the WCA and CRoW Act. Further protection is conferred by the Conservation of Habitats and Species Regulations 2010, following the European Habitats Directive (1992). These Acts and Regulations include provisions making it Illegal to:

- Recklessly or deliberately kill, injure or capture (take) bats
- Recklessly or deliberately disturb bats (whether in a roost or not)
- Damage, destroy or obstruct access to bat roosts (whether in use or not)

Prior to undertaking any tree works, a scoping survey comprising a detailed visual inspection from ground level for any evidence of bat occupancy should be made by an appropriately qualified person, or if necessary by a suitably qualified ecologist. Where features that have the potential to be a bat roost have been observed, a secondary bat assessment comprising

a close-up aerial examination should be undertaken immediately prior to the commencement of tree works. If following the secondary assessment it is reasonably suspected that a roost exists, a licensed bat worker should be contacted to undertake a more detailed assessment with specialist equipment. Should a tree be found to be supporting a bat roost, a licence will be required from the relevant Statutory Nature Conservation Organisation (SNCO), before any works can be carried out.

If emergency work is required to a tree on the grounds of public safety, that specimen must still be assessed for bats prior to work commencing; and if it is suspected that the tree supports a roost the relevant SNCO, local police liaison officer and a licensed bat worker must be informed. If the condition of the tree poses an imminent danger to the public then public safety will take precedence. However, the contractor must ensure that no reasonable alternatives are available, and that he undertakes only the minimum action that can be safely taken to reduce the risk to the public to an acceptable level. Furthermore, he should record the tree's condition and justification for the work in writing.

Where tree surgery is carried out, cuts will be made as far above any likely hole or crack in the bark which has potential to support a roosting bat, and crown thinning or reduction will be minimised. If, following secondary assessment no roosts are identified or reasonably suspected, but the potential for them still exists, work should proceed with caution. For example, stems and/or branches should be lowered carefully by rope and where possible large sections will be left on-site for a minimum of 48 hours to allow bats to vacate. Note that if a bat roost is damaged as a result of tree works it may be necessary to demonstrate to the SNCO that good practice was implemented.

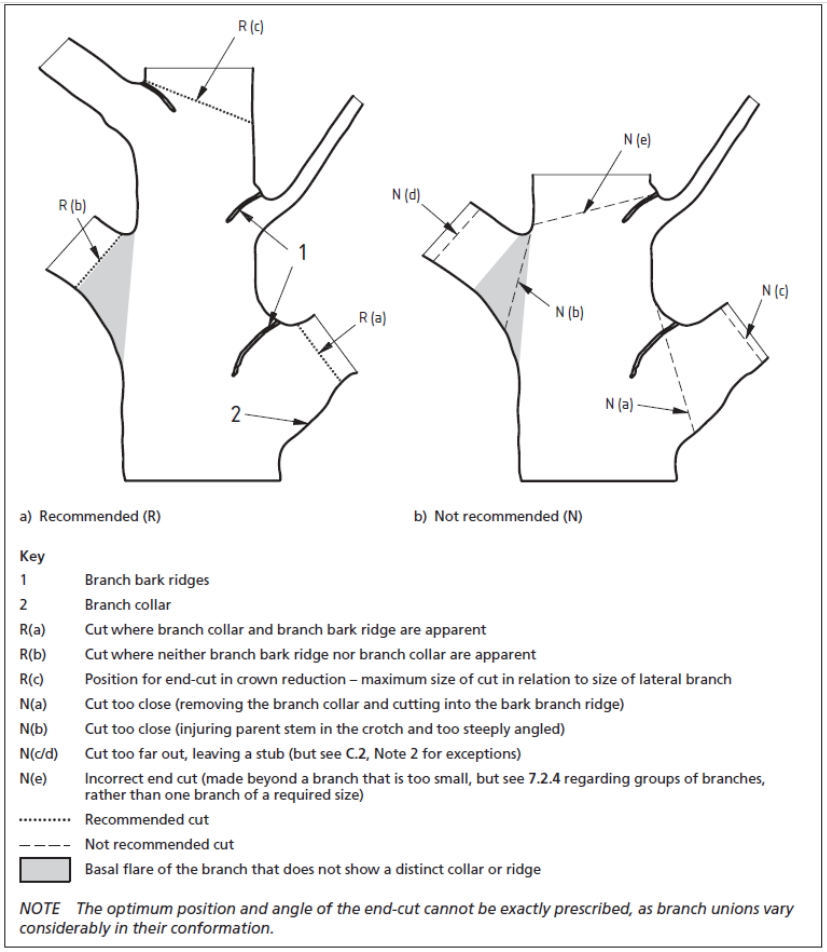
If bats are discovered when limbs are removed or trees are felled, work must stop immediately and the relevant SNCO, the local police liaison officer and if possible a licensed bat worker must be informed.

Definition of Terms.

1. Pruning (in general)

1.1. Pruning shall be undertaken following the principles of good arboricultural practice as stated in British Standard BS 3998: 2010. The positions of final pruning cuts will comply with Figure 2 'Positions of final cuts' at p23 of this document, as shown below.

1.2. Where aerial growth is to be removed, great care shall be taken not to leave a stub which may provide a food base for both fresh wound parasites and decay fungi and not to cut back into or beyond the branch collar. Injury of the wood and bark of the parent stem or branch above the cut will also be avoided.



a) Recommended (R)

b) Not recommended (N)

Key

1	Branch bark ridges
2	Branch collar
R(a)	Cut where branch collar and branch bark ridge are apparent
R(b)	Cut where neither branch bark ridge nor branch collar are apparent
R(c)	Position for end-cut in crown reduction – maximum size of cut in relation to size of lateral branch
N(a)	Cut too close (removing the branch collar and cutting into the bark branch ridge)
N(b)	Cut too close (injuring parent stem in the crotch and too steeply angled)
N(c/d)	Cut too far out, leaving a stub (but see C.2, Note 2 for exceptions)
N(e)	Incorrect end cut (made beyond a branch that is too small, but see 7.2.4 regarding groups of branches, rather than one branch of a required size)
·····	Recommended cut
– – – –	Not recommended cut
	Basal flare of the branch that does not show a distinct collar or ridge

NOTE The optimum position and angle of the end-cut cannot be exactly prescribed, as branch unions vary considerably in their conformation.

2. Crown Lifting.

2.1. Crown lifting is defined as the removal of all soft growth and branches or parts thereof within the limits prescribed by the Schedule of Works, which are below or which extend below the height specified therein.

2.2. Ascending branches that originate below the specified height, and have no foliage below this point, shall be retained unless otherwise specified. Descending branches that originate above the specified height, and have foliage below this point, shall be reduced back to the closest appropriate junction point to the desired height.

2.3. Crown lifting may result in the canopy base being not at one single level but stepped to allow for different clearances, for example where a tree overhangs both a footway and a road where different height clearances are required.

3. Crown Reduction.

3.1. Crown reduction is defined as the reduction of the outline dimension of the canopy, from the tips of limbs and branches toward the main trunk, by pruning growth to an appropriately sized lateral branch, twig or bud to leave a flowing silhouette.

3.2. The crown should normally be reduced in proportion to its original shape, so as to avoid altering the balance of the tree as a whole, and to maintain as natural an appearance (for the species) as constraints allow. A strong framework of healthy small-diameter branches and twigs (leaf-bearing structure), capable of producing dense leaf cover during the following growing season, should be retained.

3.3. Reduction may be of the entire crown, or of one part of the crown. The extent of reduction is given in metres.

3.4. Where a limb, branch or leader is to be shortened it shall be cut back cleanly to a vigorous side branch leaving the branch bark ridge and branch collar intact. **The diameter at point of origin of retained side branches intended to form the new dominant shoot shall be at least 30% of the diameter of the parent branch at the pruning point.** Wounds should not exceed 100 mm in diameter except on very large trees.

3.5. The number and size of pruning cuts should be limited so that their total cross-sectional area does not exceed one-third of that of the trunk, when measured at 1.5 m above ground level.

4. Tree Felling.

4.1. Felling is defined as the cutting down of a tree to a point as close to ground level as is reasonably practicable, but no higher than 100mm above surrounding ground level (unless a tree has pronounced buttress roots which makes this impractical, in which case it should be cut to as close to 100mm as possible).

4.2. Felling shall be carried out in a controlled manner, using guide ropes where appropriate to ensure that trees or branches fall away from buildings, equipment, and other trees and understorey shrubs.

4.3. Where necessary, trees should be dismantled and removed in sections rather than felled from the ground to prevent them falling onto buildings, equipment, vehicles or the crowns of other trees.

4.4. No part of any tree shall fall outside the boundaries of the premises unless prior agreement has been reached with the adjacent landowner, and the client has been informed in advance.

4.5. In order to allow time for bats to re-locate, trees that are covered with dense ivy will be left for a period of 48 hours prior to cutting up or removal.

5. Stump Removal.

5.1. Stump removal is defined as the action taken to physically remove the stump of a felled tree from the ground. The schedule specifies that tree stumps are to be removed in one of the following two ways:

a) Ground out. ("chipping" and "cutting" are synonymous with grinding) Stumps shall be ground to a minimum of 300mm below ground level with a proprietary machine which may be self-powered or driven from a power take-off shaft. Where stumps are to be ground out the Contractor is responsible for satisfying himself as to the whereabouts of any underground services or apparatus.

Where the intention of stump grinding is to reduce the potential for the spread of Honey fungus, it should normally extend through the base of the stump, leaving the major roots disconnected.

b) Removed. Stumps may be ground out as above; or alternatively may be dug or grubbed out with an excavator or a winch. The Contractor is responsible for satisfying himself as to the whereabouts of any underground services or apparatus.

Following stump removal, backfilling with previously saved topsoil or, if necessary, an imported soil of similar texture will be undertaken in 150 mm layers, with firming by treading to ensure that no air pockets are left. The soil will be left at a height of approximately 75mm above the surrounding soil, to allow for future settlement.

6. Removal of Arisings.

6.1. The working area is to be left clean and tidy when the contractor goes off site at the end of the working day. The Contractor shall keep all highways, drives and footpaths clear of obstructions.

6.2. The Contractor shall be responsible for the disposal of all arisings from the works at his own expense. All charges, fees, transport and other expenses in connection with tipping shall be borne by the contractor.

6.3. The Contractor shall remove arisings from site as soon as is reasonably practicable after they are produced. Removal of arisings shall not be undertaken on Saturdays, Sundays or Public Holidays without the prior written agreement of the client.

6.4. The Contractor shall be responsible for the provision of an authorised tipping facility, and for ensuring that all arisings from the works are removed thereto. Such a facility shall be off-site, and no unauthorised tipping shall be carried out within the contract area or in any other place.

7. Working alongside the Public Highway.

7.1. The Contractor shall not cause any unnecessary obstruction or interference with vehicle or pedestrian traffic along the public highway. The Contractor shall keep the road and the footpath open at all times.

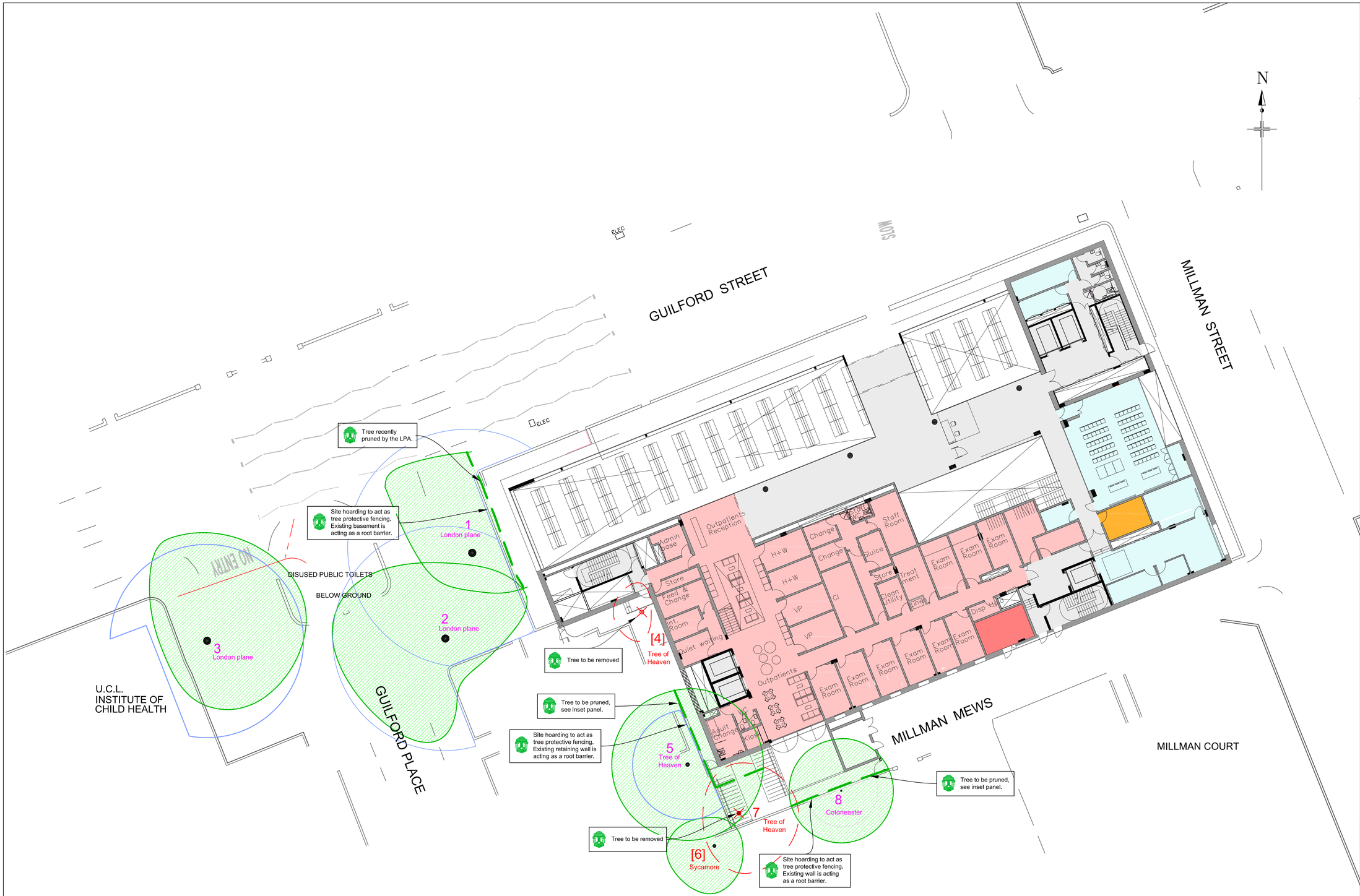
7.2. The Contractor shall ensure that site transport directly or indirectly involved with the works shall at all times be in a state of cleanliness to preclude the fouling of adjacent roads and footpaths. If cleanliness cannot be ensured on site, any materials (including dirt, mud, sawdust or other debris) deposited on roads or footpaths shall be removed promptly.

7.3. The Contractor shall be responsible for ascertaining and complying with the requirements of the highway authority and the police as to any regulations, restrictions, directions or instructions concerned with the movement of traffic or pedestrians in the vicinity of the works.

7.4. The Contractor shall warn the general public of works alongside the highway by the display of appropriate warning signs, in accordance with current Department of Transport requirements.

Appendix 3:

Tree Protection Plan



Arboricultural Impacts: Summary

(For details, see below)

Impact	No. of Trees
Trees to be removed	2
Trees where supervised demolition needed within RPAs (only if existing basement wall adjacent to London planes nos. 1 & 2 is to be replaced)	2
Trees where manual excavation needed within RPAs	0
Trees where above soil surfacing needed within RPAs	0
Trees with proposed underground services within RPAs	0
Trees that will require pruning	2

Trees to be Removed

No	Species	Works
4	Tree of Heaven	Fell and remove stump
7	Tree of Heaven	Fell and remove stump

Trees that will require pruning

No.	Species	Works
5	Tree of Heaven	Crown lift on the E side to a height of 9m above ground level to allow clearance between the boundary line to the west and the proposed building, and to allow 2m clearance from the proposed building to the south.
8	Cotoneaster	Reduce crown on N side back to the boundary wall.

Pruning is to be undertaken in accordance with the British Standard Recommendations for Tree work, BS3998: 2010.
Climbing irons or spikes are not to be used whilst pruning trees.

Simon Jones Associates Ltd.

Project:	GOSH Redevelopment
Client:	Great Ormond Street Hospital Charity
Drawing:	TREE PROTECTION PLAN
Drawing No:	SJA TPP 13012-04a
Revision No:	
Based On:	Ground floor plan 464-00-202
Drawn By: ASA/BMO	Date: September 2014
Scale:	1:200 @ A1
Tel:(01737) 813058	Fax:(01737) 816140
sja@sjatrees.co.uk	
Tree nos.: 8	Category 'U' trees: [4]
Canopies of trees to be retained:	
Category 'A' RPA:	Category 'B' RPA:
Category 'C' RPA:	
Trees to be removed: 7	Indicative pruning line:

For further information refer to the SJA Tree Schedule
Do not scale from this drawing; please check all dimensions on site, and notify us of any discrepancies. Simon Jones Associates cannot be held responsible for inaccuracies in the topographical plan on which this drawing is based.

This drawing is designed to reflect only the principles of layout and /or design insofar as these relate to the protection of trees to be retained, and should NOT be read as a definitive engineering or construction method statement. Reference should be made to the architect or structural engineer, as appropriate, over any matters of construction detail or specification, or any engineering standards or regulatory requirements relating to proposed structures, hard surfaces or underground services.