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ARBORICULTURAL AND WOODLAND CONSULTANTS

TITLE: **Arboricultural Impact Assessment:**
Plender / Camden Street, London

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PREPARED BY: Dominic Poston

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Institute of Chartered Foresters
Registered Consultant

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Prepared by:

Name	Position
Dominic Poston	**Principal**

Checked by:

Name	Position
G Dewdney	**Consultant**

Approved by:

Name	Position
Dominic Poston	**Principal**

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Local Authority Validation Statement

In accordance with the ***Department for Communities and Local Government Circular 02/2008*** and its guidance document ***Validation of Planning Applications***, this report meets the recommended national list criteria for tree survey/arboricultural information. More specifically, it contains the following:

- A full tree survey compliant with the requirements laid out in ***BS5837: 2012 'Trees in Relation to design, demolition and construction – Recommendations'*** undertaken by a qualified arboriculturist

- A plan to a suitable scale with a north point and showing tree survey information, retention categorisation and root protection areas

- An assessment of the arboricultural implications of development detailing trees to be retained and removed as well as the relevant protection measures (Part 2)

- A draft arboricultural method statement detailing the means of tree protection, implementation and phasing of works (Part 3)

Summary

It is the author's opinion that there is no specific arboricultural reason why this development cannot proceed as highlighted within this report.

The site has been assessed in accordance with BS 5837:2012 'Trees In relation to design, demolition and construction – Recommendations'.

The site is already developed and the proposal will sit (as regard existing trees) within the existing footprint.

The proposal is to construct new residential accommodation on Camden Street and Plender Street, London.

The proposed buildings makes good use of the space available allowing the good quality trees to be retained with adequate space.

The tree protection measures given in this report should be implemented. It is strongly recommended that the arboricultural protection measures are clearly communicated to the entire construction team prior to commencement – this process should involve the Local Planning Authority so as to ensure any planning conditions are not breached. This is most effectively managed by monitoring the development on a regular basis, checking tree protection measures in relation to the Tree Protection Plan & Arboricultural Method Statement(s) and reporting to the LPA on a monthly basis.

A detailed impact assessment can be found in part 2, this should be read in conjunction with the Tree Protection Plan which can be found at appendix 2. Site specific methodologies are located in part 3.

Contents:

Part One: Introduction

1.0 Particulars of Instruction

1.1 I have been instructed by MACE with regards to a planning application being made; to report on the following:

1. To assess the quality of the Trees and Hedgerows on (and immediately adjacent to) the site.
2. To provide an Arboricultural Impact Assessment with regard to the proposal.
3. To recommend measures that will suitably protect retained trees during the development process.
4. To recommend an appropriate level of mitigation and/or compensation where necessary.

2.0 Authorship

2.1 The author is a chartered arboriculturist and chartered environmentalist. He holds the Royal Forestry Society's Professional Diploma in Arboriculture, is a fellow member of the Arboricultural Association and a registered consultant with the Institute of Chartered Foresters. The findings in this report are reached through site observations and conclusions are made in light of the author's experience. Details are available upon request or at www.hallwoodassociates.com.

3.0 Provided Documents

3.1 The author was provided with copies of the following plan(s):

I. Topographical land survey of existing site
II. Proposed layout

4.0 Scope of Survey

4.1 This report and all plans appended to it have been formulated using guidance given in the British Standard 5837: 2012 'Trees in relation to design, demolition and construction – Recommendations'.

4.2 The tree survey was carried out independently, as far as possible, of the proposed new layout, as recommended in the British Standard.

4.3 The survey contains details of the size, condition and retention category of each tree which may be affected by the proposed development.

4.4 The retention category is derived from the British Standard which allows arboriculturists to place trees in certain bands so that impacts can be appropriately quantified and managed; broadly defined as follows:

- A Category - High quality and value - such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested);
- B Category - Moderate quality and value - those in such a condition as to make a significant contribution (a minimum of 20 years is suggested);
- C Category - low quality and value – currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested).
- U Category - in such a condition that any existing value would be lost within 10 years and which should, in the current context be removed for reasons of sound Arboricultural management.

4.5 Tree positions have been taken from, or estimated from the provided topographical plans. It would be prudent to confirm positions if it could affect the proposed construction.

5.0 Limitations

5.1 The potential effect of development on trees, whether statutorily protected (e.g. by tree preservation order or by their inclusion within a conservation area) or not, is a material consideration that is taken into account in dealing with planning applications. HWA have not checked whether trees on site are statutorily protected and you must carry out a statutory tree protection check if you intend to undertake any works prior to formal planning consent being issued.

5.2 Comments relating to non arboricultural matters may be made throughout this report. Making comments on such matters is within the normal remit of our instructions and the range of the author's experience. Any opinion thus expressed should be deemed as provisional and confirmation sought from an appropriately qualified professional.

5.3 The statements made in this report do not take account of the effects of extremes of climate, vandalism or accident, whether physical, chemical or fire. Hallwood Associates Limited cannot therefore accept any liability in connection with these factors, nor where prescribed work is not carried out in a correct and professional manner in accordance with current good practice. The authority of this report ceases at any stated time limit within it, or if none stated after two years from the date of the survey or when any site conditions change, or pruning or other works unspecified in the report are carried out to, or affecting, the subject tree(s), whichever is the sooner.

5.4 All rights in this report are reserved. Its content and format are for the exclusive use of the addressee in dealing with this site. It may not be sold, lent, hired out or divulged to any third party not directly involved in this site without the written consent of Hallwood Associates Limited.

5.5 European legislation and UK statutes such as the Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000 and the Conservation of Habitats and Species Regulations 2010 (as amended) provide statutory protection to birds, bats and other species that inhabit trees. These could impose significant constraints on the use and timing of site access in addition to any of the tree matters detailed in this report. These issues are beyond the scope of this report and have therefore not been considered.

6.0 Methodology

6.1 Each tree was surveyed and given a number corresponding to the tree constraints plan (TCP) found at appendix 2. For each group or individual information was collected as recommended at 4.4.2.5 of BS 5837. The survey was preliminary in nature and did not involve aerial or detailed inspection. This data is held within the tree schedule which can be found at Appendix 1.

6.2 BS5837 recommends that trees within categories A-C (where A is highest quality) are a material consideration in the development process. However it should be noted that young trees with a stem diameter less than 150mm may be considered for relocation. Category U trees are those that will not be expected to exist for long enough to justify their consideration in the planning process. The A-C categories are combined with the numbers 1, 2 or 3. These numbers signify whether the justification for the category was based on arboricultural, landscape or cultural/conservation values respectively. The tree categories are illustrated on the plans with colour coding. Category A trees are light green, category B are mid blue, category C are grey and category U are dark red.

6.3 Where category U trees are notable for their conservation, heritage or landscape value, even though only for the short term, they may be upgraded, although they might be suitable for retention only where issues concerning their safety can be appropriately managed.

6.4 Section 4.6 of BS5837 recommends that the trunk diameter measurement for each tree is used to calculate the root protection area (RPA), which can then be interpreted to identify the design constraints and, once a layout has been developed, the Tree Protection Zone (TPZ) to be protected by barriers (tree protection plan (TPP)).

6.5 Following inspection and grading of the trees, the information listed in Appendix 1 is used to provide constraints guidance to the project architect based on the locations of the best trees. All U trees are ignored as they not of good enough quality to be considered as a material constraint on development.

6.6 Figure 2 in Appendix 2 (TPP) shows the trees recommended for retention, their relevant RPA and provisional positions for protective fencing and ground protection. The position of the protective fencing is adjusted by estimating the likely root morphology. Root morphology will be influenced by the ground conditions; roots will proliferate where soil conditions are favourable and less so where the ground conditions are poor e.g. Buildings and metalled roads with deep foundations will inhibit root growth into the area.

7.0 The Site

7.1 The site visit was carried out on Monday 31st December 2012. All observations were from ground level without detailed investigation and all measurements are estimated unless otherwise indicated. The weather at the time of inspection was clear, bright and dry, with good visibility.

7.2 The surveyed trees are located on publicly maintainable highway land in a heavily urbanised area.

7.3 Due to site topography most of the mature trees are clearly visible for some distance and therefore have associated high amenity values.

7.4 Section 4.3 of BS5837 recommends carrying out a soil assessment in order to inform decisions regarding tree protection, new planting and foundation design. In this instance it was deemed appropriate and satisfactory in the context of the proposal for the author to undertake a rudimentary field test. In this case it indicated the likely presence of plastic, shrinkable soils across the site.

Part Two: Impact Assessment

8.0 Arboricultural features

8.1 All Arboricultural constraints are indicated graphically on figure 1 (Tree Constraints Plan). There are 5 trees which have been categorised within the site, all are categorised as of high quality (A/Green).

8.2 A schedule of tree condition and category of retention (see 4.4 above) is attached at appendix 1.

9.0 Detailed Impact Assessment

9.1 The proposed developments impact upon the trees has been assessed according to RPA encroachment and disturbance. All trees affected and the proposed mitigation is identified in Table 1 below:

Important Trees		Non-Important Trees	Impact	Reason
A	B	C		
T1-5			Trees to be pruned	To make space for development
T1-5			RPA disturbance	Removal or installation of surfaces/structures/landscaping

Table 1: Arboricultural Implications

9.2 5 Category A trees have been identified as at risk of damage through RPA disturbance as follows:

9.2.1 These trees are considered important, as they have a high potential to contribute to amenity so any adverse effects upon them should be minimised. Standard root protection area calculations indicate a significant volume of roots will be passing beneath the existing buildings. However due to the existing developments existing foundations and/or basement it is anticipated that these trees will have preferentially laid down roots beneath the highway and footpath. Never the less excavation/demolition is likely to discover existing root material and these changes may cause harm if not carried out with care. Hallwood Associates have reviewed the situation closely and believe that these tree may be retained successfully if appropriate protective measures are correctly specified and implemented in line with the attached appendices.

9.2.2 Physical tree protection in the form of a heavy ply-wood box is specified in part 3.

9.3 5 Category A trees have been identified as requiring crown works in order to facilitate development and limit shading/influence upon the proposed development. Given their species and previous history of cyclical heavy crown reductions this work is not likely to have long-lasting negative effects. In fact it is likely to extend safe useful life expectancy and reduce the likelihood of sudden, unexpected limb failure resulting from weak unions.

9.4 No details of service or utility runs have been supplied for consideration within this assessment, however, due to the existing site layout and location of retained trees it is anticipated that there would be no additional conflict with the root protection zones. Where works are unavoidable, all excavation must be carried out in accordance with National Joint Utility Guidelines Publication Volume 4: Guidelines for the planning, installation and maintenance of utility services in proximity to trees.

9.5 The demolition of existing on-site structures will be undertaken in line with the general guidance contained at paragraph 5.3 in part 3 regarding the removal of structures and/or surfaces.

9.6 Damage by indirect action can occur in shrinkable soils such as clay when vegetation takes moisture from the ground, causing a significant volume change resulting in ground movement. Buildings and drainage need to be protected against the effects of subsidence and heave.

9.6.1 **Subsidence**: Occurs when water is withdrawn from the soil causing it to shrink.

9.6.2 **Heave**: Occurs when previously dehydrated soils take up water and swell. This can happen when vegetation is removed or roots severed.

9.6.3 **Note:** Advice from an arboriculturist on the zone of influence of existing vegetation along with guidance and specifications from a qualified engineer must be sought when considering the above constraints.

9.7 Where retained tree crowns are close to or overhanging built structures it would be prudent to specify the filtration of rainwater guttering. This should also include the provision of ladder rest points to enable maintenance. In addition, downpipes should be fitted with traps.

10.0 Protection of retained trees

10.1 The successful retention of trees depends on the quality of protective measures and the administrative procedures to ensure those protective measures remain in place throughout development. An effective way of achieving this is by way of an Arboricultural Method

Statement (AMA) which can be specifically referred to in a planning condition. A draft AMS for this development is located at part 3.

11.0 Mitigation

11.1 Given that no existing trees are to be lost facilitating this development, no mitigation planting is specified. However, significant new planting has been specified and will be submitted under separate cover.

12.0 Tree works schedule

12.1 Tabulated below is a list of recommended tree works which should be carried out prior to development.

12.2 All recommended works should be implemented in line with British Standard 3998: Tree work or subsequent industry accepted best practice.

12.3 The recommendations contained herein are preliminary and subject to change subsequent to approval.

12.4 Provisional tree work specification (Subject to statutory protection check):

Tree No	Operation	Specification	Reason	Timing
T1-5	Crown reduction	Crown reduction/pollard to previous points.	• Reduce likelihood of unexpected limb failure • Facilitate development	Immediately prior to commencement of development (not between March-July)

Table 2: Tree works specification

13.0 Conclusions

13.1 British Standard BS5837:2012 contains clear and current recommendations for a best practice approach to the assessment, retention and protection of trees on development sites. The proposed development has followed this guidance by:

- Seeking arboricultural advice to inform the layout and design of the proposed building
- Respecting the constraints posed to development of the site by high or moderate quality trees
- Continuing to take advice on all aspects to the proposal that may impact upon trees

13.2 The protection of retained trees on site during the proposed development works can be achieved by continuing to follow the recommendations of this report, BS: 5837 and suitably drafted planning conditions.

Part Three: Arboricultural Method Statement

Contents:

1.0 Sequence of events

1.1 ***Before demolitions, soil stripping and construction work starts (including bringing of plant and materials on site):***

- **A pre-commencement site meting** shall be held prior to the commencement of any works associated with the proposed development. This is required in order for the Local Planning Authority, the retained Arboricultural Consultant and construction personnel to agree all approved site processes. This meeting may be used to formally agree on site tree protection measures prior to the commencement of clearance work and development.

- **Tree works to be completed**

1.2 **After tree works but before demolition, soil stripping and construction work starts (including bringing of plant and materials onto site):**

- **Tree protection fencing**:
  - **Positioning** as shown in Figure 2 and to be confirmed during pre-commencement site meeting with LPA and contractor will be constructed after tree works have been carried out but before any construction or demolition has commenced.

  - **Specification** will be of heavy ply-wood construction (at least 20mm gauge) 3m high. They need to be self-supporting and if possible anchored into the ground. On hard surfaces where anchorage is not possible, they need to be heavy with extra weight placed at the bottom edge (this could consist of railway sleepers or water filled bollards). There must be space between the tree trunk and box edges to allow for some movement of the box without pressuring the tree. It is then

hoped that if a vehicle contacts the box it will resist the collision and only move if this becomes excessive. Below is an indicative image.

Pic 1: Example tree protection box.

1.3 **During construction:**

- **Special construction methods and techniques** as detailed at 6.0 to be adopted.
- **Tree protection will not be moved or altered** without written consent from the Local Planning Authorities tree officer and the area within (Tree Protection Zone (TPZ)) will be considered sacrosanct.

1.4 **Post construction works and following removal of all plant and materials from site:**

- **Removal of tree protection** will only be permitted once construction work is complete; following approval from the Local planning authorities' tree officer.

2.0 Tree work

2.1 Prior to work commencing on site and before the tree protection is installed it will be necessary to complete the tree works.

9.5 The final tree work schedule will be available once the necessary statutory searches on tree protection have been carried out with the Local Planning Authority (LPA).

2.3 All tree work must comply with British Standard 3998: 2010 'Recommendations for tree work' or other current industry standard.

2.4 All required tree works are scheduled within section 12.

2.5 Should the requirement for additional tree works become apparent during the construction process; written consent shall be obtained from the LPA prior to these works being undertaken.

3.0 Interpretation

3.1 A copy of this method statement including Figure 2 will be provided to all relevant parties.

3.2 Dimensions and positions of the approved fencing will be drawn onto all plans used by site operatives.

3.3 Laminated protective fence signage, such as that shown below will be erected on all sides of the protective fencing at 1.5 from ground level.

4.0 Site Monitoring and Supervision

4.1 Tree protection will be inspected at pre-determined and agreed time intervals by the retained arboricultural consultant approved by the LPA (At least fortnightly during construction phase is recommended).

4.2 Results will be recorded and available for scrutiny by the Local Planning Authority and Developer. Any defects requiring remediation or rectification shall be notified to the site foreman/manager and the client.

4.3 Should protective fencing become damaged so as to impair its function as a protective barrier, all works shall cease in the vicinity of the damage, until the fence has been repaired.

4.4 Should damage occur to any of the retained trees for whatever reason, the damage should be reported to the site foreman/manager immediately. The site foreman/manager will then report to the retained arboricultural consultant to enable remediation to be implemented as necessary and agreed with the LPA.

4.5 Upon completion of all development works the retained Arboricultural Consultant, the client and a representative from the LPA will meet on site to discuss any remedial works required.

5.0 Construction Method Statement

Construction operations in the vicinity of retained trees must be carried out with caution so as to prevent negative impacts.

5.1 **General precautions**:

5.1.1 Care must be taken when planning site operations involving wide or tall loads or plant with booms, jibs and counterweights to ensure that they do not come into contact with retained trees.

5.1.2 Any transit or traverse of plant such as described above will be conducted under the supervision of a banksman, in order to ensure adequate clearance is maintained at all times.

5.1.3 The crowns of existing trees extend beyond the protective fencing. Therefore care should be taken when using tall machinery near to tree crowns. Further advice will be sought regarding facilitative pruning or tying back branches if access is required.

5.1.4 No materials are to be stored within the Tree Protection Zone (TPZ).

5.1.5 Many building materials are toxic to trees. Excess cement, cement washings, waste water, diesel fuel and even clean water in excess can kill or seriously damage trees. Any run off of spillages should be controlled so that they do not contaminate the TPZ.

5.1.6 Changes (increases or decreases) in ground levels within the RPA will kill roots and harm the tree. Any changes in soil levels around trees during demolition, construction or landscaping must be approved in advance by the Local Planning Authority's tree officer.

5.1.7 Fire, either deliberate or accidental is harmful to trees. If fires are proposed they must not be carried out within 10m of the outer crown (drip line).

5.1.8 Trenches for services (electricity, gas, water etc) can damage tree roots. Service runs should be routed to avoid the RPA of any retained tree. If services are unavoidable within the RPA then it will be necessary to prepare method statements for protecting tree roots if no-dig techniques e.g. a mole are not practical.

5.2 Excavation and dealing with roots

5.2.1 All excavation must be carried out carefully using spades, forks and trowels, taking care not to damage the bark and wood of any roots. Specialist tools for removing soil around roots using compressed air may be an appropriate alternative to hand digging, if available. All soil removal must be undertaken with care to minimise the disturbance of roots beyond the immediate area of excavation. Where possible, flexible clumps of smaller roots, including fibrous roots, should be retained if they can be displaced temporarily or permanently beyond the excavation without damage. If digging by hand, a fork should be used to loosen the soil and help locate any substantial roots. Once roots have been located, the trowel should be used to clear the soil away from them without damaging the bark. Exposed roots to be removed should be cut cleanly with a sharp saw or secateurs 10-20cm behind the final face of the excavation. Roots temporarily exposed must be protected from direct sunlight, drying out and extremes of temperature by appropriate covering. Roots greater than 2.5cm in diameter should be retained where possible. Roots 2.3-10cm in diameter should only be cut in exceptional circumstances. Roots greater than 10cm in diameter should only be cut after consultation with the appropriate supervisory officer.

5.3 **Removing Surfaces/Structures in RPAs**

For the purposes of this statement, the following broad definitions apply:-

- **Surfacing**: Any hard surfacing used as a vehicular road, parking or pedestrian path including tarmac, solid stone, crushed stone, compacted aggregate, concrete and timber decking. This does not include compacted soil with no hard covering.

- **Structures**: Any man-made structure above or below ground including service pipes, walls, gate piers, buildings and foundations. Typically, this would include drainage structures, car ports, bin stores and concrete slabs that support buildings.

5.3.1 Roots frequently grow adjacent to and beneath existing surfacing/structures so great care is needed during access and demolition. Damage can occur through physical disturbance of roots and/or the compaction of soil around them from the weight of machinery or repeated pedestrian passage. This is not generally a problem whilst surfacing/structures are in place because they spread the load on the soil beneath and further protective measures are not normally necessary. However, once they are removed and the soil below is newly exposed, damage to roots becomes an issue and the following guidance must be observed:-

- No vehicular or repeated pedestrian access into RPAs unless on existing hard surfacing or custom designed ground protection.

- Regular vehicular and pedestrian access routes must be protected from compaction with engineer specified ground protection.

- RPAs exposed by the work must be protected as set out in BS 5837 until there is no risk of damage from the development activity.

5.3.2 Removing existing surfacing/structures is a high risk activity for any adjacent roots and the following guidance must be observed:-

1. Appropriate tools for manually removing debris may include a pneumatic breaker, crow bar, sledgehammer, pick, mattock, shovel, spade, trowel, fork and wheelbarrow. Secateurs and a handsaw must also be available to deal with any exposed roots that have to be cut.

2. Machines with a long reach may be used if they can work from outside RPAs or from protected areas within RPAs. They must not encroach onto unprotected soil in RPAs.

3. Debris to be removed from RPAs manually must be moved across existing hard surfacing or temporary ground protection in a way that prevents compaction of soil. Alternatively, it can be lifted out by machines provided this does not disturb RPAs.

4. Great care must be taken throughout these operations not to damage roots as set out in 5.2.1 above.

5. If appropriate, leaving below ground structures in place should be considered if their removal may cause excessive root disturbance.

5.4 Installation of new Structures in RPAs

5.4.1 New structures in RPAs are potentially damaging to trees because they may disturb the soil and disrupt the existing exchange of water and gases in and out of it. Mature and over-mature trees are much more prone to suffer as a result of these changes than young and maturing trees. Adverse impact on trees can be reduced by minimising the extent of these changes in RPAs. This can be done by constructing the main structures above ground level on piled supports and redirecting water to where it is needed. The detailed design and specification of such structures is an engineering issue that should be informed and guided by tree expertise.

5.4.2 Small sheds and bin stores: These light structures do not normally require substantial foundations and can have permeable bases. Ideally, their bases should be of a no-dig, load spreading construction set directly on to the soil surface. They require a flat base and so an undulating site will need levelling to provide a suitable surface. Excavation of any high points by up to 5cm and filling depressions with permeable fill to provide a flat base will normally be acceptable provided no roots greater than 2.5cm in diameter need to be cut. If large roots are found, the preferred course of action would be to raise the base level of the structure by filling rather than cutting roots. However, if this is not practical and large roots have to be cut, the situation should be discussed with the supervising officer before a final decision is made. Above the base, there will often be a protective covering fixed onto a frame that can rise directly from the base or be fixed to supports either banged into the ground or set in carefully dug holes. Provided the supports are well spaced, i.e. greater than 1.5m apart, and of a relatively narrow diameter, i.e. not in excess of 15cm, it is unlikely they will cause any significant disturbance to RPAs.

5.4.3 Walls, gate piers, buildings and bridges on new foundations: Conventional strip foundations in RPAs for any significant structure may cause excessive root loss and are unlikely to be acceptable. However, disturbance can be significantly reduced by supporting the above ground part of the structures on small diameter piles and beams of cast floor slabs set above ground level. The design should be sufficiently flexible to

allow the piles to be moved if significant roots are encountered in the preferred locations. Before the actual installation of the new structure starts, all RPAs that may be affected should be covered with temporary ground protection as set out in BS 5837. Gaps in the ground protection should be left where it is expected to install the piles or dig the holes for gate piers. Pile locations should be initially hand dug to a depth of 75cm to establish if there are any significant roots over 2.5cm in diameter that could be damaged. If significant roots are found, then the pile location must be moved slightly and a new exploratory hole dug. Once the piles have been installed, the supporting beams for the structure must be raised above the ground level between the piles and not require any further excavation. The beams between the piles can be pre-cast and imported to the site ready to fix or can be cast in position using shuttering for the sides and a biodegradable void former for the base. Gate piers generally require larger holes and have less flexibility for relocation if large roots are found. Localised loss of roots may be unavoidable so each situation should be assessed on its own merits by an appropriate supervising officer once the careful excavations have been completed. Any roots found should be dealt with as set out in 5.2 above. When installing any of these structures, the ground protection must remain in place until the construction is completed and there is no risk of damage to RPAs.

5.4.4 Walls on existing foundations: A free standing wall on an existing foundation is unlikely to require any additional excavation and so its construction should have no adverse impact on RPAs if the appropriate protection is in place. However, replacing walls that retain the soil of RPAs normally requires some limited excavation back into the exposed soil face to provide a working space of at least 10-20cm behind the inside wall face. This should be done carefully and limited to no more than required to construct the new wall. Any roots found should be dealt with as set out in 5.2 above. Once the wall is completed, any voids behind it should be filled with good quality top soil and firmed into place but not over compacted. Specific difficulties with large roots that emerge during the course of the construction should be referred to the supervising officer.

Part Four: Appendices

Appendix 1 –Tree data

Key

Tree No: This number identifies the trees and corresponds with the provided plans (and tree tags). Trees are prefixed T, groups G and hedges H. Where stumps are identified the suffix S will be used.

Species: The common name is given for each tree

Ht: Height estimated in metres

Stem Diam: Taken at 1.5m above ground level and recorded in millimetres.
= estimated stem diameter.

No of stems: Number of stems below 1.5m.

Crown Spread: Estimated in metres and given at cardinal compass points.

Crown ht: (Crown Height) Taken where it is anticipated that crown height may pose a constraint. Height may be given at a cardinal compass point e.g. 3-N for individual significant branch or 3 for base of crown.

Life Stage: This refers to the age of the individual tree relating to the average life expectancy of each species in a similar environment.

Y	-	First third of life (young)
MA	-	Second third of life (middle aged)
M	-	Final third of life (mature)
OM	-	Past usually expected life span (over mature)
V	-	Tree noted for its cultural, aesthetic or biological value (Veteran)

General observations: Particularly of structural and/or physiological condition, and/or preliminary management recommendations.

Ret cat: (Retention Category) Each tree is given a retention category according to BS5837:2012.

ERC: (Estimated remaining contribution)

<10 years
10+
20+
40+

Tree Survey Schedule (Table 3)

Note: Trees to be removed in red text, A & B category trees with green highlighting and C & U trees with blue highlighting

Tree No:	Species: (Common Name)	Ht.: (m)	Stem Diam: (mm)	No of stems:	Crown Spread: (m)				Crown ht:	Life Stage:	General Observations:	Ret Cat:	ERC:
					N	E	S	W					
T1	London Plane	15	600	1	9	9	7	5	3	M	Previous heavy reductions	A1	40+
T2	London Plane	15	650	1	9	5	7	5	3	M	Previous heavy reductions	A1	40+
T3	London Plane	15	600	1	9	5	7	7	3	M	Previous heavy reductions	A1	40+
T4	London Plane	13	600	1	8	7	4	7	3	M	Previous heavy reductions	A1	40+
T5	London Plane	13	550	1	5	10	9	8	3	M	Previous heavy reductions	A1	40+

Appendix 2: Plans

Figure 1: Tree Constraints Plan
Figure 2: Tree Protection Plan

Figure 1: Tree Constraints Plan

Notes:

KEY

Tree location, crown dimensions and retention category according to BS 5837: 2012 - Category A.

Root Protection Area (RPA) according to BS 5837: 2012.

Indicative shade path cast by surveyed trees.

North

PLENDER STREET

NORBITON HOUSE

KINGSTON HOUSE

St. PANCRAS
COMMUNITY CENTRE

CAMDEN STREET

CAMDEN TOWN
SPORTS PITCH

SURGERY

BAYHAM PLACE

RAINHAM HOUSE

SHAM HOUSE

ME

T1 T2 T3 T4 T5

ST02 ST04 ST05 ST06 ST08 ST09 ST11 ST12 ST13 ST14

RPA

Rev.	Description.	Date.

Client: MACE

Job: Plender / Camden Street, London

Drawing Title: Tree Constraints Plan

Client Logo:

HALLWOOD ASSOCIATES

34 Victoria Road
Maldon
Essex.
CM9 5HF
t: 01621 874694
m: 07946 938906
e: enquiries@hallwoodassociates.com

Date:	Plot Date:
08.01.13	08.10.13
Scale: 1:200 @ A1	CAD File: 1190-001-TCP

Drawing Number: 1190-001-TCP

Rev. 0

Figure 2: Tree Protection Plan

Notes:

KEY

Tree location, crown dimensions and retention category according to BS 5837: 2012 - Category A.

Indicative line of Tree Protection - see Hallwood Associates AIA.

PLENDER STREET SITE B

T1 RPZ

T2 RPZ

T3 RPZ

T4 RPZ

T5 RPZ

Plende

Landrake

Garages

Norbiton House

Kingston House

Camden Studios

Camden Street

CAMDEN STREET

Merivale

New open space

Sports Pitches (Re-positioned)

Food garden

North

Rev.	Description.	Date.

Client: MACE

Job: Plender / Camden Street, London

Drawing Title: Tree Protection Plan

Client Logo:

HALLWOOD ASSOCIATES

34 Victoria Road
Maldon
Essex.
CM9 5HF
t: 01621 874594
m: 07946 938906
e: enquiries@hallwoodassociates.com

Date:	Plot Date:
18.03.13	18.03.13
Scale: 1:200 @ A1	CAD File: 1190-001-TPP

Drawing Number: 1190-001-TPP

Rev. 0