gmem.org.uk

Highgate and Newtown Community Centre, Bertram Street, Camden, London, N19 5DQ

Arboricultural Method Statement (AMS)

July 2019

(_V3)

Greenman Environmental Management Ltd.
www.gmem.org.uk
Heather Farm, Landsdown Lane, Bath, BA1 4NA

gmem.org.uk

Client Name:	Mc Bains
Document Reference:	[HNCC_DAMS_SM_JP_JI_30052019v3.docx]
Project Number:	[#12365CPEF]

Quality Assurance – Approval Status

This document has been prepared and checked in accordance with GMEM policy

Issue No.	Date	Checked by	Prepared by	Approved By
03	18th July 2019	Simon Martin	Jon Price	Gary Rowlands

Comments

Disclaimer

This report has been prepared by Greenman Environmental Management, with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporation of our General Terms and Condition of Business and taking account of the resources devoted to us by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at its own risk.

TABLE OF CONTENTS

1.0 INTRODUCTION

1.0.1 This Detailed Arboricultural Method Statement (DAMS) has been prepared following instructions from Carlos Gonzales of Mc Bains and is intended to be supplied to and agreed by Camden Council Planning Authority to discharge planning condition 17 attached to planning permission reference 2018/5774/P for the redevelopment of the Highgate and Newtown Community Centre, Bertram Street, Camden, N19 5DQ.

1.0.2 This DAMS has been prepared following the preparation of an Arboricultural Impact Assessment Ref: RCKa_HNCC_AIA_18042016_JP_v4 for the proposed development and should be read in conjunction with that document. Copies of this AMS will be available for inspection on site at all times and will form the basis of the management of all works relating to the trees on the site following commencement of the project.

1.1 GENERAL INFORMATION – Site Location

1.1.1

OS X (Eastings)	528795
OS Y (Northings)	186508
Nearest Post Code	N19 5DQ
Lat (WGS84)	N51:33:46 (51.562752)
Long (WGS84)	W0:08:36 (-0.143328)
Lat,Long	51.562752,-0.143328
Nat Grid	TQ287865 / TQ287958650

Figure 1: Site arrowed © www.streetmap.co.uk 2019

1.1.2 **CONTACT DETAILS**

Contact	Company	Contact Details
Project Arboriculturalist	**Jonathon Price** Greenman Environmental Management Ltd.	01225 466663 07801 209257 www.gmem.org.uk j.price@gmem.org.uk
Project Architects	**RcKA**	Third Floor, 29 – 31 Cowper St, London EC2A 4AT 020 7831 7002 https://rcka.co.uk/
Landscape Architects	**Camlins**	New Dolanog House, Severn Rd, Welshpool SY21 7AP 01938 554886 http://www.camlins.com/
Project Manager	**Carlos Gonzales McBains**	26 Finsbury Square, London EC2A 1DS T +44(0)20 7786 7900 M +447984313089 cgonzalez@mcbains.co.uk
Local Planning Authority	**Camden Council** **Tree Officer: Nick Bell**	www.camden.gov.uk nick.bell@camden.gov.uk
Planning Consultants	**Lewis Westhoff** **Iceni Projects**	020 3640 1024 07557 678 587 lwesthoff@iceniprojects.com
Critical Subcontractor (1)	T.b.c	T.b.c
Critical Subcontractor (2)	T.b.c	T.b.c

1.2 TREE SURVEY INFORMATION

1.2.1 An initial site visit was undertaken on the 2nd April 2016 and 30th May 2019 by GEM. The survey was conducted in accordance with BS5837: 2012 Trees in Relation to Design, Demolition and Construction – Recommendations (**BS5837: 2012** hereafter) from ground level and employed the Visual Tree Assessment method (Mattheck and Breloer, 1994). The survey assessed the arboricultural, landscape and cultural (conservation) value of the trees on and adjacent to the site in order to identify the arboricultural constraints presented by the trees. The original AIA survey report can be viewed on the Camden Council online planning portal[1].

Summary of trees included in the survey:

Total number of individual trees identified	**5 (2016) 6 (2019)**
Total number of tree groups identified	**0**

1.2.3 Statutory Constraints: Contact has been made with Camden Council via their on-line interactive service and it has been determined that the site lies within the limits of Dartmouth Park Conservation Area. No records of Tree Preservation Orders were found, however this should be confirmed with them prior to any tree removal/tree works.

1.3 THE PROPOSAL

1.3.1 The proposal are described in detail in *1145 Highate and Newtown Community Centre and Fresh Academy – Design and Access Statement – November 2016 Planning Scheme*. This document is specifically compiled to address Condition 17 of the permission, which state[2]:

17. Tree protection
Prior to the commencement of any works, details demonstrating how trees to be retained both on and off site 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" and should include details of appropriate working processes in the vicinity of trees, a

[1] Search for planning reference *2018/5774/P* on: https://contact.camden.gov.uk/planning-search/ for details on the detailed Arboricultural Assessment Report.

[2] Search for planning reference *2016/6088/P* on: https://contact.camden.gov.uk/planning-search/ for details on the planning history for this scheme.

tree protection plan and details of an auditable system of site monitoring. 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.

Reason: In order to ensure the development undertakes reasonable measures to take account of trees and biodiversity in accordance with Camden Local Plan policies A2 and A3.

1.4 TREE RETENTION AND REMOVALS

1.4.1 There are 5 trees which require removal in order to facilitate the proposals. However, these currently form part of the discussions in party wall negotiations with adjacent freeholders (T1a, Morus sp. T2; Sycamore, T3 and T4; 2 x Box Elder and T5; *Prunus* sp.) The Project Managers propose that demolition requirements at the detailed/site implementation stage *may not* preclude the safe retention of these trees and that mitigation/compensation discussions will be conducted by the project managers and party wall negotiators. This group of garden trees is of moderate incidental quality (in BS5837-2012 terms); see RCKa_HNCC_AIA_18042016_JP_v4 for details. Mitigation (though appropriate agreement and discussions) will deliver net arboricultural and ecological benefits to those freeholders and wider community impacted by the loss of these trees to this proposal.

The main focus of this document relates to T1 a mature London Plane located in the gardens of adjacent off-site residential flats to the south west of the proposal off Croftdown Road, next to a public right of way (footpath) which is proposed for vehicular and service access into the site). The tree comprises a typically managed (cyclically pollarded) mature London Plane (BS5837 Category B1) The intention is to retain this tree as an important delivery mechanism for amenity, ecological functionality and other ecosystem services. While it is set back from Croftdown Road and does not form part of the wider tree-scape of the road (see plate 1 below); it is a good specimen and will be retained unless further detailed ground investigations provide information that this is not possible, at which point a detailed replacement and landscape mitigation strategy will be triggered. Rooting architecture is currently unknown and London Plane are known to be adaptable to a range of and unpredictable disturbed substrates. The proposal requirements for service installation

(gas and electric) and vehicular and pedestrian access; will require inevitable significant disturbance within the nominal RPA of T1.

The mechanisms for the initial stages of ground investigation and potential mitigation are discussed and illustrated below.

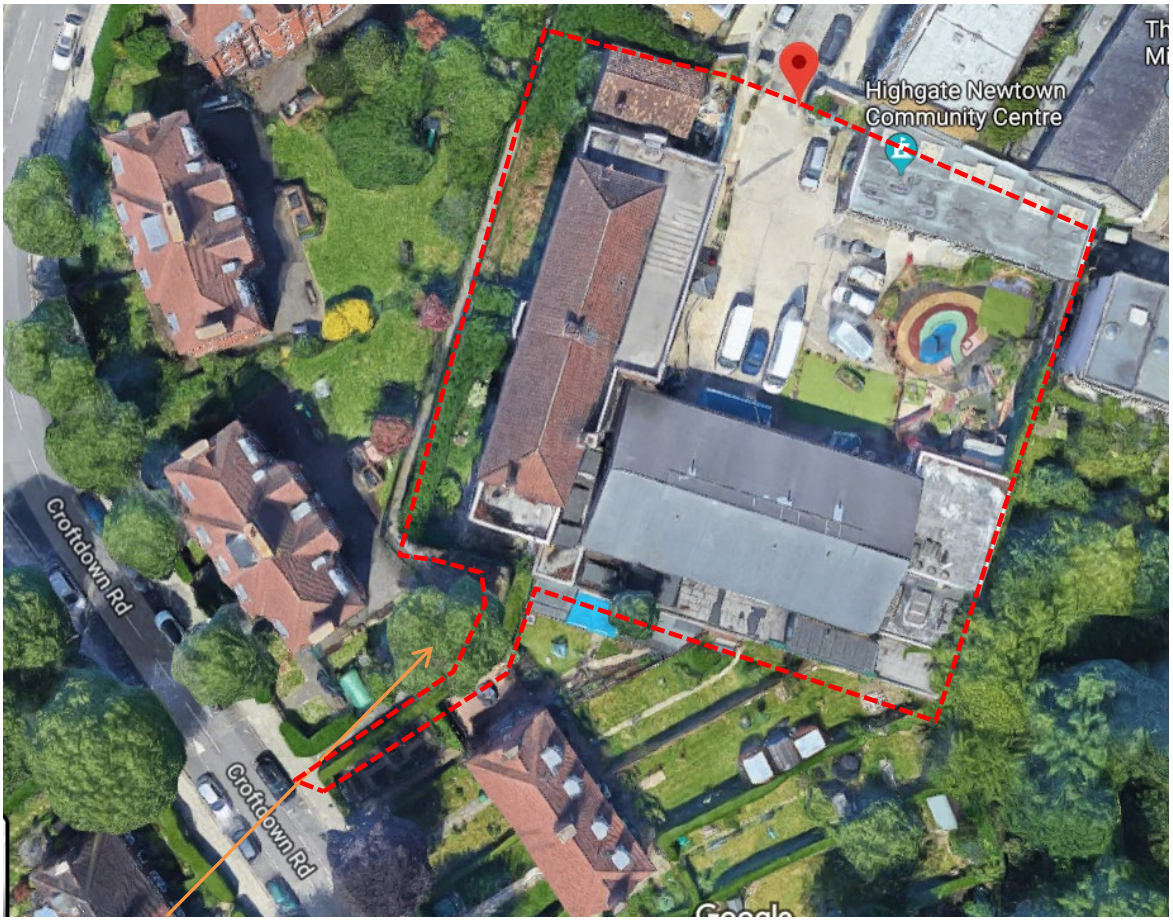


Figure 2: T1 Location arrowed (orange), approximate access and site extents dashed polygonised (red). © www.google.co.uk 2019

Figure 3*:* Extract from 2016 Arboricultural Implications Report showing extent of proposed access and location of T1.

Plate 1: Typical tree-scape of Croftdown Road, view north.

Plate 2: View east off Croftdown Road at T1 (and T1a[3]), footpath to be widened to facilitate vehicular and service access.

Plate 3: Detail of ground conditions of footpath adjacent, south of T1. Palisade to be removed, services installed and ground remade to suit access purposes.

[3] T1a comprises a young *Morus* sp. which was out with the scope of the BS5837 survey in 2016 and re-assessed in June 2019. T1a will be required to be removed for the location of a substation

Plate 4: View north, T1 off plate to left, showing typicality of ground conditions proposed for site and service access.

1.5 TREE PROTECTION BARRIERS

1.5.1 Following tree removals, pruning and establishment of retention mechanisms, protective barriers shall be installed in the positions and to the specification shown on a Construction Management Plan (CMP) in accordance with Figure 2 or 3 of BS5837: 2012 Other acceptable fencing/hoarding or boundary treatment ***must*** have the same performance specification as BS5837-2012 *at a minimum*.

1.5.2 The protective barriers will remain in place for the duration of the development works and will serve to prevent plant from accessing the RPA of retained trees, the area behind the barriers will be considered a Construction Exclusion Zone (CEZ). The majority of fencing will be the heavy duty BS5837: 2012 6.2.2.3 Figure 2 specification to safeguard tree stock against the likely pressures of the limited construction space onsite.

1.5.4 Contractors undertaking soft landscaping works must also comply with this Arboricultural Method Statement. They must not park, drive vehicles or store

materials within the RPA of any trees without appropriate ground protection and discussion with the arboricultural consultant.

1.6 TREE PROTECTION WITHIN ROOT PROTECTION AREA (RPA)

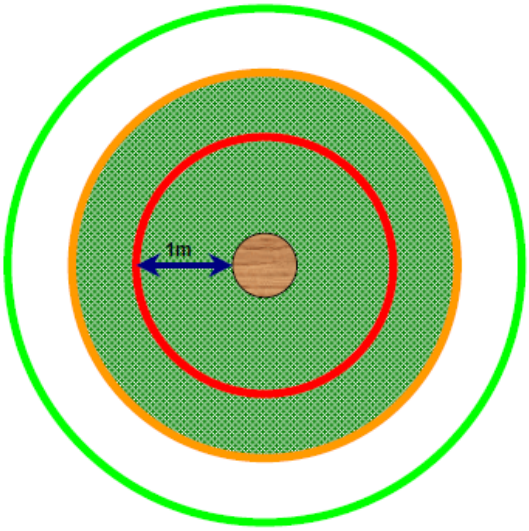
1.6.1 As the scheme has an existing planning permission; the over-riding guidance in relation to the proposals, in a tiered approach to tree protection are; **1)** the recommendations in this AMS, **2)** BS5837-2012 (to be interpreted by an arboricultural consultant or arboricultural clerk of works <ACoW QCF Level 4 or Level 5 or higher[4]>) and **3)** National Joint Utilities Group (NJUG) document for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Volume 4 Issue 2)[5]. Of the last reference; the following illustration summarises *de minimis* the requirements of the NJUG document:

[4] https://www.accreditedqualifications.org.uk/qualifications-and-credit-framework-qcf.html
[5] http://streetworks.org.uk/wp-content/uploads/V4-Trees-Issue-2-16-11-2007.pdf

The National Joint Utilities Group

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

FIGURE 1 – Tree Protection Zone



Key

Trunk of tree

Canopy or branch spread

PROHIBITED ZONE – 1m from trunk. Excavations of any kind must not be undertaken within this zone unless full consultation with the local authority Tree Officer is undertaken. Materials, plant and spoil must not be stored within this zone.

PRECAUTIONARY ZONE – 4 x tree circumference. Where excavations must be undertaken within this zone the use of mechanical excavation plant should be prohibited. Precautions should be undertaken to protect any exposed roots. Materials, plant and spoil should not be stored within this zone. Consult with the local authority Tree Officer if in any doubt.

PERMITTED ZONE – outside of the precautionary zone. Excavation works may be undertaken within this zone, however caution must be applied and the use of mechanical plant limited. Any exposed roots should be protected.

Figure 4: Extract from NJUG Volume 4: National Joint Utilities Group (NJUG) document for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Volume 4 Issue 2)[6].

[6] http://streetworks.org.uk/wp-content/uploads/V4-Trees-Issue-2-16-11-2007.pdf

The following sequence of actions will take place:

1.6.2 **Activity 1**: **Site set up and ground investigation.**

1.6.3 Prior to the demolition phase(s) specified areas adjacent to T1 will require supervision by an Arboricultural Clerk of Works (ACOW) and precautionary approach ground investigation to establish a precise (or as close to) understanding of below ground condition and actual rooting architecture. These areas have structures that have potential to have hindered root progression (i.e. services, surfaces, fence and wall foundations) resulting in the accumulation of rooting mass or are located in the close vicinity of the RPA.

1.6.4 Ground investigation will be in the form of hand-tool digging, hydraulic tools, air-spading (compressed air use). These will be compared to the sketch service requirements for the mechanical, engineering and plumbing (MEP) sketches provided by McBains, illustrated in Figure 4 below:

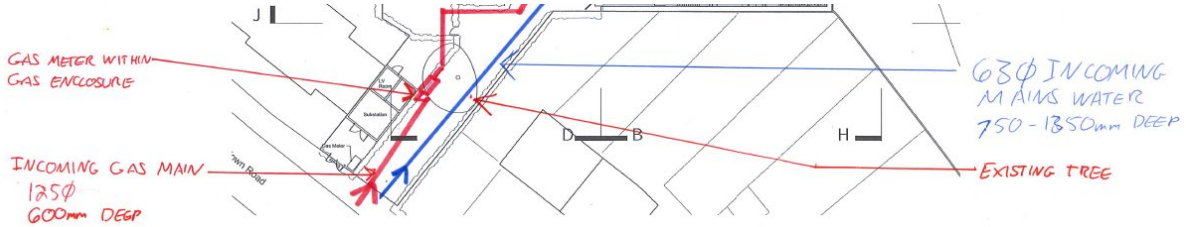


Figure 2: Extract from sketch drawing, Proposed gas services: 20190305083621942.pdf. T1 arrowed. (McBains 218)

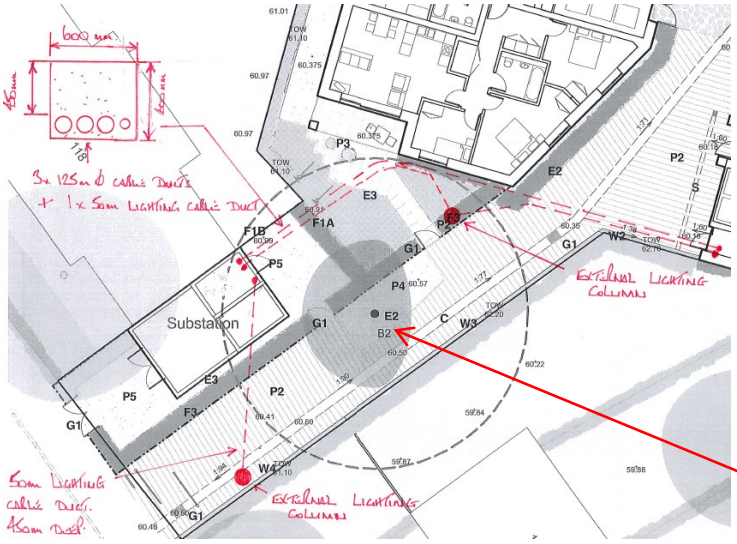


Figure 3: Extract from sketch drawing: Proposed electrical services around existing trees. T1 arrowed (Mc Bains 2018)

1.6.5 **Activity 2**: **Assessing impacts based on results of Activity 1.**

1.6.6 The trial pits/ground breaking adjacent T1 (T1a to be removed) will be undertaken using hand-tools air lance and/or small excavator working within a safe hoarded/fenced work area under supervision of the ACoW (assumed to be under an approved footpath PROW closure) from outside the crown clearance of the tree and 'reaching in' to the work area in order to understand below ground rooting masses from in this area. The pits will be excavated on the line of the required works and will be approximately and *ideally* 4500mm in length, 300mm+ in width and 700mm in depth (if possible). All findings will be recorded (written and illustrated/photographed) and reviewed and reported on by the appointed arboricultural consultant and reviewed, if required by the LPA tree officer.

1.6.7 Following completion of the report generated from the ground investigations, a design team meeting will convene as soon as practicable, together with the appointed arboricultural consultant, where precise details of the three dimensional requirements of the proposed works will be assessed against the requirements of the MEP and vehicle access in relation to T1 and T1a.

1.6.8 Following this review of findings, the project arboriculturalist will confirm if works can proceed with the trees ***retained***. (If they cannot, a course of action will be agreed between arboriculturalist, LPA and other stakeholders). If works procced with the trees retained excavations in this area will be supervised by an ACOW at all times, the ACOW will oversee the access in to the CEZ. Mechanical excavators may 'reach in' to undertake excavations but must not be sited in the RPA. Excavations must be undertaken incrementally and carefully under the close supervision of the ACOW and banksman. Excavations must not go beyond the trial pit locations. The ACOW must oversee the re-location of protection measures once works are completed in this area. Root pruning will follow BS5837-2012.

1.6.9 **Activity 3: Retention of T1.**

1.6.10 If the outcomes of Activity 2 indicate that the trees ***can*** be retained then steps laid out in 1.6.11 above will be followed. The technical specifications required for this will include:

1. Installation of services by hand/small tool under supervision of an ACoW.

2. Amelioration/improvement of the retained rhizosphere (introduction of improved drainage, rooting medium <structural soils or other media>, watering systems if required).

3. Stem protection; short term measures (E.g: hessian and chestnut paling stem wrapping with non invasive fixings to 2m from ground level and long term measures (E.g. 'Estate' style fabricated steel stem protection/guard that protects from vehicle strikes)

4. Root compaction/restriction/protection through a bridging, pile/beam or load bearing solution to carry the access road and footpath, potentially incorporating SuDS[7] detail input to improve water supply and drought resilience.[8]

5. Monitoring regime: i.e. illustrated/reported re-survey with written summary to Camden Council every 18 months for 5 intervals to monitor physiological health (contingency plan to be agreed in accordance with Condition 20 of the planning permission)

1.6.11 **Activity 4: Potential removal of T1.**

1.6.12 If the outcomes of Activity 2 above indicate that the trees ***cannot*** be safely retained given the details required to build the permitted scheme then the following steps will be followed:

[7] https://www.bgs.ac.uk/research/engineeringGeology/urbanGeoscience/suds/what.html
[8] https://www.greenblue.com/gb/ http://www.permavoid.co.uk/ https://greengridsystems.com/ http://www.geosyn.co.uk/product/cellweb-tree-root-protection (sample of existing systems only, no specific recommendation is made by GMEM or the design team at this time)

1. A design team meeting will convene and generate an action plan together with list of consultees and steps to follow in order to present the transparent findings of Activity 1 to the relevant stakeholders (LPA, local residents, volunteer groups etc.)

2. A compensatory/mitigation plan of replacement tree planting will be compiled in discussions with the design team, led by the project landscape architects in consultation with stakeholder groups including Camden Council and advised by the project arboriculturalist. Replacement trees, their size species and precise location will form the outcome of this step. Site meetings and stakeholder discussions will be carried out if required.

ARBORICULTURAL WORKS

1.7.1 To be established and reported on following ground investigations described above..

1.8 ADDITIONAL PRECAUTIONS OUTSIDE OF THE CONSTRUCTION EXCLUSION ZONE

1.8.1 No materials that are likely to have an adverse effect on tree health will be stored or discharged within 10 metres of the trunk of a tree that is to be retained. Consideration will be given to the implications of storing materials upslope of this exclusion zone in order to avoid the risk of potential spillages leaching down-slope and contaminating the Root Protection Area of a tree. Such materials include Oil, Bitumen and Cement.

1.8.2 Fires will not take place on site.

1.8.3 Care must be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Any transit or traverse of plant in proximity to retained trees should be conducted under the supervision of a banksman.

1.8.4 No equipment, machinery, structure, notice boards, telephone cables or other services shall be attached to or supported by a retained tree.

1.8.5 Drainage will be installed and connected outside of the RPA of retained trees, largely using the existing connections off existing. This has been enabled after consultation with design teams and the modification of pond sizes. Please note existing underground drainage exists below the major tree groupings; in event that unanticipated works are required in these areas the advice from the arboricultural consultant and the LPA must be sought.

1.9 ACCESS FOR CONSTRUCTION WORKS

1.9.1 **Plant and machinery**: Areas for the safe storage of material, plant and machinery during all demolition and construction phases will be sited outside of RPA within the site itself or with suitable ground, stem and crown protection.

1.9.2 Details of the type and number of machines and plant to be used on the site will be submitted in writing to the Local Planning Authority prior to the commencement of any works on site.

1.9.3 **Site huts and contractors' compound**: Will always be sited outside of tree/hedgerow protection fencing within the site itself and assumed be 'built out' once tree protection measures are established/secured. Due to the size of the site and limited construction space available the location of site huts and compounds are likely to change frequently, therefore the details of anticipated locations must submitted to the appointed LPA for approval.

2 SUPERVISION AND MONITORING

2.0.1 Prior to all construction works commencing a 'Tree Champion' will be appointed. This person shall be a person that has a regular and consistent site presence throughout construction (e.g. site manager). This person shall liaise with the arboricultural clerk of works (ACoW) and appointed arboricultural consultant as required. This person will be responsible for onsite compliance to this DAMS, in particular ensuring the physical tree protection measures remain in place and maintaining the general good management of tree health at all times throughout construction

2.0.2 The 'Tree Champion' will assume the monitoring of all tree protection measures and compliance with this Arboricultural Method Statement.

2.0.3 The project manager must instruct an arboriculturalist to visit site (pre-construction) to confirm that tree protection measures have been implemented in accordance with this AMS, a certificate of compliance will be issued to the client and the Local Planning Authority following the visit.

2.0.4 The appointed arboricultural consultant must undertake regular site visits at 4 week intervals for the duration of the project to monitor tree protection measures are maintained/upheld, a record of the visits must be made and submitted to the LPA.

2.1 CONTINGENCY PLANS

2.1.1 In the event of unforeseen incidents occurring, that may adversely affect or threaten the welfare or security of the trees, the resident Site Agent/Manager shall, at the earliest opportunity and not more than one working day following the incident, inform an arboricultural consultant who will decide on the appropriate course of action. A record of any emergency incidents and works shall be maintained by the project manager.

2.1.2 Incidents which may merit such contingency plans include Accidental / unauthorised damage to the limbs, roots or trunk of trees, the spillage of chemicals within or adjacent to a Root Protection Area or the un-scheduled breaching of a tree protective barrier or Construction Exclusion Zone

2.1.3 All works un-programmed works within RPA's will require a method statement to be produced by the contractor and submitted for approval to the LPA by an Arboricultural Consultant at least 2 weeks (10 working days) prior to the commencement of the works

2.2 PROGRAMME OF WORKS

PRE-DEVELOPMENT		
01	Pre-development site meeting	Pre-commencement site meeting between appointed arboricultural consultant and site manager to discuss: Tree removals and arboricultural works Position and method of installation of tree protection barriers

		Position and method of installation of ground and stem protection Construction phases whereby the supervision of an ACOW or an arboricultural consultant are required to undertake works. The sequencing of works in the specified activities with 1.6.
02	Tree removals and arboricultural works	Removal of trees (as scheduled following negotiations of the party wall team) and arboricultural works undertaken. Tree work to be carried out by certified tree work contractor in accordance with BS3998: 2010 Treework – Recommendations.
03	Installation of tree protection	Installation of tree protection in the positions detailed on the Tree Protection Plan. Implementation of Activities 1 – 4 above. Arboricultural consultant to issue certificate of compliance to AMS (pre-occupation).

DURING DEVELOPMENT		
04	Development works	Main construction phase for all areas. Tree champion to initiate contact with arboricultural consultant and or/ACOW as required. Arboricultural supervision undertaken (once every 2 months) with records submitted to LPA.
06	Review and assessment of tree protection	GEM to review any proposed changes to tree protection, or requirements for additional tree pruning or tree removals, only on request by the site/project manager.

POST DEVELOPMENT		
07	Landscape works	Implementation of planting mitigation measures as detailed within the Landscape Strategy.
08	Removal of tree protection	Removal of the tree protection fencing and ground protection.
09	Monitoring on 18 month cycles of retained trees	Reporting of results.

2.3 LEGISLATION AND GUIDANCE

2.3.1 Town & Country Planning Act 1990

2.3.2 Town & Country Planning (Trees) Regulations 1999

2.3.3 Construction (Design & Management) Regulations 1994

2.3.4 BS5837: 2012 Trees in relation to design, demolition and construction – Recommendations

2.3.5 BS3998: 2010 Tree work – Recommendations

2.3.6 National Joint Utilities Group (NJUG) Guidelines for installing and maintaining services close to trees (NJUG Vol 4)

2.3.7 The Wildlife and Countryside Act 1981

2.3.8 The Conservation of Habitats and Species Regulations 2010

2.3.9 Countryside and Rights of Way Act 2000

2.3.10 Occupiers Liability Act 1957 and 1984

APPENDIX A: TREE SURVEY SCHEDULE AND KEY

TREE SCHEDULE Highate and Newtown Community Centre, Bertram Street, London

Client: RCKa Architects

Surveyors: Jonathon Price, Merlyn Woodhouse

Date of Survey: March_2016

Tag Number	Single or Group	Number in Group	Tree Species	Height (m)	Number of Stems	Stem or Base Ø (mm)	Crown Clearance (m)	N - Radius (m)	S - Radius (m)	E - Radius (m)	W - Radius (m)	Age Class	Physiological Condition	ULE (Years)	Tree Structural Condition Site Notes Long-Term Recommendations	Immediate Recommendations	Category	Root Protection Area (m^2)
1	t		*London Plane*	12	1	700	4	4	4	2	4	M	Good	40+	Good, well historically managed Off site treeLong-term Management:None specified during Tree Survey.	No works recommended at present.	**B1**	221.70
2	t		*Sycamore*	6	1	400	6	1	1	1	1	M	Poor	10+	Fair, tree heavily reduced, v.few leaf bearing branches Off site tree, survey made with no view of lower stem from approx 10mLong-term Management:None specified during Tree Survey.	Tree to be removed	**C2**	72.39
3	t		*Box Elder*	7	1	360	3	4	3	2	2	SM	Fair	20+	Fair Off site treeLong-term Management:None specified during Tree Survey.	No works recommended at present.	**B1**	58.64
4	t		*Box Elder*	8	1	420	1	2	2	2	1	SM	Fair	10+	Tree topped at 3m, woodpecker holes near top of stem, no significant branches on tree Off site treeLong-term Management:None specified during Tree Survey.	No works recommended at present.	**C2**	79.81
5	t		*Plum*	7	2	170	2	3	3	4	1	SM	Good	20+	Lean to east Off site treeLong-term Management:None specified during Tree Survey.	No works recommended at present.	**B1**	9.08
T1a	t		*Morus* sp.	4	1	**120**	2	2	2	2	2	Y	G	20_40	Partially suppressed by T1	Fell to construct sub-station	C1	/

Explanatory Notes can be found at rear of table.

Tree Schedule - KEY

Tree Number
Trees are tagged with metal tags where feasible. Where this has not been feasible, or desirable tree numbers relate to those marked on the Tree Constraints Plan and Tree Protection Plan drawings.

Single or Group
One tree in a group may be tagged to identify trees of a relatively uniform arboricultural or landscape feature.

Number in Group
Number of trees (irrespective of species) within a group.

Species
Scientific name. Groups – scientific names together with number of this species within group.

Height (metres)
All heights are estimated. Where feasible height estimation is carried out with the aid of a clinometer or similar device.

Number of Stems
1 indicates single stem, >1 indicates multi-stemmed tree.

Stem or base diameter (metres)
Stems are measured in accordance with BS5837:2005. Single stem diameters are measured at 1.5m with a diameter tape or callipers. Multi-stemmed trees are measured at above root flare. All measurements are rounded down to the nearest cm. All measurements in bold are estimates either due to restricted access or climbing plant growth about the stem.

Crown Clearance (metres)
Distance above ground level of crown periphery to inform access beneath crowns.

Crown Spread Radius – N, S, E, W (metres)
The crown radius from bole to crown limit identified at four cardinal points. This will allow presentation of above ground constraints on Tree Constraints Plan. Measurements are approximate and depend on clear access about crown.

Age Class
Young, Semi-Mature, Mature, Ancient, Veteran.

Physiological Condition
Good, Fair, Poor, Dead.

ULE (Years)
Useful Life Expectancy. Anticipated future contribution to amenity.

Notes and Recommendations
Tree structural condition. Site notes/description. Long term management recommendations.

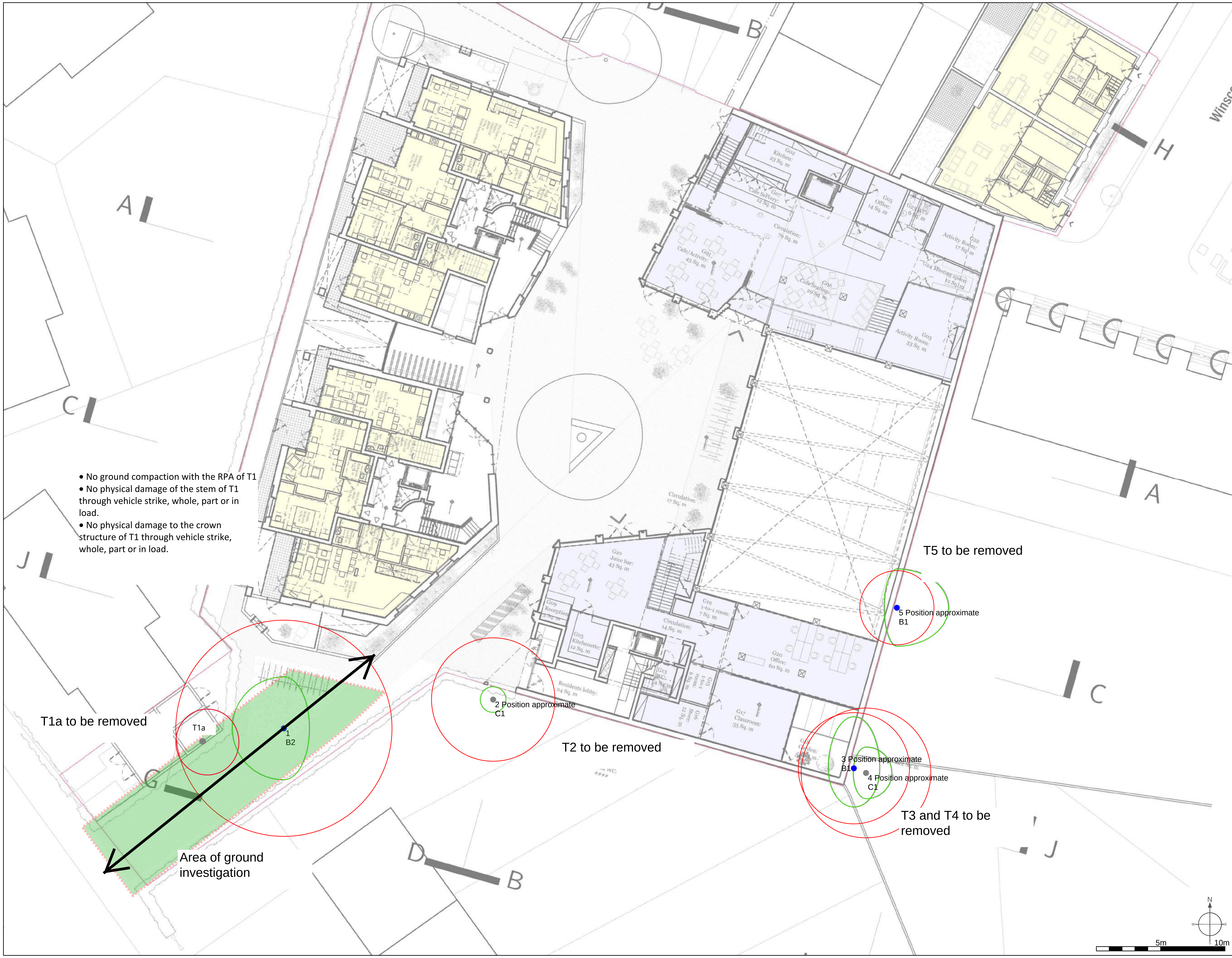
Immediate Recommendations
Remedial tree works required to manage risks requiring attention within six months.

Category
Category as defined within BS5837:2005. Category A-C: trees identified for retention. Category R: trees identified for removal

Table 1 **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 the 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.*			See Table 2
	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	Trees 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 arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
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	See Table 2
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	See Table 2

APPENDIX B: TREE PROTECTION PLAN & BARRIERS SPECIFICATION



Symbol Guide

Category — Crown Spread — Tree Number — Category — Root Protection Area

BS5837:2012 - Tree Category

Category A Trees High Quality	Category C Trees Low Quality
Category B Trees Moderate Quality	Category U Trees Poor Quality/Remove

NOTE: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

GREENMAN
ENVIRONMENTAL MANAGEMENT
EST. 1994

Project Name:
Highgate and Newton Community Centre, Camden, London

Drawing Title:
Arboricultural Impact Assessment

Drawing Number:
160901-HNCC-AIA-Rev B-LI&AM

Client:
RCKa Architects

Agent:
-

Date:
September 2016

Scale:
1:200 @ A2

APPENDIX C: EXAMPLE OF SITE REPORTING FORM

GREENMAN
Environmental Mangement

Heather Farm . Lansdown Lane . Bath BA1 4NA T: 01225 466663 W: gmem.org.uk

Ref: ACowSF_052016_JP_v1

Arboricultural Supervision and/or Arboricultural Works Supervision or Completion Form

Site Name:

Date:
Supervisor Name: **Planning reference:**

Task description:

Personnel:

Summary:

Further Actions:

Signed: **Date:**