Arboricultural and Planning Impact Assessment Report: Flat 1, 18 Lyndhurst Road, London, NW3 5NL

Report Date: 28th April 2015
Revision 1: 14th September 2015

Ref: ASH/PW/0428:15

Revised Text:
The revised section of text in the report is shown in Blue to make it easier for the reader to assess the changes to the content of the document.

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Arboricultural Report

Location: Flat 1, 18 Lyndhurst Road, London, NW3 5NL
Ref: ASH/PW/4028:15
Client: Mr & Mrs Nell
Report Date: 28th April 2015 Rev 1: 14th September 2105
Date of Inspection: Wednesday 22nd April 2015
Trial Pit Inspection: n/a
Prepared by: Philip Wood BSc(Hons)LAM.

Please note that abbreviations introduced in [Square brackets] *may be used throughout the report.*

Instructions

Issued by – Andrew Hodgkinson on behalf of Hodgkinson Design

TERMS OF REFERENCE – Ashmore Arboricultural Services Ltd. [AAS] were instructed to survey the subject trees within the garden area of the site and the adjoining gardens close to the proposed changes to the property, in order to assess their general condition and to provide a planning impact and integration statement for the extension, set at ground and lower ground floor level, including re-configuration of the existing building and conversion of the detached double garage into a playroom. The ground floor level extension will open out onto a terrace area set above the room below and newly landscaped garden via a flight of stairs, with enhanced planting, but the garden will broadly remain at its current level. The property is set within the Fitzjohns Conservation Area within The London Borough of Camden, North London. The Local Authority give guidance related to development near trees and where there may be some tree related impact, the proposed development should be assessed by an arboricultural consultant to safeguard the long term health and well-being of the trees on the site or adjacent to the site for the future sustainability of the local area. Also where trees are affected or require removal by a proposed scheme the impact should be assessed in accordance with the current standard.

Executive Summary

The proposal for the site is to re-configure the existing property and create a 2 storey extension set at ground, lower ground floor level and garage conversion opening onto a paved terrace area with enhanced soft landscape planting. There is no proposal to lower or significantly alter the level of the retained garden other than a small tapering of the garden down to the edge of the rear extension with the remaining work being to enhance the garden with the addition of new hard and soft landscaping including new tree planting. The proposed scheme would require the removal of only two small trees a Laburnum (T1) and a Japanese Flowering Cherry (T3), which are both of limited life expectancy and amenity contribution. Also two more trees are recommended for removal; an almost dead Holly (T5) and small weak Magnolia (T6) which would aid the implementation of the landscape scheme proposed, these would be removed and replaced with quality replacements as detailed in the indicative landscape plan. The Hawthorn specimen (T4) will remain, while the remaining trees on the adjacent site would be able to be retained and protected. Even without site investigation excavations and a site specific root protection area assessment, it has been accessed from the basic radial root protection area assessment that it is considered to be acceptable and would be possible to construct the proposed scheme without excessive or significant long term detrimental impact to the retained Ash (T2), Hawthorn (T4) and Magnolia (T7). Tree protection fencing would be required for the retained tree on site. Therefore, the trees identified for retention on and adjacent to the site that would require protection in accordance with industry best practice and BS 5837: 2012 – Trees in relation to design, demolition and construction –recommendations, in order to ensure its longevity. As there are no significant level changes proposed to the retained garden, beyond the small area of tapering of soil adjacent to the rear windows, the retained trees in the garden and the neighbouring garden can be adequately protected and should be unaffected as long as the tree protection measures are followed unless the proposed scheme changes and this would need to be re-assessed. Given that: the trees on the neighbouring land should be unaffected by the proposed scheme; The most significant trees on adjoining sites the Ash (T2) and the Magnolia (T7) and the less significant Hawthorn (T4) in the rear garden can be retained and protected; the Laburnum (T1), the Japanese Flowering Cherry (T3), the Holly (T5) and Magnolia (T6) which are proposed for removal to facilitate the development and landscaping are small specimens of impaired health with no broader amenity to the conservation area, there should be no tree related reasons for refusing the proposed scheme, subject to an appropriately worded condition being attached to any planning approval, the conditioning of the quality landscape scheme proposed and appropriate establishment maintenance schedule.

Documents Supplied

Hodgkinson Design supplied the following documents:

Supplied prior to site visit:

1. Floor Plans as Existing	Job No: 1547.00	Drawing No: P.003
2. Floor Plans as Proposed	Job No: 1547.00	Drawing No: P.009

1.0 Scope of Survey

1.1 The survey is concerned with the arboricultural aspects of the site only.

1.2 The planning status of the trees was not investigated in detail.

1.3 A qualified and trained Horticulturalist and Arboriculturist undertook the report and site visit and the contents of this report are based on this. Whilst reference may be made to built structures or soils, these are only opinions and confirmation should be obtained from a qualified expert as required.

1.4 Trees in third party properties were surveyed from within the subject property, therefore a detailed assessment was not possible and some (if not all) measurements were estimated.

1.5 Discussions took place between the surveyor and the property owner, briefly, regarding the proposal.

1.6 The trees were inspected on the basis of the Visual Tree Assessment method expounded by Mattheck and Breleor (The body language of tree, DoE booklet Research for Amenity Trees No. 4, 1994)

1.7 The survey was undertaken in accord with British Standard 5837: 2012 Trees in relation to design, demolition and construction – recommendations

1.8 Pruning works will be required to be in accord with British Standard 3998:2010 (Tree work – Recommendations).

1.9 Underground statutory services near to trees will need to be installed in accord with the guidance given in BS5837 together with the National Joint Utilities Group Booklet 4: 2007 Guidelines for the planning, installation and maintenance of utility services in proximity to trees (NJUG4). Smaller subsidiary services shall be routed outside of retained tree(s) root protection area(s), where they are necessary within RPA's they will be subject of a detailed method statement for installation to be submitted to and approved by the Local Planning Authority (LPA) and on-site supervision.

1.10 Where hard surfacing may be required in close proximity to trees, BS5837: 2012, and the principles of Arboricultural Practice Note 12: Through the Trees to Development (AAIS) 2007 (APN12) with regards to "no dig" surfacing will be employed.

1.11 Reference is made to the National House Building Council Standards, 2003, chapter 4.2: Building near trees (NHBC).

1.12 The client's attention is drawn to the responsibilities under the Wildlife and Countryside Act (1981).

2.0 Survey Method

2.1 The survey was conducted from ground level with the aid of binoculars, where required.

2.2 No tissue samples were taken nor was any internal investigation of the subject trees undertaken.

2.3 No soil samples were taken.

2.4 The height of each subject tree was estimated using a clinometer.

2.5 The stem diameters were measured in line with the requirements set out in BS5837:2012 - Trees in relation to design, demolition and construction recommendations.

2.6 The crown spreads were measured with an electronic distometer and/or steel hand held tape measure. Where the crown radius was notably different in any direction this has been noted on the Tree Survey Plan (appendix A), or in the tree table (Appendix B).

2.7 The Root Protection Area [RPA] for each tree is included in the tree table, both as a radius of a circle, and as an area. The Theoretical Radial Root Protection Area is illustrated in **Pink** & The Site Specific Assessed Theoretical Root Protection Area is illustrated in **Orange (where appropriate)**.

2.8 All of the trees that were inspected during the site visit are detailed on the Tree Survey plan at Appendix A. Please note that the attached plans are for indicative purposes only, and that the trees are plotted at approximate positions based on the plan provided by the surveyor. The trees on this plan are categorised and shown in the following format: COLOUR CODING AND RATING OF TREES:
Category A – Trees of high quality with an estimated life expectancy of at least 40yrs. Colour = light **green** trunk or crown outline on plan.

Category B – Trees of moderate quality with an estimated life expectancy of at least 20yrs. Colour = mid **blue** trunk or crown outline on plan.

Category C – Trees of low quality with an estimated life expectancy of at least 10yrs. Colour = uncoloured **grey** trunk or crown outline on plan.

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 10years. Colour = **red** trunk or crown outline on plan.

The crowns and RPA's of those trees that are proposed for removal, or trees where the crown spread is deemed insignificant in relation to the proposed

development are not always shown on the appended plan; however their stem locations are marked for reference.

All references to tree rating are made in accordance with British Standard 5837:2012 Tree in relation to design, demolition and construction – Recommendations Table 1.

3.0 The Site

3.1 The subject property is located on the southern side of Lyndhurst Road in the London Borough of Camden, London. However, the primary trees of interest are located within the front and rear garden of the property with two larger specimens located in the adjoining properties; 17 Lyndhurst Road and 28 Lyndhurst Gardens garden. Only one specimen within the rear garden of 18 Lyndhurst Road is partially visible from the public domain, while both the trees in the adjoining gardens are visible from Lyndhurst Gardens. The property is known to be within the Fitzjohns Conservation Area, however it is unknown if there are any TPO's on the trees in the neighbouring properties, this would need to be verified with the Local Planning Authority [LPA].

3.2 The front garden is extensively paved with hard landscaping with two trees present growing from within very small areas in the paving. The rear garden is extensively hard landscaped with a narrow raised planting bed running around the perimeter which contains the majority of the vegetation in the garden. There is very little vegetation of quality within the rear garden, at present, as it has been allowed to become overgrown in the past. The trees of greatest significance to the broader amenity of the conservation area located within the neighbouring gardens.

3.3 Despite the very built up central London location the garden has a green feel primarily provided by poor quality low level plants and the trees in the neighbouring gardens and beyond, there are no large trees in this garden. The majority of the smaller specimens have little or no amenity value outside of the site or to the broader conservation area. Due to the built up nature of the area it is recognised that trees are a valuable resource in the cityscape creating a much needed green lung for the area and some privacy screening. However, the trees on site proposed for removal are inconsequential, of poor health or are of limited long term amenity beyond their current size and their loss would be negligible. Given the remaining open ground that would be created by removing the poor quality vegetation within the rear garden, this will provide the opportunity for a quality landscape scheme to be implemented, for which it would be possible to plant a number of replacement trees capable of enhancing the longer term amenity of the conservation area beyond that of the existing trees proposed and provide greater replacement canopy cover in the long term, to compensate for the loss of the live specimens proposed for removal.

4.0 The Subject Trees

4.1 The details of the subject trees are set out in the Schedule at Appendix B.

4.2 The overall quality of the tree stock on site is poor; there is only one tree of moderate amenity value with the tree on the adjoining sites are of greater amenity which have had some regular crown management. For the smaller trees on site their broader amenity value is very limited due to their small size. The larger trees on the adjoining site, their size and scale provide significant benefit to the broader amenity of the conservation area. The trees surveyed are either young/small specimens of poor form and health rendering the trees unworthy of the imposition of a Tree Preservation Order, or larger trees that still require some future crown management, but require retention and protection during the development process.

4.3 Of the seven trees inspected on or close to the site, two trees of significance are located in the adjoining gardens close to the development, two are growing in the front garden and the remaining three trees are located in the rear garden. Of the seven trees surveyed during the site inspection; two have been assessed as BS5837 category B; two have been assessed as BS5837 category c; three have been assessed as BS5837 category U.

5.0 The Proposal

5.1 The proposal for the site is for a new two-storey ground and lower ground extension predominantly rear of the property with re-landscaping enhancement work to the front and rear gardens. The existing front garden is having minor alterations to enable new planting to be introduced to enhance the appearance of the property. The majority of the rear garden is to remain with little or no significant alterations to levels beyond that required for the small increase of the extension and grading of the bank, which is only slightly greater than that of the existing lightwell/terrace at the rear. The property will have new terrace area constructed above the extension below, which will link the existing soft landscaped garden with the extended building, but this will be at a level the same as, or close to, the existing levels.

5.2 There will also be a quality landscape scheme to enable the client to be able to move around the garden while still aiming to keep a soft natural feel to the garden similar to that already seen at the property, with an enhanced planting proposal compensate for the loss of the existing vegetation.

5.3 The proposed footprint of the above structures can be seen on the plans submitted as part of the main planning application.

6.0 Arboricultural Implication Assessment

TREE REMOVAL / RETENTION:

6.1 The proposed development layout will require the removal of just two small category U trees. The remaining two trees recommended for removal are not required to achieve the development but are beneficial to achieve the new planting within the landscape scheme. One is a category U tree which requires removal regardless of the development on safety grounds, the other small category C tree is considered to be more beneficial to be removed and replace the specimen due to its poor health and form. The three small category U trees: a Laburnum (T1), a Japanese Flowering Cherry (T3), a Holly (T5) and one small category C Magnolia (T6), which are located within the flower beds within the garden, are not much bigger than shrubs. The trees are in decline or have limited growth potential, some with extensive dieback and would be advised for removal regardless of the development. All these trees are inconsequential to the broader amenity of the conservation area and their removal will have no notable impact within the broader landscape of the conservation area. All the trees of some visual merit outside the site are proposed for retention. The Hawthorn (T4) is located adjacent to the boundary wall and though is a relatively modest size it is intended to work around retaining the tree. The other two trees of most significance are both located in neighbouring gardens and there is no need to remove these trees to achieve the proposed development. Therefore, the broader arboricultural landscape character of the site and its adjoining neighbours will be retained and in the longer term enhanced.

6.2 In relation to Large Impact Landscape Trees [LILT], in or close to the site, there are only two trees of note both found within the gardens of the properties adjoining the site. The Ash (T2) in the adjoining garden is being crown managed due to its proximity to the 3rd party building and its structural condition would not be affected by the proposed scheme due to the distances involved between the tree and the proposed excavation and construction activities. The Magnolia (T7) has only received less significant pruning in recent years but has been extensively reduced in the past and the proposed conversion work on the garage should not have any impact on the tree beyond that relationship currently experienced. There is no need to remove LILT specimens located within the adjoining gardens and the trees can be adequately protected and there are no significant pruning work proposed that would have any detrimental impact on the tree. Therefore, the broader arboricultural landscape character of the site and its adjoining neighbours will be retained.

6.3 The trees (T2, T4 & T7) should not be significantly affected by new development activity subject to appropriate tree protection measures. Pruning of the Hawthorn (T4) is minor formative pruning and pruning would benefit this tree, but is not essential to implement this proposed application and would be recommended regardless of the proposed scheme.

6.4 The Plan Dwg No: TSP1/ASH/PEW/REV1 in Appendix A and the schedule in Appendix B identify the tree removal recommendations, these works are not considered to be excessively detrimental, controversial or a reason to refuse the scheme.

TREE PRUNING TO ACCOMODATE THE PROPOSAL OR ACCESS TO THE SITE

6.5 The crown of the Hawthorn (T4) has only received some minor surgery in the past and this is the only tree that requires some minor formative tree surgery regardless of the development, to aid the longer term retention and development of the tree. No pruning work is directly required to aid access to the site or to implement this proposed scheme. The work detailed is for the benefit of good arboricultural practice.

6.6 The tree schedule in Appendix B identifies the pruning recommendations, these works are not considered to be detrimental or controversial.

ASSESSMENT OF RETAINED TREES ROOT PROTECTION AREAS

6.7 Section 4.6.3 of BS 5837: 2012 states that the Root Protection Area (RPA) of each tree should be assessed by an Arboriculturalist considering the likely morphology and disposition of the roots, when known to be influenced by past or existing site conditions.

6.8 There are no new significant structures within the theoretical RPA's of trees proposed for retention, on or adjacent to the site, as part of this proposal. It is intended that the excavation required for the lower ground extension will be vertically cut, meaning there is no need to batter back for the excavation, then the foundation formed in situ. The proposed extension and garage conversion are at a sufficient distance that they will not have an adverse effect on the retained Ash tree (T2), Hawthorn (T4) and the Magnolia (T7). Appendix A shows the Theoretical Radial RPA's (in **Pink**) of all of the retained trees that are unaffected; therefore it should be possible to avoid encroachment into the theoretical RPA's of all of the retained trees.

6.9 Some of the trees on site have developed with a number of restrictions and constraints to their root zones, including boundary walls and paving; these would all have the potential to influence the root dynamic. It could be possible to adjust the RPA of the Ash (T2) and Magnolia (T7) as it is assumed that the roots have been deflected by the presence of the foundations of the boundary wall and or garage/substation. However, this has not been shown at this stage as all major building works are outside of the Theoretical Radial RPA, there is only some minor work for tapering the soil down to the rear of the extension, this concludes that there is only a minor area of incursion into the reduced adapted RPA.

6.10 Having undertaken an assessment, it is noted that with careful use of ground protection and tree protection on site there should be no material reason to use negative tree impact issue as a significant or material reason for refusal of the proposed application. No further excavations for this scheme are proposed within the RPA's notional or adjusted, beyond that proposed above.

6.11 The RPA's of tree T2, T4 & T7 have been considered in relation to a more site specific assessment of their morphology and distribution for the main development works, this also concludes that there would be no incursion into their RPA's. These have not been illustrated on the plan as it is possible to achieve the basic radial RPA's on site at this point in time. The only incursion could be for minor landscape works but this should be negligible and would not involve any ground level changes or excavations for sub-base and would use permeable paving where appropriate.

6.12 The theoretical radial RPA's of the trees are shown in **Pink** have been illustrated on the Tree Survey & Theoretical Tree Root Protection Plan (Dwg No: TSP1/ASH/PEW/REV1) in Appendix A. The site specific adapted root protection area has been shown on the plan in Appendix A in **Orange** (where applicable) to demonstrate the area that will become the Root Protection Zone (RPZ) subject to planning approval, this identifies that the excavations and development work are to be carried out outside this adapted reduced site specific RPA.

6.13 It can be seen from the plans in Appendix A that some tree root ground protection measures could be used for the landscaping if discussed and detailed to the LPA, for their prior approval. If implemented with appropriate care, this should not be sufficiently detrimental (based on the theoretical assessment made) to withhold planning approval.

ASSESSMENT OF NEW HARD LANDSCAPING AND SURFACE WATER DRAINAGE ON ROOT PROTECTION.

6.14 Overall the main retained area of the rear garden is predominantly hard landscaped and it is understood that this shall remain similar when re-developed. The proposed landscaping being considered has been prepared to provide a high quality scheme utilising tree planting to mitigate the loss of the canopy cover of the tree removal where appropriate and will provide for a greater growing media to provide trees of longer term benefit than those proposed for removal, which are considered to be limited and impaired. The new landscape scheme, when viewed from outside the site, will have the ability to both enhance the canopy cover and the verdant feel of this garden. If this remains unchanged the impact to the retained trees on or adjacent to the site should be eliminated. The proposed landscaping and tree planting will

provide a more sustainable long term amenity boost to the conservation area which will not have any foreseeable negative impact on the retained trees if implemented sensitively. However, if this is altered any hard surfacing will still need to be permeable and appropriately designed so that no surface excavation will be carried for the sub-base within the Radial RPA's. But, should there be any reason to disturb, excavate, remove or alter the soil level further than that agreed or to alter the proposed hard landscaped area within the RPA's beyond that approved as part of the planning permission. AAS's Arboricultural Consultant must be contacted prior to any works being planned or implemented. All surface water drainage will be position outside the Radial RPA's.

7.0 Post Development Pressure

FUTURE TREE AND STRUCTURE RELATIONSHIPS

7.1 The Ash tree (T2) and Magnolia (T7) proposed for retention in the neighbouring garden will be unaffected by the development proposal and the Ash (T2) had been pruned last season to address (it is assumed) the conflict issues with another third party property and also to reduce the size of the crown, lessening the wind sail area) which appears to be part of a cyclic program of pruning which should. All the remaining retained trees, on and adjoining the site can continue with their current pruning and surgery regime, where required, as detailed in the schedule in Appendix B, with the addition of some extra formative pruning work to the Hawthorn (T4) to try to deal with the impact of the Ivy and climbing rose found within its crown. The retained trees are at a satisfactory distance from the proposed new building with engineered foundations, and should be unlikely to give rise to any inconvenience.

7.2 The proposed ground, lower ground and terrace area will not require any pruning work for the construction activities in the rear garden, nor will the conversion of the garage if carried out with due care. Though, the Hawthorn (T4) requires some minor lifting and formative pruning regardless of the development. The trees have received lifting surgery in the past and any future surgery would not be greater than that previously carried out.

7.3 The BS3998: 2010 – Recommendations for Tree Work discusses and endorses various methods of pruning can alleviate the minor inconveniences trees can cause, whilst retaining them in a healthy condition. Methods such as crown reductions (section 13.4) partial or whole, crown lifting (section 13.5) and crown thinning (section 13.6) can be used to both increase light to properties, as well as improve clearances from buildings. Trees in towns and cities are often sited in close proximity to buildings; however resident's concerns can be readily appeased with the implementation of regular, well-planned, sensitive pruning.

7.4 Regular inspections of the retained tree(s) by a suitably trained or experienced Arboriculturalist should be carried out. Subsequent remedial works will ensure that trees are maintained in a suitable manner to exist in harmony with the new structures and its occupants for many years to come.

REMEDIATION / REPLACEMENT PLANTING AND SOFT / HARD LANDSCAPING

7.5 As guidance, any new trees that are planted should be selected to ensure they do not become a nuisance and that the level of routine maintenance is low. The trees to be proposed are being considered to provide a combination of both visual amenity, screening and sustainable environmental benefits. Providing an enhanced, more robust, species diversity, which will be more adapt to providing great volumetric crown cover to the site and conservation area, greater than would be achieved by the retention of the Cherry (T3). Providing a net canopy and species diversity gain for the local area, while enhancing the usability of the garden for the young family.

7.6 The soil type may require the guidance of NHBC as far the building foundations are concerned. Clearly the planting schedule must be available to assist with foundation design, but any potential for subsidence damage in the future will be designed out.

7.7 The specification for the planting of the proposed trees will provide extensive planting pits and soil improvement within the landscape scheme to aid the long term establishment of the trees, to ensure the viability of the quality landscape scheme. It will provide an enhanced crown canopy cover on the site even at the point of planting. It will then be capable of growing to provide a much needed longer term net gain to the broader amenity of the conservation area as they establish and flourish in the domestic family garden setting.

7.8 All new pathways and soft landscaping areas within the Root Protection Areas (RPA's) of the retained trees should be designed using no-dig, up and over construction and in close co-ordination with the retained Arboriculturalist using porous materials (where appropriate or practical as indicated in the landscape plan). Where hard surfaces or foundations are to be emplaced or removed within the RPA's; site specific method statement(s) should be produced with direct input from the retained Arboriculturalist and appropriately monitored with onsite supervision of the Arboriculturalist for tree/tree root sensitive stages.

8.0 Tree Protection Measures and Preliminary Method Statement for Development Works

8.1 TREE PRUNING / REMOVAL

A list of all tree works that are required is included in the tree table at Appendix B. Pruning / removal has only been specified for the following reasons:

- Where work is necessary to implement the proposed scheme.
- Where works are required for safety reasons.
- Where work is needed to mitigate a legal responsibility or duty.
- Where work is required to improve tree form, or improve the appearance of overgrown areas of the site.

Where any tree work is needed, this work will be in accordance with British Standard 3998: 2010 (Tree Work – Recommendations).

8.2 TREE PROTECTION BARRIERS

8.2.1 Given that none of the proposed work for the rear and lower ground extension of the property, or the garage conversion are within the theoretical RPA's of the retained trees (T2, T4 & T7) and there are no plans to undertake any significant changes within the retained section of the garden area other than some minor grading at the edge of the extension to enable light to filter to the windows below, the trees can be adequately protected using tree protection barriers/fencing. Tree protection can be provided for the theoretical radial root protection area during the demolition, excavation and construction phases of the development and access will only be required during the final hard and soft landscaping of the site.

8.2.2 It is essential for the future health of the trees to be retained on or adjoining the site, that all development activity is undertaken outside root protection zone or the adjusted root protection zone of these trees, whenever this is practical. The fencing will be erected **prior** to any commencement of works on site and where soft stripping of the building is required in the close proximity of trees and removed only when all development activity is complete or unless agreed as part of a conditioned Arboricultural Method statement for the landscaping works. The protective fencing will be as that shown in BS5837 (See Appendix C).

The fence must be marked with a clear sign reading (or similar):

"TREE PROTECTION FENCING
Construction Exclusion Zone – No Access, Do Not Move".

8.3 GROUND PROTECTION / SCAFFOLDING WITHIN THE RPA

8.3.1 Given that only minor works requiring low level scaffolding for the rear extension of the property are within the theoretical RPA's of the retained trees (T2 & T4). These trees should not be affected by this part of the proposed development work and not require protection from scaffolding as long as the existing hard landscape paving is left in position. Some ground protection may be required during the landscaping work when the paving is being replaced on site. At which point ground protection must be put in place for a temporary period to avoid compaction of the soil within the root protection area of the Ash (T2) and the Hawthorn (T4) therefore, this needs to be assessed with architect/contractor to ascertain the minimum safe working area required to carry out the remodelling and extension works on the building. Once a minimum safe working area has been agreed, the area between the Tree Protection Barriers/Fencing and the building will need to have ground protection to avoid undue compaction and soil disturbance. The detail of the ground protection will need to be provided to and approved by the Local Planning Authority.

8.3.2 Due to the hard landscaped and paved nature of the site within the RPA of the Ash (T2), Hawthorn (T4) and Magnolia (T7) the existing paving and hard surfacing should be retained in position to form the ground protection, but if this needs, or is intended to be removed, some form of ground protection solution would need to be agreed with the Architect, Contractor, Arboriculturalist and the LPA for both the building and the landscaping works if access is required into their RPA. This is usually provided once planning approval has been given by way of condition. On a small site such as this, ground protection measures are considered to be acceptable and the use of them within the RPA for landscaping, and if appropriately supervised and monitored is not felt to be a reason to withhold planning consent.

8.3.3 Where protection has been put in place within RPA's of retained trees on or adjoining the site (including retained hard surfaces as ground protection). This ground protection/tree protection must still be treated as sensitive site zones. There can only be storage of clean lightweight materials, non-corrosive or hazardous liquids must still be kept away from the area(s) this includes corrosive powdered products, such as, cement, lime and plaster. Storage of cement, hydro-lime, plaster or similar powdered products is **not** acceptable. Mixing of these materials is also unacceptable within the RPA's of retained trees. But, should there be any reason to disturb, excavate, remove or alter the ground protection or retained hard surfacing other than that agreed, or to alter the proposed hard landscaped area within the RPA's beyond that approved as part of the planning permission AAS's Arboricultural Consultant must be contacted prior to any works being planned or implemented.

8.4 DELIVERY AND STORAGE OF BUILDING MATERIALS

Due to the limited on-site storage space, it may be necessary for bulk deliveries to be split into smaller deliveries. The use of a "just in time" delivery method can also be adopted to reduce the time materials are stored on site before use.

8.5 SITE HUTS, WELFARE FACILITIES AND STORAGE OF EQUIPMENT, MATERIALS AND CHEMICALS

All site huts will be positioned outside of the retained trees RPA's unless agreed with the LPA's arboricultural officer. It may be necessary to create a temporary raised storage platform within the RPA of retained trees, if this is the case the detailed specification will be discussed and approved by AAS prior to implementation or installation, including ordering of materials for its construction.

8.6 MIXING OF CONCRETE

All mixing of cement / concrete must be undertaken outside of the RPA of all of the retained trees. This includes the washing out of cement mixers and rendering tubs etc.

8.7 USE CRANES, RIGS AND BOOMS

Precautionary measures must be observed to avoid contact of any retained trees when manoeuvring cranes rigs or booms into position.

8.8 INCOMING SERVICES AND SOAKAWAYS

The existing drainage system and location for any proposed services is unknown at the time of preparing the report. Any new underground statutory services near to trees will however need to be installed in accord with the guidance given in BS5837 together with the National Joint Utilities Group Booklet 4: 2007 Guidelines for the planning, installation and maintenance of utility services in proximity to trees (NJUG4). Where works are proposed to, or for the creation of underground services all it must be fully demonstrated that all measures have been explored to install services outside of the RPA's of retained trees, only then can services be replaced or installed within the RPA of retained and protected trees on or adjacent to the site. When within the RPA of any retained tree, any new service trenches should be excavated using an airspade/airlance or pneumatic/hydraulic/percussion mole to avoid any damage to roots. Care must then be taken to ensure the new services are installed so as to avoid any roots present. Any proposal will be agreed with AAS prior to submission to the LPA Arboricultural Officer and where required by the LPA Arboricultural Officer any excavations or soil disturbance within the RPA's of retained trees will require appropriate supervision as detailed by the LPA's Arboricultural Officer.

8.9 ON SITE SUPERVISION

If required by the LPA's Arboricultural Officer, a detailed supervision programme could be devised by the developer/contractor/architect and retained Arboriculturalist AAS, ensuring that Arboricultural supervision is present at the appropriate periods during construction. It would therefore be deemed necessary for the retained Arboriculturalist to visit the site at the following critical points:

After commissioning or engagement of tree contractor/surgeon to agree the exact extent of the tree pruning specification and removal recommendation to make sure the correct trees are to be pruned and/or removed. **Date and time to be agreed, however once confirmed, these dates would be sent to the LPA's Arboricultural Officer.**

Erection of protective fencing to ensure it is constructed to the correct specification at the required proximity to ensure the healthy retention of the trees. **Date and time to be agreed, however once confirmed, these dates would be sent to the LPA's Arboricultural Officer.**

Installation of the tree root ground protection to ensure it is constructed to the correct specification at the required proximity (if applicable). **Date and time to be agreed, however once confirmed, these dates would be sent to the LPA's Arboricultural Officer.**

In addition to the above, an agreed number of random inspections or visits arrange at a set frequency (e.g. weekly, fortnightly, monthly) of the site may also be undertaken during construction to ensure the Arboricultural responsibilities are being fulfilled by the developer. A written site note assessment of each visit would be sent the Local Planning Authority and copied to the developer at the expense of the applicant/developer/contractor. Any issues relating to tree protection would subsequently be addressed immediately.

If required by the LPA's Arboricultural Officer and once a commencement date has been confirmed for works on site, a representative from the applicant will contact the relevant officer from the local planning authority to arrange a pre-start site meeting. During this meeting, future requirements for site supervision will be agreed.

8.10 OTHER TREE PROTECTION PRECAUTIONS

- No fires will be lit on site within 20 metres of any tree to be retained.
- No fuels, oils or substances damaging to the tree(s) shall be spilled, poured on site without the appropriate safety bunding or site specific environmental safety safeguard measures, but never within retained tree RPA's
- No storage of any materials within the root protections zone.

8.11 HARD / SOFT LANDSCAPING NEAR RETAINED TREES

All new pathways and hard landscaping areas within the Root Protection Areas (RPA's) of the retained trees should be designed using no-dig, up and over construction techniques, and be specified in close co-ordination with the retained Arboriculturalist. Porous materials should also be used when surfacing near the trees but the careful attention must be given to the pH of the material and guidance should be obtained from the retained Arboriculturalist prior to specification preparation and/or installation. No machinery will be used for this work, which must all be carried out by hand.

8.12 LEVEL CHANGES

No level changes should occur within the root protection area of any of the retained trees, beyond those proposed for the basement assessed as part of this report. To date no detail plans or cross-sections have been provided, but if there were any to be agreed in the RPA's of the trees these would be carried out under strict arboricultural supervision.

8.13 DISMANTLING PROTECTIVE BARRIERS

Protective barriers must only be completely removed when all machinery, and equipment has left site. A minimum of seven days notice should be given to the local planning authority prior to dismantling works begin.

9.0 Conclusion

9.1 The loss of three category U tree: one small Laburnum (T1); one small Japanese Flowering Cherry (T3); one small Holly (T5) and one category C Magnolia (T6) will have no significant impact on the broader amenity of the local area, especially given the extensive decline and dieback in some of the trees, which would need be to felled regardless of the development. All the trees detailed are only small garden specimens, which are inconsequential within the broader context of the conservation area. These trees are not concluded to be worthy of the imposition of a Tree Preservation Order and are not of sufficient merit to warrant refusal of the scheme on detrimental tree impact grounds.

9.2 The construction of the rear extension and conversion of the garage are outside all of the retained trees RPA's on and adjacent to the site and subject to appropriate tree protection, should not be considered as a material reason to refuse planning consent for the proposed scheme, subject to appropriate conditions being attached to any approval.

9.3 The work within the rear garden (subject to the correct use of appropriate material, construction method and overall permeability) for the purposes of

landscaping is negligible and should not have a foreseeable impact on the retained trees. Therefore, there is no sufficient impact on the retained trees on or adjacent to the site to warrant refusal of the scheme on detrimental tree impact grounds.

9.4 Subject to precautionary measures as detailed above including tree protection fencing and root ground protection, the proposal will not be excessively injurious to trees to be retained.

9.5 There will be no appreciable post development pressure, and certainly none that would oblige the council to give consent to inappropriate tree works.

9.6 Use of existing hard surfacing as ground protection measures is a reasonable way of maintaining root protection for the retained trees (where applicable) while maximising the available working room on site; subject to the approval of this report by the LPA.

9.7 Site supervision is outlined in this report and if the LPA approve the scheme subject to requiring site supervision. More details could be provided as part of a release of condition, detailing timing and scheduling, which can be guided by the LPA arboricultural officer's specific requirements.

10.0 Recommendations

10.1 The Planning approval should not be withheld and site works should progress as follows to ensure the healthy retention of the trees.

a. Tree works, in accordance with BS3998
b. Installation of all tree protection measures.
c. Construction.
d. Hard & Soft landscaping.

10.2 Site supervision – An individual e.g. the Site Agent or AAS's retained Arboricultural Consultant (if directed by the LPA within their detailed planning condition requiring arboricultural supervision), must be nominated to be responsible for all arboricultural matters on site. This person must:

a. Be present on the site throughout the project or at agreed times in any conditioned Arboricultural Method Statement.
b. Be aware of the arboricultural responsibilities.
c. Have the authority to stop any work that is, or has the potential to cause harm to any tree.
d. Be responsible for ensuring that all site personnel are aware of their responsibilities towards trees on site and the consequences of the failure to observe those responsibilities.

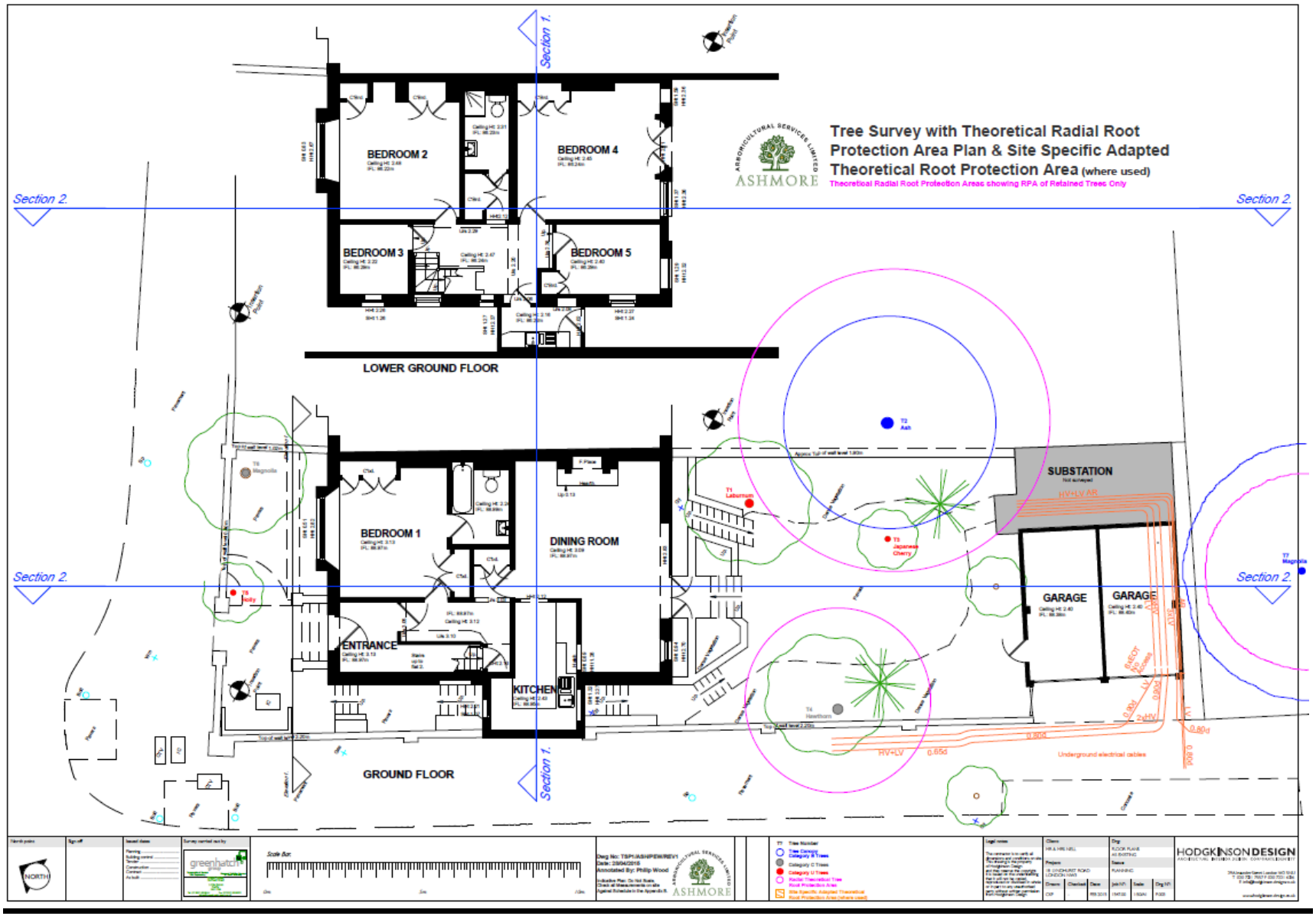
e. Make immediate contact with the local authority and / or retained Arboriculturalist in the event of any related tree problems occurring whether actual or potential.

10.3 It is recommended, that to ensure a commitment from all parties to the healthy retention of the trees, that details are passed by the architect or agent to any contractors and sub-contractors working on site, so that the practical aspects of the above precautions are included in their method statements, and financial provision made for these.

Report Date: 28th April 2015 Revision 1: 14th September 2015

Mr Philip E Wood *BSc(Hons) LAM*
Principal Consultant
For and on behalf of
Ashmore Arboricultural Services Limited

Appendix A



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Appendix B

Tree No.	Tree species	Height (m)	Multi-stem? (Enter MS)	Trunk / stem count dia. (mm)	Radius of RPA if circle	RPA -Root Protection Area sq.m.	Branch spread				Height of first significant branch (m)	Height of Crown Clearance (m)	Age class	Comments / Recommendations	Estimated remaining contribution	Assessed BS 5837: 2012 Value category
							N	E	S	W						
T1	Laburnum	6		150	1.80	10.17	2.0				1.2	2.0	S/M	Specimen of poor health, tree has grown with significant lean to the west and has corrected its habit to vertical. Trunk forks low at 1.5m. Specimen of limited value with garden interest only. Growing from retaining wall and the soil bank shrub bed. Recommendations: Fell and grub out to facilitate development.	<10	U
T2	Ash (NT)	11		EST 420	5.02	79.76	3.5				3.0	3.0	M	Large specimen located in neighbouring garden, previously reduced and thinned last season. Vertical fissuring and cracking of the outer cambium, present on main scaffold limbs. Specimen forks at 2.5m AGL with Ivy covered trunk. Not fully inspected as located in neighbour's garden. Recommendations: Re-reduce as part of cycle currently undertaken. (Though no pruning is required as a direct reaction to the proposed development).	20-40	B1

Tree No.	Tree species	Height (m)	Multi-stem? (Enter MS)	Trunk / stem count dia. (mm)	Radius of RPA if circle	RPA -Root Protection Area sq.m.	Branch spread				Height of first significant branch (m)	Height of Crown Clearance (m)	Age class	Comments/ Recommendations	Estimated remaining contribution	Assessed BS 5837: 2012 Value category
							N	E	S	W						
T3	Japanese Flowering Cherry	2.5		110	1.32	5.47	1.0				1.5	1.7	Y/M	Specimen of poor health with half of the crown dead on the northern side. Major bark damage on the west side of the trunk, possibly due to dog or cat damage. Inconsequential small specimen of limited amenity value outside of the garden. Recommendations: Fell to ground level and remove stump.	<10	U
T4	Hawthorn	6.0	MS	3 120 140 170	3.01	28.45	2.0				1.8	2.0	S/M	Specimen has been heavily reduced in the past and has re-grown. Ivy covered specimen with multiple trunks, surface roots are present within the upper soil level of the shrub bed. Recommendations: Crown lift up to a maximum of 2.5m AGL, remove Ivy from trunk and crown.	10-20	C1

Tree No.	Tree species	Height (m)	Multi-stem? (Enter MS)	Trunk / stem count dia. (mm)	Radius of RPA if circle	RPA -Root Protection Area sq.m.	Branch spread				Height of first significant branch (m)	Height of Crown Clearance (m)	Age class	Comments/ Recommendations	Estimated remaining contribution	Assessed BS 5837: 2012 Value category
							N	E	S	W						
T5	Holly	3.0		140	1.68	8.86	1.5				1.8	1.8	O/M	Specimen is growing in a very small area of open ground not much bigger than the base of the trunk. Almost no leaves are present within the crown, essentially the tree is dead. Specimen of poor health and form. Recommendations: Fell to ground level and grind stump.	<10	U
T6	Magnolia	5	MS	2 100 100	1.69	8.97	2.0				1.8	2.0	Y/M	Specimen is growing from a small area within the paving barely larger than the base of the tree. Trunk forks from the base, with the crown touching the building. Very thin sparse crown. Small tree of only immediate interest, not worthy of a TPO, due to small size, poor form and health. Previously reduced and lifted, believed to have been planted as a shrub feature in the garden. Recommendations: Fell to ground level and grind stump to enable implementation of new landscape scheme.	<10	C1

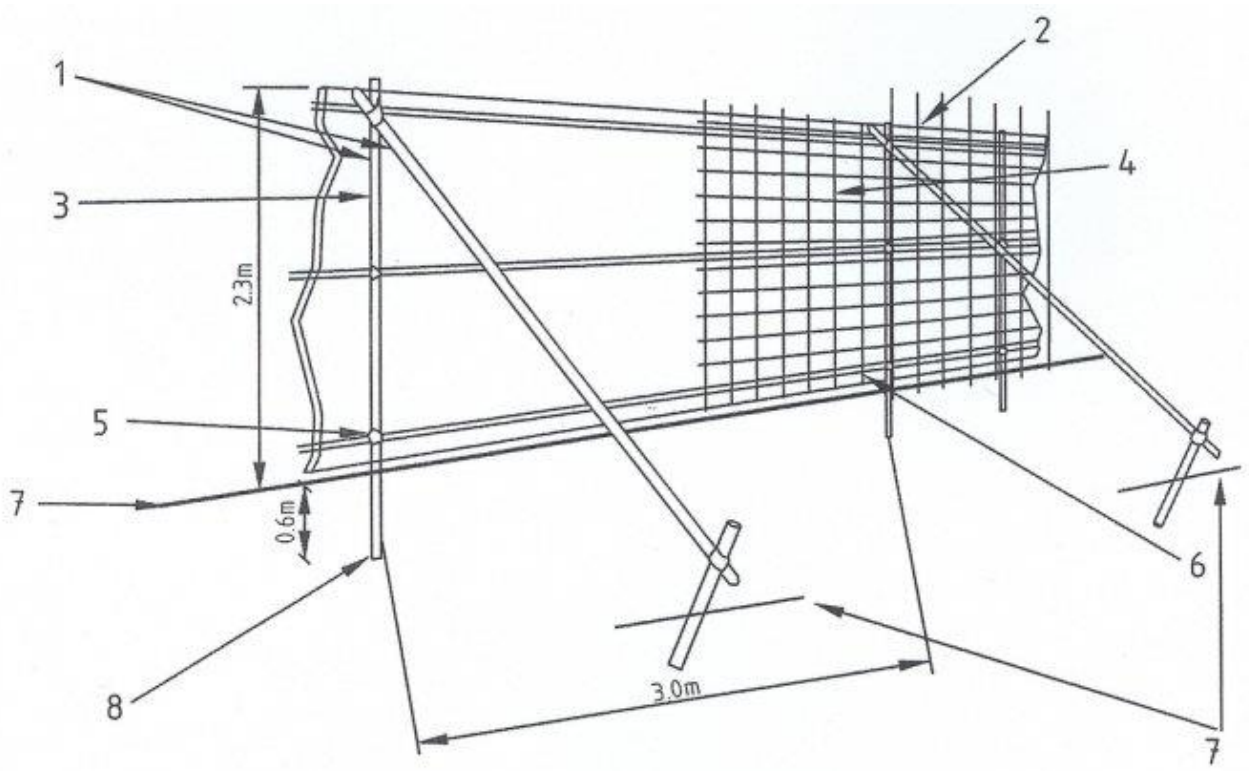
Tree No.	Tree species	Height (m)	Multi-stem? (Enter MS)	Trunk / stem count dia. (mm)	Radius of RPA if circle	RPA -Root Protection Area sq.m.	Branch spread				Height of first significant branch (m)	Height of Crown Clearance (m)	Age class	Comments/ Recommendations	Estimated remaining contribution	Assessed BS 5837: 2012 Value category
							N	E	S	W						
T7	Magnolia (NT)	7		EST 280	3.36	35.45	4.0				2.5	2.0	S/M	Good specimen growing 4.5m from southern elevation of the garage wall. Specimen has previously been reduced at approximately 4m above ground level and has subsequently re-formed a full crown. Crown is almost touching the owner's house. Recommendations: NWR.	20-40	B1

KEY:
Tree No: Tree number (T= individual tree, G= group of trees, W= woodland)
Crown = the leaf bearing part of the tree; TFD= To Facilitate Development Proposal (subject to confirming ownership)
Tree Species: Sp.= sub species or cultivar of main species; NT = Neighbours Tree (Tree on adjoining land)
GL = Ground Level; AGL = Above Ground Level; DWS = Deadwood and Stubs
Diameter: MS = Multi-stemmed; N/S = Not Surveyed (unable to inspect/restricted visibility or access)
Age class: Young (Y), Young Mature (Y/M), Semi Mature (S/M), Mature (M), Over mature (O/M), Veteran (V)
Height (Ht): Measured in metres +/- 1m

Appendix C

BS 5837: 2012

Tree Protection Barrier/Fencing



1 Standard scaffold poles
2 Uprights to be driven into the ground
3 Panels secured to uprights with wire ties and, where necessary, standard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5 Standard clamps
6 Wire twisted and secured on inside face of fencing to avoid easy dismantling
7 Ground level
8 Approx. 0.6m driven into the ground

Figure 2. – Protective fencing for RPA

End of Report