



Arboricultural method statement
for development at
17 Templewood Avenue NW3 7UY
Revision A

Report date: 03 05 12
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NOTE

This document is based on the recommendations of BS5837:2005 *Trees in Relation to Construction – Recommendations*; British Standards Institution, 2005. The Standard was updated on 30 04 12.

1 Introduction

- 1.1 This revised arboricultural method statement (AMS 7101A) has been commissioned by de Metz Forbes Knight Architects Ltd on behalf of Mr T Henry in relation to proposed development at 17 Templewood Avenue, Hampstead, London NW3 7UY. It replaces AMS 7101 of 08 02 12 and takes account the construction logistics that were not previously confirmed.
- 1.2 The proposal is to demolish the existing private house and garage to erect a new four-storey family home to include a basement, ground floor, first floor and second floor.
- 1.3 The following pages deal in detail with tree protection measures that *must* be taken before, during and after permitted demolition and construction to eliminate, or minimise to an acceptable level, the risk of damage to retained trees or planting areas. It should be read in conjunction with the tree protection plan (drawing TPP 7101A) and the site logistics plan (drawing SL-OD259) which are provided separately.
- 1.4 Measures specified in an arboricultural method statement (AMS) and tree protection plan (TPP) approved by a local planning authority become enforceable.
- 1.5 It is also important to be aware that most of the trees on this site have statutory protection under conservation area legislation and some are also protected by tree preservation orders. There are steep penalties for damage to protected trees – for example, up to £20,000 per tree on summary conviction for destroying a tree or its ‘amenity value’, or £2,500 per tree for other damage.

2 Summary sequence of events

- 2.1 Pre-work site meeting/discussion.
- 2.2 Tree work.
- 2.3 Installation of tree protection fencing, to create construction exclusion zones, and special temporary ground protection.
- 2.4 Installation of temporary site facilities at the front of the existing house, outside the construction exclusion zone.
- 2.5 Preliminary site work, including emptying the existing swimming pool.
- 2.6 Demolition.
- 2.7 Removal of temporary site facilities at the front of the site, temporary adjustment of protective fencing in the back garden, installation of temporary ground protection for erection of site administration and welfare facilities at the rear of the site, and reinstatement of the original line of protective fencing.
- 2.8 Piling, excavation of basement and associated works.
- 2.9 Installation of a raised pedestrian walkway, construction and internal fit.
- 2.10 Structural landscaping, including soil fill over front basement.
- 2.11 Removal of the protective fencing and temporary ground protection.
- 2.12 Replacement tree planting, and soil remediation, if required.

3 Communication, supervision and contingency

- 3.1 A discussion/meeting will take place before work starts between (at least) the arboriculturist and the construction site manager to discuss tree protection.

- 3.2 The construction site manager will ensure that all contractors, sub-contractors and site operatives are aware of the importance of tree protection measures and that enforcement action could be taken over a failure to follow the arboricultural method statement.
- 3.3 A copy of this revised arboricultural method statement (AMS 7101A) and the tree protection plan (TPP 7101A) will be available on the site throughout the build, and the construction site manager will be responsible for ensuring that operatives adhere to the methods.
- 3.4 The arboriculturist or other suitably qualified designated person will carry out fortnightly monitoring checks to ensure that work is carried out in conformance with this method statement. Records of the checks will be kept in the site log and retained for inspection.
- 3.5 If the need for any change to this method statement should arise, or further specialist advice is required, the construction site manager will contact the arboriculturist immediately and work will be stopped until decisions have been made. The arboriculturist will assess the situation and make recommendations, liaising with the local planning authority's tree officer where necessary.

4 Tree work

Tree removal

- 4.1 A qualified, insured tree surgeon will dismantle the sycamore T3 and grind out the roots to at least 300mm below soil level.
- 4.2 The italian cypresses T10, T11 and T12 will be removed by any convenient manner.

Removal of a section of hedge and climbing plants

- 4.3 A qualified, insured tree surgeon will remove a section of privet hedge and climbing plants approximately 7.7m long on the north west of the driveway.

Pruning

- 4.4 A qualified, insured tree surgeon will:
 - 4.4.1 remove the dead wood and basal shoots from the limes T1 and T6
 - 4.4.2 lift the crown of the lime T1 to 2.4m above ground level on its western side to allow for the erection and use of scaffolding
 - 4.4.3 lift the crown of the oak T13 and cut back its lowest south-eastern branches over the existing house to provide about 2m clearance from the house, depending on the branch structure and available growth points
 - 4.4.4 sever the ivy around trunk base of the oak T13, using hand tools only, and leave the ivy to die
 - 4.4.5 trim back the two lowest branches of the cherry T5 overhanging Templewood Avenue to the boundary line, maintaining the tree crown's flowing line
 - 4.4.6 if required, reface the privet hedge adjacent to the driveway and overlooking Templewood Avenue.

Standard of work

- 4.5 The work carried out by the tree surgeon will follow the recommendations of the British Standard BS3998:2010 *Tree work – Recommendations*, paying particular attention to the avoidance of the movement and transmission of pests and diseases.

Management of the arisings

- 4.6 Small- and medium-diameter branches will be chipped on site and will be spread as a mulch around the retained trees and the future planting position of the small leaf lime (to replace T3) to a depth of 70mm to 100mm, avoiding contact with tree trunks. The Italian cypresses T10, T11 and T12 will either be disposed of as green waste, or, by written arrangement with the tree surgeon, will be chipped on site, then managed as described in this paragraph.
- 4.7 The tree surgeon will remove any other arboricultural arisings from site and, if possible, will recycle or reuse them; or, alternatively, will dispose of them in an environmentally sound manner.

5 Installation of protective fencing and temporary special ground protection**Protective fencing to create construction exclusion zones (CEZs)**

- 5.1 After the tree work, but before *any other* work on site begins, construction exclusion zones will be formed by protective fencing set out according to the tree protection plan (drawing TPP 7101A). These areas are shown on the tree protection plan by a solid red line.
- 5.2 All the fencing will consist of sections of 2m-high steel mesh panels (such as Heras panels) wired to a framework of steel scaffold poles at a maximum interval of 3m. With the exception of the fencing around the horse chestnut N1, all the fencing will be braced at 45° on poles driven 0.6m into the ground, avoiding contact with structural roots. The protective fencing and its installation will be as shown in Appendix A of this report. The panels will be securely fastened one to another to prevent them from being opened like gates. The protective fencing around N1 — and *only* this section of fencing — may be mounted on rubber or concrete ballast blocks/feet, with a stabilizer strut mounted on a block tray to resist impact. The panels will be secured to prevent them from being opened.
- 5.3 All-weather notices will be attached to all the barriers, with words to the effect: 'Construction exclusion zone. No access — keep out'.
- 5.4 There will be no access within the construction exclusion zones. No work will be undertaken within any CEZ, and no equipment, machinery, plant, materials or spoil will be stored there.
- 5.5 Adjustment of the protective fencing will conform with paragraphs 12.1 and 12.2 inclusive.

Temporary special ground protection

- 5.6 Temporary ground protection will be laid in the position hatched in violet on the tree protection plan (TPP 7101A) throughout demolition/construction period. Additional ground protection will also be laid in the back garden for the period when the protective fencing is adjusted to enable the site accommodation to be installed in its second position.
- 5.7 The ground protection will consist of a single thickness of scaffold boards placed on top of a 100mm-deep layer of woodchip laid on top of a geotextile membrane ('landscape fabric').
- 5.8 The site manager will be responsible for ensuring that the angle and stability of the ground protection is suitable for the health and safety of operatives.
- 5.9 The site manager will be responsible for planning the work so that the number of operatives with access, and the period of access, to the specially protected sections of ground are kept to a

minimum and that only hand tools and light equipment, such as wheelbarrows, are permitted across the area of protected ground.

- 5.10 The site manager will ensure that the layer of woodchip under the scaffold boards is topped up as required to maintain a compressible layer.
- 5.11 No materials, equipment, plant, machinery or spoil will be stored on the scaffold boards forming part of the special temporary ground protection.

Maintaining protective measures

- 5.12 Monitoring of the condition and position of the protective fencing and ground protection will conform with paragraph 3.4 above.

6 Parking, access, storage, administration and welfare facilities

- 6.1 Contractor parking will be off site.
- 6.2 Site access for personnel will be along the existing driveway. An additional protected pedestrian access will be installed after piling for the basement as shown on the site logistics plan (drawing SL-OD259).
- 6.3 Deliveries of materials, components and equipment will be along the existing driveway or by crane (see paragraphs 11.1 and 11.2).
- 6.4 Materials will be stored outside the construction exclusion zones and off the special temporary ground protection.
- 6.5 The temporary site administration and welfare facilities will be outside the construction exclusion zones.
- 6.6 The main position of the site administration office and personal welfare facilities will be in the back garden, as shown on the site logistics plan (drawing SL-OD259). The huts will either be on concrete pads 600mmx600mmx600m, or on screw piles.

7 Alteration of the driveway's retaining wall

- 7.1 The removal of an approximately 7.7m section of the north-western section of the driveway's retaining wall to create access to the front of the site and the removal of the facing bricks along the remainder of the bank, followed by bank stabilization, will be carried out under careful supervision to avoid damage to any roots of retained trees that could result in harm to the long-term health or stability of the trees.

Wall removal – root protection

- 7.2 If work reveals individual roots with a diameter of 25mm or more, or clumps of roots, work will stop, the roots will be protected as described in paragraph 7.4 and the arboriculturist's advice will be sought. No roots larger than 25mm diameter or clumps of roots will be pruned without first obtaining the arboriculturist's advice, because to do so could compromise the stability and health of a tree.

- 7.3 If work reveals individual roots smaller than 25mm diameter, it is permissible for a competent person to cut them cleanly, using a sharp saw or sharp secateurs, provided that they are not in clumps. The cut should ideally be to a side branching root.
- 7.4 Exposed roots will immediately be wrapped or covered in clean hessian, or similar, to protect them from desiccation, exposure to wind or sudden temperature changes. The covering or wrapping will be removed before any backfilling. (Subject to paragraph 7.5 below.)

Brick removal – root protection

- 7.5 The soil and any roots present in the area to be stabilized will be protected either by a secured, single layer of a good quality geotextile ('landscape fabric'), or root protection incorporated in a proprietary system.
- 7.6 The management of extracted material will conform to paragraph 10.1.

8 Emptying the existing swimming pool

- 8.1 The water in the existing swimming pool will be discharged to the drains. It will not be discharged to the ground because it could waterlog the soil and asphyxiate tree roots, or the chemicals in the pool water could poison the trees.

9 Demolition of the existing house and garage

- 9.1 Demolition machinery will be positioned outside any construction exclusion zone or temporary special ground protection.
- 9.2 Extreme care will be taken to avoid causing flying debris, which could harm the retained trees, and to avoid impacting, snagging or fouling the tree trunk and branches.
- 9.3 A banksperson will be engaged to ensure that the movement of any plant used for the demolition is manoeuvred clear of tree branches.
- 9.4 If dust caused by demolition is visible on the trunk, branches or leaves (if present) of the retained trees, they will be rinsed with clean water running at low pressure. As trees are living organisms, the site manager will be responsible for ensuring that the trees are not 'jet-washed' and are not rinsed in freezing temperatures.
- 9.5 Spoil management will conform to paragraphs 10.1 and root management will conform to paragraphs 7.2 to 7.4 inclusive.

10 Waste and spoil removal

- 10.1 Waste and spoil will be removed promptly from the site and will not be piled or stored within construction exclusion zones, on the special temporary ground protection or anywhere on site where it changes soil/ground levels within the root protection areas.
- 10.2 Waste and spoil will be removed from site via the driveway.

- 10.3 Any delivery, collection, lifting, lowering or manoeuvring of a skip will be supervised by a banksperson to prevent damage to retained trees.

11 The use of lifting equipment

- 11.1 A crane will be positioned inside the footprint of the existing building, outside any construction exclusion zone or temporary special ground protection.
- 11.2 A banksperson will be responsible for ensuring that all crane operations are clear of trees, to prevent impact or entanglement with retained trees.

12 Temporary adjustment of protective fencing and provision of temporary ground protection

- 12.1 The protective fencing forming construction exclusion zone A in the back garden will be adjusted temporarily, as shown by the broken brown line on the tree protection plan TPP 7101A, to enable the site huts to be installed, as shown on the site logistics plan (drawing SL-OD259), and removed at the end of the build. Scaffold boards laid over a compressible layer of wood chip, as described in paragraph 5.7, will protect the ground during the installation and removal of the huts. The temporary ground protection will be removed when the huts have been installed and the original line of construction exclusion zone A will be reinstated, with one side of the huts forming part of the boundary. Ground protection will be reinstalled before the huts are removed.
- 12.2 The site manager will be responsible for ensuring that there is minimal intrusion into construction exclusion zone A, which protects the roots of the oak T13, during the installation and removal of the site facilities. Access will be restricted to operatives engaged in installing the huts and hand tools, and there will be no other access, work or storage in CEZ A.

13 Piling

- 13.1 The type of piles will be determined by the structural engineer. Any backfill required will not cause direct harm to tree roots or indirect harm as a result of soil contamination.
- 13.2 The position of the piles will be as set out as in drawing 01 P1 in the *Structural Basement Impact Assessment* (document P2000/IH/v 3), so that there will be no encroachment within a root protection area.
- 13.3 The piling rig will be the smallest practicable and will be positioned inside the footprint of the existing building, outside any construction exclusion zone and temporary ground protection. The piling rig's boom will be lowered when moving between piling operations to avoid accidental damage to any tree. A banksperson will be engaged to prevent impact or entanglement with retained trees.

14 Excavation, ground levels and services installation

- 14.1 Excavation for the basement will be carried out from within the footprint of the existing building.

- 14.2 Spoil management will conform to paragraphs 10.1 and root management will conform to paragraphs 7.2 to 7.5 inclusive.
- 14.3 Other than for the excavation within the new basement footprint, no soil will be excavated, stripped, dug or disturbed. Other than to the limited extent specified in paragraphs 17.1 and 17.2 inclusive, there will be no regrading of soil levels.

Service installation

- 14.4 Existing underground services and pipe runs will be used and all connections will be made within the footprint of the existing building. There will be no new service trenches dug within root protection areas and no excavation will be made within any root protection area to make new connections to any underground services.

15 Scaffolding

- 15.11 Scaffolding required for work on the north-eastern elevation of the front of the house will be 1m wide and cantilevered. Debris netting will be installed on the tree side.

16 General tree protection measures throughout the demolition and build

- 16.1 If any roots are uncovered, paragraphs 7.2 to 7.4 inclusive will be observed.
- 16.2 Extreme care will be taken when mixing materials to avoid spilling them or enabling them to be washed down slopes to tree roots. Material that could contaminate the soil, such as concrete mixings, oil or diesel, will not be discharged within 10m of a tree trunk.
- 16.3 Fuels will not be transferred within 5m of the protective fencing.
- 16.4 Fires will not be lit on the site.
- 16.5 There will be provision for adequate and appropriate supervision of demolition/construction work to protect trees from immediate, long-term, direct or indirect harm.

17 Soft landscaping

- 17.1 The soil fill over the eastern part of the basement (in the front garden) will consist of a lightly consolidated (not compacted) suitable subsoil, with a maximum of 300mm good quality topsoil, as recommended in BS 3882:2007 – *Specification for topsoil and requirements for use*.
- 17.2 The soil depth will start at 900mm, as shown on sectional drawing 1794/A1 57I, and will be graded in a gently flowing contour across about 4.7m to meet the existing soil levels. Soil levels around retained trees will not be raised, as to do so could 'suffocate' the roots.

Replacement planting

- | | | |
|------|-----------------------------------|--|
| 17.3 | Tree to be removed
T3 sycamore | Replacement
<i>Tilia cordata</i> or <i>Tilia cordata</i> 'Winter Orange'
Single stem, 12-14 girth. |
|------|-----------------------------------|--|

- 17.4 The replacement tree will be of the size specified, true to type, free from discernable pests and diseases, and will conform to BS3969-1: 1992 *Nursery stock – part 1: Specification for trees and shrubs*. The tree will be container grown, ideally in a light pot or air pot of 45l or 65l, and will have well-established root growth in the container. No substitution will be made, unless agreed with the local planning authority.
- 17.5 A square planting pit will be dug by hand to a diameter of at least 500mm greater than that of the diameter of the root ball. The pit will be just deep enough to facilitate the depth of the root ball up to the root-collar, so that the top of the root ball is just level with the top of the finished level of the surrounding soil.
- 17.6 If trees have been grown in air-pots or light pots, no staking may be necessary. Otherwise, they will be secured in place by double stakes of pressure-treated, peeled timber, and tied with a biodegradable tie at a height of no more than one third the height of the clear stem of the tree, as shown in the illustration in Appendix A of BS4043:1989 *Recommendations for transplanting root-balled trees*.
- 17.7 The pit will be back-filled with the excavated soil and no other material will be added to the backfill. Filling will be carried out in stages so that the soil can be lightly consolidated (but not compacted) in layers of about 150mm to ensure that no air pockets are left around the root ball.
- 17.8 The tree will be watered slowly under low pressure until the soil is thoroughly moistened (ie. to field capacity) to an area equivalent to a circle with a diameter of at least 1000mm around the stem.
- 17.9 An area equivalent to a circle with a diameter of at least 500mm around the tree will be mulched with bark, wood chip or well-composted garden/kitchen waste to a depth of between 70mm and 100mm and the mulch will be kept away from direct contact with the trunk stem, as recommended in section 6.2 of the British Standard BS3998:2010 *Tree work — Recommendations*.
- 17.10 There will be no mechanical cultivation under the crown spread of newly planted or retained trees. Any work will be carried out by hand only and care paid not to damage existing roots.
- 17.11 Soil will not be stripped, excavated or regraded around retained trees.
- 17.12 The arboriculturist or garden designer will assess other soil on the site after the construction is complete and specify any soil remediation measures that are needed.

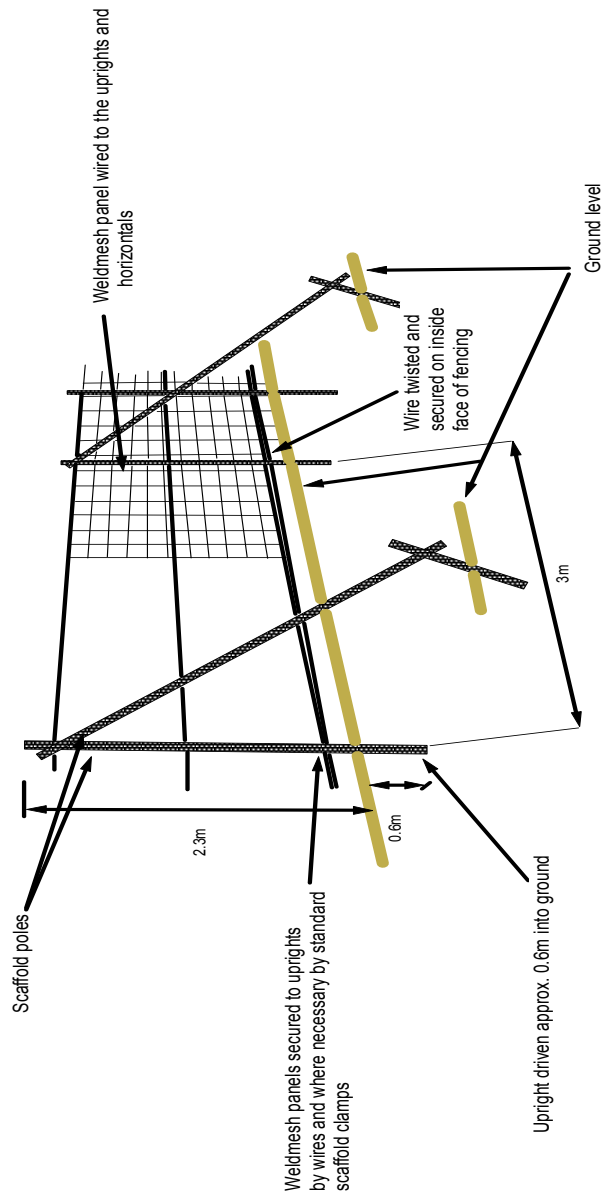
18 Removal of protective measures

- 18.1 All tree protection measures will stay in place until their removal has been approved by the arboriculturist. The permission to remove the protection will be recorded in the site log.

APPENDIX A – PROTECTIVE FENCING

Sketch of protective fencing, conforming to BS5837:2005

Not to scale



APPENDIX B – REFERENCES

BS 3882:2007 – *Specification for topsoil and requirements for use*; British Standards Institution, 2007.

BS3969-1: 1992 *Nursery stock – part 1: Specification for trees and shrubs*; British Standards Institution, 1992.

BS3998:2010 *Tree Work – Recommendations*; British Standards Institution, 2010.

BS4043:1989 *Recommendations for transplanting root-balled trees*; British Standards Institution, 1989.

BS5837:2005 *Trees in Relation to Construction – Recommendations*; British Standards Institution, 2005.

Note: BS5837 was updated on 30 04 12, but this document uses the 2005 standard throughout.

APPENDIX C – SCOPE AND LIMITATIONS

- C1 This report and its associated tree protection plan are based on arboricultural criteria only. Comments and drawings relating to non-arboricultural matters must be viewed as provisional and referred to appropriate specialists for confirmation and specification.
- C2 The tree protection plan — drawing TPP 7101A— is based on drawings provided by de Metz Forbes Knight Architects Ltd and OD Projects, with permission. Reference should be made to the original drawings for all details and dimensions other than those relating to trees.



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