# Arboricultural Impact Assessment And Method Statement

**for**

## Exeter Royal Academy for Deaf Education Topsham Road, Exeter


Prepared by

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Rev B 06 November 2017

## 1.0 Date of survey

1.1 August 2017

## 2.0 Surveyor

2.1 Tim Pursey

## 3.0 Instructions

3.1 I am instructed to undertake an impact assessment in view of proposed development at the property.

## 4.0 Report limitations

4.1 All inspections were made from ground level, using binoculars where necessary. Should a more detailed inspection, by climbing or by elevated platform, be required then this will be highlighted within the survey recommendations.

4.2 I understand that trees on the property are protected by virtue of a Tree Preservation Order (TPO) number 596 made in 2009. The order is an area order which means that all trees, irrespective of quality, upon the site are protected. This means, of course, that a number of trees on the property which are of insufficient quality to warrant individual protection are protected in any case due to the nature of the order.

4.3 This assessment should be read in conjunction with a Tree Survey and Constraints Plan issued by Tim Pursey on 20th August 2017.

## 5.0 Proposals

5.1 It is proposed to remove existing buildings and infrastructure from the property and to construct a new housing scheme along with a acre facility.

5.2 The majority of trees currently growing on site are proposed to be removed to facilitate works.

## 6.0 Assessment of Impact

6.1 The great majority of trees growing on the property are classified as being of low quality (category C trees). BS5837:2012 defines these trees generally as unremarkable of very limited merit. Ordinarily, trees



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of low quality will not pose any particular constraint to new development.

6.2 A small number of moderate quality trees and one high quality tree are also proposed for removal. Efforts have been made to retain these trees but due to site topography, the design approach and viability issues, these trees require removal.

6.3 If the moderate and high quality are retained, large portions of the site become effectively undevelopable and these areas are greatly increased by the sloping nature of the site.

6.4 A comprehensive new planting scheme designed by landscape Architects Matthew Wigan Associates will easily mitigate tree losses and will greatly improve the treescape, particularly along Topsham Road.

6.5 It is proposed to retain a number of trees along Weirfield Road. These include a mature Purple Beech along with Spruce, Norway Maple and Sycamore. It is intended that these be retained in order to soften the appearance of the new development to users and residents of Weirfield Road.

6.6 The proposed new care facility is relatively close to the trees fronting Weirfield Road but provided adequate tree protection measures are employed, significant detriment to the trees will be avoided.

6.7 **Specific Retained trees and Groups of Trees**
The new proposals encroach into the root protection area (RPA) of Purple Beech T57 by less than 10m$^2$. This degree of encroachment is considered acceptable, representing less than 5% of its total RPA. Assuming tree protection measures are properly employed, the tree should continue to grow on. Some very minor crown pruning may be necessary in order to erect scaffolding alongside the new building.

6.8 Sycamore T44 and Norway Maple T42 will be affected to a greater extent by the proposals and crown pruning will be more severe. It is intended that these trees are retained for now and are proposed to be removed when new trees planted following completion of works have gained some size. In this way, vegetation fronting Weirfield Road is retained.

6.9 Turkey Oaks in group G24 at the corner of Topsham Road and Trews Weir Reach are retained; they grow outside the site ownership. The RPAs of the trees are likely to extend into the subject site although it is unclear at this stage to what degree.

6.10 A boundary wall along with differences in levels inside and outside the site mean that the RPAs of trees within group G24 (shown as circular on the tree constraints plan) are more likely to be asymmetrical.



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6.11 Ground levels immediately inside the boundary wall are likely to be increased so little excavation is proposed. Given the presence of existing hard surfacing within the boundary wall, differences in levels as well as the tough nature of Turkey Oaks, minimal detriment to group G24 is anticipated.

6.12 One new dwelling is proposed to be constructed relatively close to Red Oak T21. The crown of the tree will need to be pruned back on one side only to accommodate the new dwelling.

6.13 It is accepted that it is not usual practice to retain a relatively large tree close to dwellings; this often results in future pressure to reduce and/or remove the tree. In common with above, it is accepted Red Oak T21 may ultimately be lost in time by which time, new trees planted will have some impact upon the landscape and will mitigate its loss.

6.14 A new roadway is to be sited close to Pines T13 and T14 and will occupy part of their RPAs (more so T13 than T14). It may be acceptable to utilise a no-dig method of construction in order to eliminate root damage and allow the two Pines to be retained.

6.15 The new roadway will occupy some 15% of the total RPA of Pine T13. This is an acceptable level provided the new no-dig surface is correctly installed.

6.16 Group G31 is a mix of tree species. It is proposed to selectively thin these trees retaining the better examples whilst also retaining the screening effect.

## 7.0 Provisional Method Statement to Mitigate Impact

7.1 **Tree Works**

Trees as indicated will be removed and stumps ground out or removed by machine. Crowns of retained trees will be pruned back to clear new buildings by 2m thereby allowing space for scaffolding. Crowns overhanging footpaths will be crown-lifted to provide 2m of vertical clearance and crowns overhanging roads lifted to provide 4m of vertical clearance.

7.2 Tree works and tree removals will be carried out by persons both qualified and experienced to do so. Works will be undertaken in accordance with BS3998:2010 Tree Work Recommendations.

7.3 **Protective Fencing**

Trees as identified will be protected from the impact of construction by a protective fencing to be erected in accordance with BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations.



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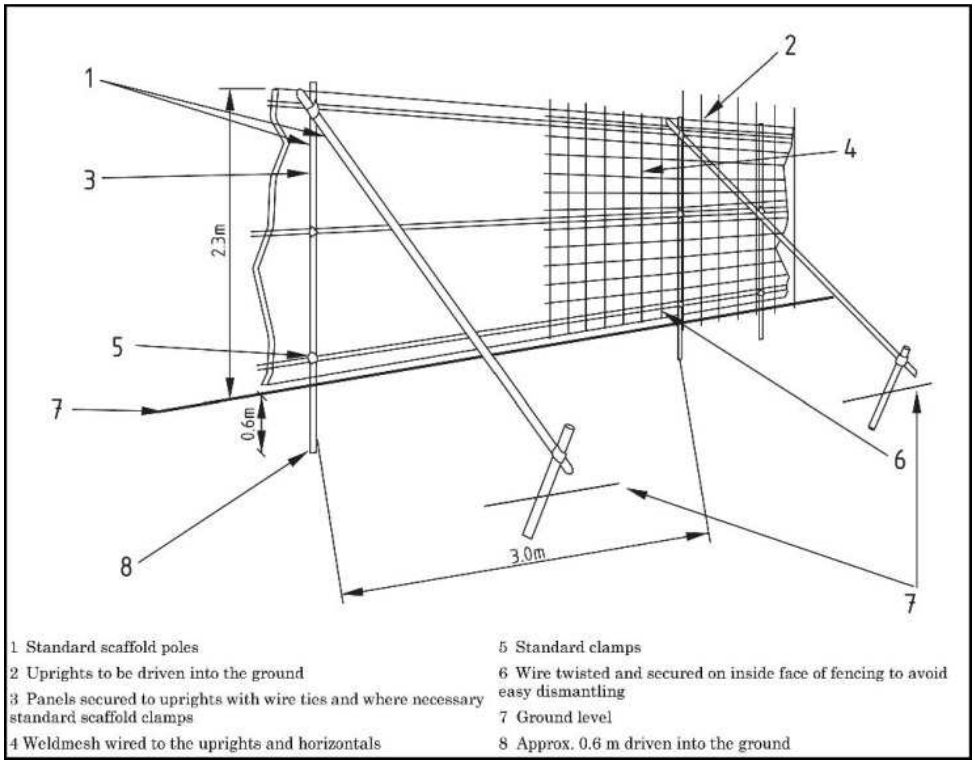
7.4 This fencing is designed to protect all parts of the tree, both above and below ground. It will be erected using Heras panels affixed to a rigid scaffold frame (see illustration below). It is particularly important that the fencing be completely rigid and immobile. A lesser standard of protective fencing may occasionally be erected with the agreement of the local authority. To ensure fencing is erected in the correct locations, setting out is required. Once erected the fencing will not be moved or relocated.




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. 0.6 m driven into the ground

Extract from BS5837:2012 showing detail of tree protection fencing

7.5 The fence will be erected in the positions shown on the attached plan, TP 2277/1707/TPP and will be erected before <u>any</u> work commences. The protective fencing will remain in situ until all demolition and construction works are completed.

7.6 The protective fencing will be clearly marked indicating its purpose to all persons on site. Signs will be minimum A3 in size and will clearly state that the protective fencing will not be moved under any circumstances. The protected area inside the fencing will be considered sacrosanct and no entry into this area will be permitted for *any* reason except to maintain the protective fencing. No excavation is permitted, no changes in ground level, no plant will track across this area at any time, and no storage of any materials within this area will be permitted.

7.7 **Ground Protection**

The areas indicated alongside trees T42, T44 and T57 will be protected using ground protection. This protection will be installed prior to commencement of demolition works.



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7.8 Ground protection will consist of scaffold boards or 25mm thick plywood laid upon minimum 100mm of woodchip. Boards will be pinned to the ground as appropriate.

7.9 The purpose of the boards is to prevent excessive soil compaction in the area. Ground protection forms part of the protected area so no excavation, plant or vehicles will be permitted into the area at any time.

7.10 Scaffold may be erected within this area but naturally, supporting feet will need to be sited directly on the ground. Protective boards and woodchip will need to be modified to accommodate.

7.11 Ground protection will remain in situ until substantive construction works are completed at which point it may be removed.

7.12 **Roadway Alongside Pines T13 and T14**
Construction of the new section of roadway will employ a 'no dig' policy in line with APN12 'Through the Trees to Development' published by the Arboricultural Advisory and Information Service.

7.12.1 In order for the system to be successfully installed, it is important initial operations are overseen by the project arboriculturist. Incorrect installation is potentially damaging to tree roots.

7.12.2 A 10m section of roadway alongside the trees will be constructed upon existing ground using a cellular confinement system (such as Geocell or Cellweb) laid upon a permeable membrane and filled with washed no fines gravel such as 20-40mm clean washed angular stone. The final surface, to be laid upon this grid, will be permeable to both air and water. Examples of acceptable surfaces are brick paviours, clean gravel, grass or porous tarmac.

7.12.3 Ground vegetation beneath the proposed spaces should ideally be killed using a translocated herbicide such as glyphosate. All organic material should then be removed to prevent any build-up of anaerobic conditions beneath the construction.

7.12.4 Rocks and other obstacles should be removed. Any stumps of trees or shrubs in this area will be ground out rather than excavated.

7.12.5 Major hollows may be filled with sharp sand. A suitable permeable membrane will be laid directly onto the ground/sand and a cellular confinement system will be laid directly upon the membrane.

7.12.6 Where the new spaces/path meet an area of soft landscaping, it will be necessary to construct an edging (ideally) with timber boards attached to pegs driven into the ground through the cellular confinement system. Pegs should be long enough to give sufficient support for the construction. Alternative kerbing may be discussed with the project arboriculturist.



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7.12.7 Aggregate (20-40mm clean stone), to fill the cellular confinement system, will be placed at one end and then pushed onto the grid so that machinery moves on the spread sub-base, not directly on the unfilled cellular confinement system and not on the ground either side of it.

7.12.8 The final surface, which must also remain permeable, can then be installed.

7.12.9 For the roots of the trees to remain undamaged there must be no excavation, soil stripping or site grading within the protected area – in other words, NO DIGGING. This means that the new roadway will be above existing ground level.

7.12.10 Ground levels in areas adjacent the new surface will be made up to marry using good quality top soil.

7.13 **Services**
Services will be installed outside the RPAs of any retained tree. Alternatives may be discussed with the project arboriculturist.

7.14 **General**
No storage or mixing of cement/concrete will be permitted anywhere within 10 metres of any retained tree. Account will be taken of any slopes in order to avoid the possibility of cement washings running into the rooting areas of retained trees.

7.15 Oil, bitumen or other material likely to be injurious to a tree should not be stacked or discharged within 10 metres of the trunk. Materials generally should not be stacked or discharged within 5 metres of the trunks.

7.16 **Arboricultural Supervision**
A pre-commencement meeting will be held between the project arboriculturist, site manage and possibly the local tree officer. The purpose of such a meeting will be to finalise protective measures and to ensure that protective fencing is adequate and erected in the correct positions. It is also to ensure contractors are fully aware of the need to comply with the contents of this document.

7.17 It is particularly important that this meeting take place prior to works commencing on site.

7.18 Periodic site visits will be made by the project arboriculturist at a frequency agreed with the local authority tree officer. The purpose of such visits is to ensure protective measures are adhered to whilst providing contractors with the opportunity to seek further advice and guidance where necessary.



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7.19 It is crucial that the project arboriculturist oversees initial stages of the installation of no-dig surfacing. Incorrect installation renders the whole system redundant.

06 November 2017
Tim Pursey
Chartered Arboriculturist



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Bibliography


British Standard 3936-1:1992 Nursery Stock- Specification for Trees and Shrubs
British Standard 3998:2010 Recommendations for Tree Work
British Standard 4428:1989 Code of Practice for General Landscaping Operations
British Standard 5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations

Tree Preservation Orders: A Guide to The Law and Good Practice 2000

Subsidence of Low-Rise Buildings 2000 Institution of Structural Engineers
Standards-Chapter 4.2 Building Near Trees 2003 National House Building Council

Guidelines for The Planning, Installation and Maintenance of Utility Services in Proximity to Trees 1995 National Joint Utilities Group

Controlling Water Use of Trees to Alleviate Subsidence Risk 2004 Horticulture Link Project 212

Inspection of Highway Trees Roads 52/75 1975 Department of the Environment Circular

Forestry Commission Information Notes
Phytophthora Pathogens of Trees: Their Rising Profile in Europe FCIN030 1999
Forests, Carbon and Climate Change: the UK Contribution FCIN048 2003

Forestry Commission Bulletin Climate Change: Impact on UK Forests FCBU125 2002

Essential Soil Science 2003 Ashman, M.R. & Puri, G.
Visual Amenity Valuation of Trees and Woodlands 2003 Helliwell, D.R.
The Hillier Manual of Trees and Shrubs 2004 Hillier, J. & Coombes, A.
The Arboriculturalist's Companion 1990 James, N.D.G.
Collins Tree Guide 2004 Johnson, O. & More, D.
Habitat Management for Invertebrates 2001 Kirby, P.
Dead Wood Matters: The Ecology and Conservation of Saproxylic Invertebrates in Britain 1992 Kirby, K.J. & Drake, C.M.
Physiology of Woody Plants 1979 Kramer, P.J. & Kozlowski, T.T.
Hazards from Trees: A General Guide 2000 Lonsdale, D.
Principles of Tree Hazard Assessment and Management 2001 Lonsdale, D.
The Body Language of Trees 2003 Mattheck, C. & Breloer, H
Trees of Britain and Northern Europe 1978 Mitchell, A.
Fungal Strategies of Wood Decay in Trees 2004 Schwarze, F., Engels, J, Mattheck, C.
Modern Arboriculture 2003 Shigo, A.L.
Diagnosis of Ill-Health in Trees 2000 Strouts, R.G. & Winter, T.G.
Soil Types: A Field Identification Guide 1989 Trudgill, S.
Manual of Wood Decays in Trees 2003 Weber, K. & Mattheck, C.
Reducing Infrastructure Damage by Tree Roots 2003 Costello L.R. & Jones K.S.




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| Tree Roots in the Built Environment | 2006 | Roberts, Jackson, Smith |
| Publications from Arboricultural Advisory and Information Service | | |
| APN1 Driveways Close to Trees | | Patch, D. & Dobson, M. |
| APN12 Through the Trees to Development | | Patch, D. |
| ARIN 130/95/ARB Tree Root Systems | | Dobson, M. |




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