

Site Tree Appraisal

27 Adria Road, Didsbury, Manchester M20 6SQ

"BS 5837 2012: Trees in Relation to Design, Demolition and Construction – Recommendations"



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INDEPENDENT ARBORICULTURAL CONSULTANCY

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27 Adria Road, Didsbury, Manchester M20 6SQ:

The following is a pre-development survey and appraisal of trees on and adjacent to the above site.

Its primary purpose being to categorize the trees according to BS 5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations, so that the Local Planning Authority may review the existing trees in association with the proposed development.

The report and associated plans have been produced for the sole purpose: - to accompany the above planning submission.

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1. Introduction:

1.1 This tree survey has been commissioned by Mr Cullen.

1.2 I have undertaken this tree survey following the guidance and recommendations of; 'BS 5837: 2012 Trees in Relation to Design, Demolition and Construction-Recommendations'.

1.3 **Instruction:** I am instructed by Core Design to inspect the significant trees on and adjacent to the site that may be affected by the proposed property extension and to provide an arboricultural report to accompany a planning application. The relevant tree information that has been noted and prepared to accompany the planning application is;

- A schedule of the significant trees on and adjacent to the site, to include basic data and an assessment of their condition, (see appendix 3).
- An appraisal of the impact that the proposed development may have on the trees and as a result, the visual amenity of the locale.
- An initial arboricultural method statement (AMS) setting out basic protective requirements and management needs of the trees to be retained and tree works required to facilitate the proposed development.

1.4 **Documents and information provided:** Core Design provided me with the following documents:

- *Design and Access Statement January 2022*
- *21017-MC-101 Plans as Existing*
- *21017-MC-102 External Elevations as Existing*
- *21017-MC-103 Removals Plans as Existing*
- *21017-MC-202 Plans as Proposed*
- *21017-MC-203 Plans as Proposed Removals*
- *21017-MC-204 External Elevations as Proposed*
- *21017-MC-205 Sections as Existing and Proposed*
- *21017-MC-SLP Site Location Plan*

1.5 **Qualification and experience:** I have based this report on my site observations and the provided information, and I have come to conclusions in light of my experience. I have experience and qualifications in arboriculture and list the details in appendix 1.

1.6 **Report scope and limitations:** Construction work often exerts undesirable pressures on existing trees, as do changes in their environment following construction (see appendix 2). This report has been prepared to analyse the impact that the proposed development may have to the existing site trees. It further advises on protective requirements and appropriate management needs of the trees, should they be retained on the site. The primary purpose of the report is to provide sufficient tree information to allow the Local Planning Authority to review any tree issues associated with the development proposal.

- 1.6.1 It should be noted that this report takes no account of indirect structural damage that may arise to buildings as a result of tree induced soil volume changes. Such damage can occur to buildings built on shrinkable clay sub-soils and will be more prevalent during prolonged drought conditions. Also, buildings built on shrinkable soils following tree removal can suffer heave affects as the soil rehydrates. These issues should be addressed during the design of the proposed property extension (*National House Building Council-NHBC 2011-part 4.2 building near trees*). Also, this report does not take into account damage to drains and underground services that may be due to tree root activity. If damaged, drains can allow roots to penetrate them. If, however, they are in good repair tree roots have little capacity to access them. A drainage expert could give more advice.

2 Site visit and observations:

- 2.1 **Site visit:** I carried out an unaccompanied site visit on 13th April 2023. All my observations were from ground level without detailed investigations and I estimated all dimensions unless otherwise indicated. The weather at the time of inspection, although dry and overcast with average visibility, was acceptable to proceed with the tree survey.

- 2.2 **Brief site description:** 27 Adria Road is a two-storey semi-detached house in the Didsbury area of Manchester. There is availability for vehicular parking on the side driveway and a pre-fabricated garage to the rear (photo 01). The front garden is a small lawn area and the rear garden is predominantly artificial lawn surface. There are two trees adjacent to the site, both on neighbouring property land.

2.2.1 Site Aspect and Topography:

- The house front is south west facing.
- The site is broadly level with no significantly raised features.

2.2.2 Preliminary Geological Information:

Soil Texture:	Loamy Clay
Soil pH:	Acid
Drainage:	Impeded Drainage
Fertility:	Low
Carbon:	Medium
Drains to:	Stream Network

(Cranfield Soil and Agrifood Institute; Land Information Systems, 2023)

- 2.2.3: **Tree Protection Status:** I was unable to determine from the Manchester City Council Local Authority website, the current protection status of the trees. Whether they are currently protected by a Tree Preservation Order (TPO) or if the property is in a Conservation Area.

- 2.3 **Identification and location of the trees:** The locations of the significant trees are illustrated on the Tree Constraints Plan *RTS/13042023/TCP 001* included with this report. All the relevant information on the trees is contained within this report and the provided documents listed in 1.4 above.

- 2.4 **Tree observations:** The trees were not climbed; I visually inspected the significant trees from ground level in accordance with visual tree assessment (VTA) techniques and recorded the information on the schedule included at appendix 6. The assessment has been to a level one of the TRAQ assessment criteria.

3 APPRAISAL:

- 3.1 Relevant references:** ‘BS 5837:2012 Trees in Relation to Design, Demolition and Construction-Recommendations’.
- 3.2 Arboricultural Impact Assessment (AIA):** The proposal is to involve a two-storey side extension, single storey rear extension and an internal loft conversion. At this stage I have not been made aware of the need to alter or install new underground drains or other utility services.
- 3.3** Foundation excavations, for the front south end of the proposed side extension, will require a 6.3 square metre overlap of the calculated root protection area (RPA) of T1. Given that the total RPA of T1 is 206 square metres, this would amount to an approximate RPA overlap of only 3%. Due to this very minimal overlap together with the fact that all the remaining sections of the RPA and contiguous areas will remain undisturbed, the potential loss or damage to roots is considered insignificant and would not be expected to cause any significant harm to the long-term health and viability of the tree.
- 3.4** Contractor work activity will need to take place within the RPA of T1. This work area, however, is beneath the existing paved driveway which is currently used for vehicle parking. Further passing over the driveway with materials etc is not expected to damage tree roots any more than already exists. The default location for tree protection fencing (around the circumference of the tree RPA), will therefore, not be required on this site. Protective tree fencing, however, to the trunk side of T1 may be prudent to avoid accidental damage to it. The protective fence specifications are noted in the Recommendations, section 5 of the report.
- 3.5** No tree pruning will be required to facilitate the extension build. However, due to the low branch overhang of the driveway (photo 02), some minor crown lift pruning to T1 is recommended to improve access and material delivery to the site. The pruning specifications are noted in the Recommendations, section 5 of the report.
- 3.6** Tree T2, in the neighbouring garden to the rear, is beyond any influence of the proposed extension works. Removal of the existing garage will take place within its RPA; however, this will not involve any excavation works and the branch structure of the tree is of sufficient height above ground level that I do not envisage the need for it to be pruned.

4 CONCLUSIONS:

- 4.1** The proposed extensions to the property, given the recommended temporary protective fencing, should have no effect on the existing trees of the site. Only minor tree works are required to facilitate site access, therefore, there will be no real arboricultural alteration to the visual amenity of the locale.
- 4.2 Other Considerations:** Trees by their very nature have structures that allow bats to shelter or roost in them, more so with moribund and decayed trees. All species of bats are protected by the Wildlife and Countryside Act 1981 (as amended), the Conservation (Natural Habitats) regulations 1994 and the Countryside Act and Rights of Way Act 2000. Also, it is an offence to disturb or destroy nesting birds. Appropriate ecological assessments should be undertaken to avoid contravention of the above.

5 RECOMMENDATIONS:
Arboricultural Method Statement (AMS);

5.1 Prior to any other activity on the site the following arboricultural works should be undertaken.

Table 1 Tree works:

Tree	Tree Work	Priority
T1	Crown lift the west side of the crown, over the driveway, to obtain a branch height clearance above ground level of approximately 4 metres.	Prior to any other site works

- 5.1.1** All the recommended tree works should be of a standard that is in accordance with BS 3998:2010 Tree Work-Recommendations. All the arboricultural work on this site should be undertaken by an arboricultural contractor who is able to comply with the above BS standard. The arboricultural contractor should hold public liability insurance to a minimum of £5 million and employer's liability insurance as required by law. The arboricultural contractor should be able to show competency by means of relevant certification and health and safety policy. Suitable arboricultural contractors can be sourced from the Arboricultural Association approved contractor list or the Local Planning Authority occasionally has lists of competent contractors. Rowbottom's Tree Services Ltd (arboricultural consultancy) cannot accept any liability where the prescribed work is not carried out in a correct and professional manner in accordance with current good practice.
- 5.1.2** The advised tree works within this report are recommended in order to facilitate the proposed extension works to the property. None of these tree works should be undertaken until there has been full approval from the Local Planning Authority.
- 5.2** After the above tree works have been completed, protective fencing should be erected at the location indicated on the Tree Protection *RTS/13042023/TPP 001*. The protective fencing should be: - One 3 metre length panel, 2 metres tall herras fencing on rubber or concrete feet, similar to that at appendix 5 (B), however, the stabiliser struts will not be required in this instance. Signs should be attached to the fencing advising the contractors that this is a construction exclusion zone (CEZ); keep out.
- 5.3** Upon completion of the above arboricultural works and erection of the protective fence panel, site construction may proceed following the guidance of this AMS. Only on completion of all building activity should the tree protective fencing be removed.
- 5.4** All excavations for strip foundations within a tree RPA (to the north end of T1 RPA) should be undertaken using handheld tools only, however, if needed this may be assisted in combination with an airspade. The excavations should be done under supervision of the arboricultural consultant. Should any tree roots smaller than 25mm diameter be encountered, they may be pruned using sharp clean secateurs or a pruning saw. If larger roots are encountered, then advice from the arboricultural consultant should be sought. However, given that the foundation excavation will be more than 5 metres away from the T1 trunk (of only 680mm DBH), large roots are not expected to be encountered. Prior to pouring of foundation concrete the excavated trench should be lined with a visqueen membrane. This is to avoid toxic contamination of the soil by uncured concrete.

- 5.5 Fires on the site should be avoided if possible. Where they are unavoidable, they should not be lit in a position where heat could affect tree foliage or branches. The potential size of a fire and wind direction should be taken into account when determining its location and it should be attended at all times until safe enough to leave.
- 5.6 Any materials whose accidental spillage would cause damage to a tree (e.g., oil, cement washing and vehicle washings etc.) should be stored and handled well away from the outer edge of its RPA.
- 5.7 All operatives of machinery and heavy plant should be made aware of the construction exclusion zones (CEZ) and overhanging tree branches. The operatives are to respect these zones and ensure that no damage occurs to trees due to careless use of machinery.
- 5.8 Siting of cabins and storage of building materials should be outside of the CEZ. Any proposal to install cabins or store materials within a CEZ should be agreed with the appointed arboriculturist and the Local Planning Authority prior to such installation.
- 5.8 A project arboriculturist should be appointed to ensure that compliance with tree protection requirements is upheld. The appointed arboriculturist should be an individual acceptable to the local authority. They must have a good understanding of the project requirements and be suitably qualified to understand the hazards associated with development near trees. They should work closely with the site manager, and have the authority to stop works until any major issues which could affect the retained trees have been resolved. They should keep the local authority updated at each stage of the project, including reporting of any unexpected issues which could affect the trees that are being retained. I can offer this service, or advice on the selection of a suitably qualified and experience individual.

6 BIBLIOGRAPHY

6.1 BS 5837:2012 Trees in Relation to Design, Demolition and Construction - Recommendations



Mr W. J. Rowbottom. HN Dip ARB

M. Arbor. A

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Appendix 1

Brief qualifications and experience of Mr W. J. Rowbottom.

1. Qualifications:

- Tree surgery craft certificate 1992
- BTEC Higher National Diploma in Arboriculture 2000 (HN Dip Arb).

2. International Society of Arboriculture (ISA):

- Tree Risk Assessment Qualification (TRAQ).
This is a systematic qualification of risks that may be posed by trees within their existing site setting over a given time frame.

3. Continuing professional development: Professional member of the Arboricultural Association.
M Arbor A. Professional member of the Consulting Arborist Society (CAS).

4. Experience: Managed an arboricultural contracting company for 20 years. Practiced arboricultural consultancy since 2010.

Appendix 2

Trees and Construction Sites – General Issues

Trees that have good health and stability are well adapted to their surroundings. Any demolition or construction activity which affects the adaptation of trees to the site could be detrimental to their health, future growth and safety. Trees tend to become less tolerant of change after they have reached maturity or have suffered previous damage or physiological stress. Site design and subsequent management, therefore, should aim to minimize the effect of change.

The part of a tree most susceptible to damage on a construction site is the root system, which, because it is not immediately visible, is frequently ignored. Within a short distance of the trunk, the roots become highly branched, so as to form a network of small diameter woody roots, which can extend radially for a distance much greater than the canopy spread of the tree, except where impeded by unfavourable soil conditions. The growth and development of all roots is influenced by the availability of water, nutrients, oxygen and the penetrability of the soil. Given favourable conditions, the tree's root system tends to develop sufficient volume to provide physical stability for the tree. Typically, however, around 80% of a tree root system is concentrated in the upper 600mm of the soil profile. Due to this relatively shallow depth, the threat to a tree root system on a development site can arise from:

- Root severance or fracture during excavation works
- Compaction of the soil structure, which restricts moisture percolation through the soil profile and gaseous exchange between the surface air and soil atmosphere. Soil compaction can occur as a result of driving heavy plant machinery over the soil surface, repetitive pedestrian footfall and storage of building materials.
- Water logging due to land grade changes
- Toxic contamination due to chemical runoff from construction activities.

Damage to the tree trunk and branches can also occur on development sites if appropriate distances between tree and construction work is not maintained. Such damage, however, is not usually sufficient to kill a tree directly, but can make it unsafe by affecting the dynamics and growth of the tree, or by initiating long term decay. Such damage can also be disfiguring. The attachment of notice boards and cables etc. can all damage trees, as can the use of tree trunks as a winch anchor.

Damage to a tree on a construction site may not at first be noticeably obvious, the full effect of such damage usually taking 3 or 4 years to become evident, at which time the tree may die and/or become unsafe. A tree that has taken decades to reach maturity can be damaged irreparably in a few minutes by actions that might be unwitting, negligent or wilful. The early provision of physical protection of the tree from damage is therefore critical.

Appendix 3

Tree Data (Explanations of):

The data collected and recorded on each tree reflects the recommendations provided in section 4.4.2 of BS 5837:2012 Trees in Relation to Design, Demolition and Construction-recommendations.

Tree number: T (individual tree), G (group of stems or several trees planted together or self-seeded), S (stump of a tree that has been cut at or close to ground level), SH (shrub masses).

Species: Common tree name; *specific name recorded in italics*.

Height: Approximate height of the tree to the nearest metre.

DBH: Stem diameter (recorded in millimetres) measured in accordance with Annex C of the BS 5837:2012.

Crown Spread: A record (to the nearest half metre) of the radial distances between the tree trunk and the end of the further most branches, in the direction of the four cardinal compass points.

Height to Lowest Branch: This parameter estimates the lowest point of the crown above the ground. Minor and dead branches are ignored.

Age: Estimated maturity of the tree; Moribund (at the point of death), Mature (last one third of life expectancy), Early mature (one third to two thirds life expectancy), Young (at less than one third of life expectancy).

Condition: An assessment of tree physiological condition. Good (high vigour and strong growth), fair (average vigour and growth), Poor (low vigour and declining growth).

Category Rating: An assessment to identify the quality and value (in non-fiscal terms) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained in the event of a development occurring, (for categorisation criterion see appendix 6).

Observations and Comments: A preliminary observation of the tree's physiological condition, structural form and its suitability to the existing site setting. Basic tree management advice may be recommended.

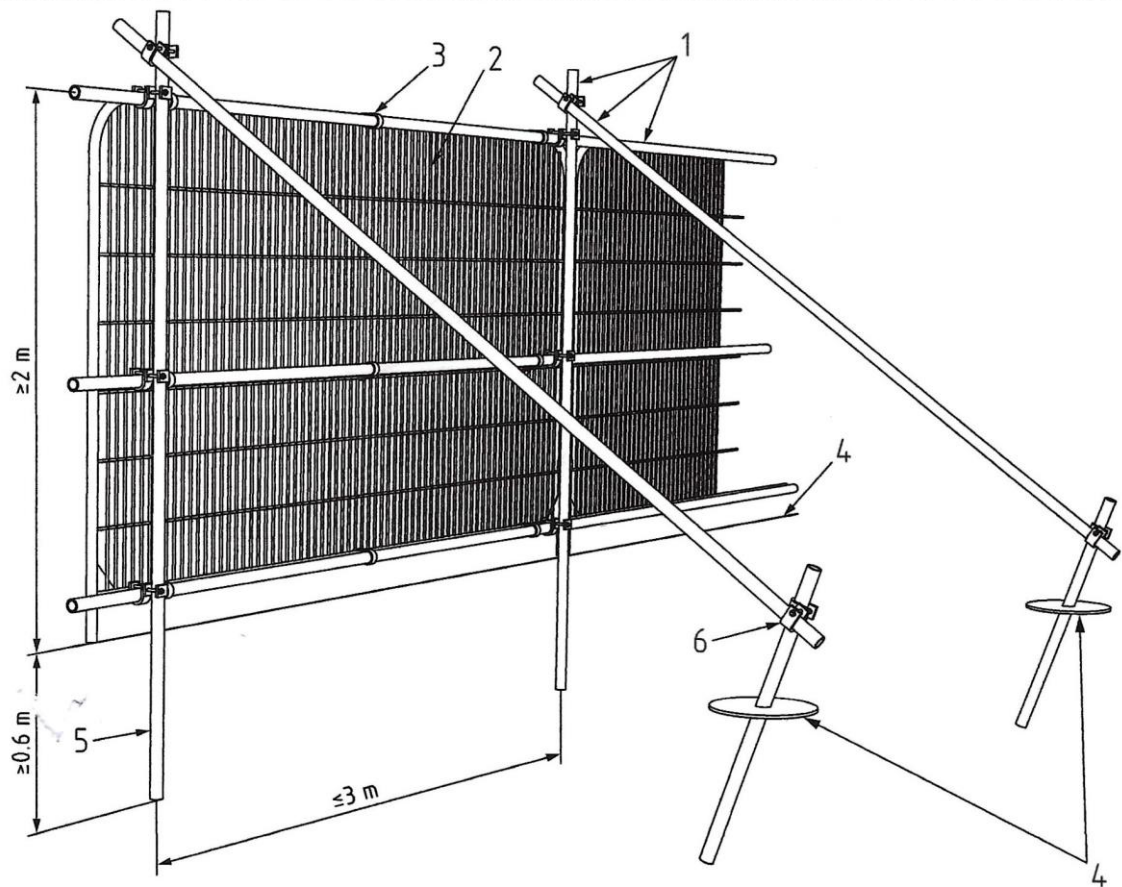
Appendix 4

Explanatory notes

AIA:	Arboricultural Impact Assessment; an assessment that evaluates the effects that the proposed design may have on the existing site trees and any constraints that the trees pose to the design, and where necessary recommend mitigation measures.
AMS:	Arboricultural Method Statement.
CEZ:	Construction Exclusion Zone; a fenced off area around a tree or group of trees that should remain undisturbed and free from demolition and construction activity.
Crown:	The structural part of the tree above ground level that consists of branches, twigs and foliage.
Included Bark:	Bark that remains (trapped) between branch and trunk or co-dominant stems. Has potential to be a structurally weak union.
Measurements:	All dimensions are estimated unless otherwise indicated. Measurements taken with a tape or clinometer are indicated with a *. Less reliable estimated dimensions are indicated with a ‘?’.
RPA:	Root Protection Area; The minimum area around a tree deemed to contain sufficient roots and soil volume to maintain the tree’s viability, and where the protection of roots and soil structure is treated as a priority. The RPA increases with tree size and is calculated from a measurement of the trunk diameter.
Species:	The tree species identification is based on visual identification. The common English name of what the tree appeared to be is listed first followed by the botanical name in <i>italics</i> . In some instances, it may be difficult to quickly and accurately identify a particular tree without further detailed investigation. Where there is some doubt as to the precise species of the tree, the genus is followed by the abbreviation spp; in order to avoid delay in the production of the report. The species listed for groups and hedges represent the main component and there may be other minor species not listed.
TRAQ:	Tree Risk Assessment Qualification. A tree risk qualification methodology; Level one; is a basic visual assessment of an individual tree or a population of trees near to targets of concern, conducted from a specified perspective, to identify obvious defects or specified conditions. Only defects visible from the perspective from which the assessment is made are expected to be identified.
VTA:	Visual Tree Assessment; a non-invasive method of examining the health and structural condition of individual trees, as advised by Mattheck (1993) and Hazard Evaluation by Matheny and Clark (1993). Guidance is also taken from Lonsdale (1999) Principles of Tree Hazard Assessment and Management.

Appendix 5 (A)

Protective Fencing Specification

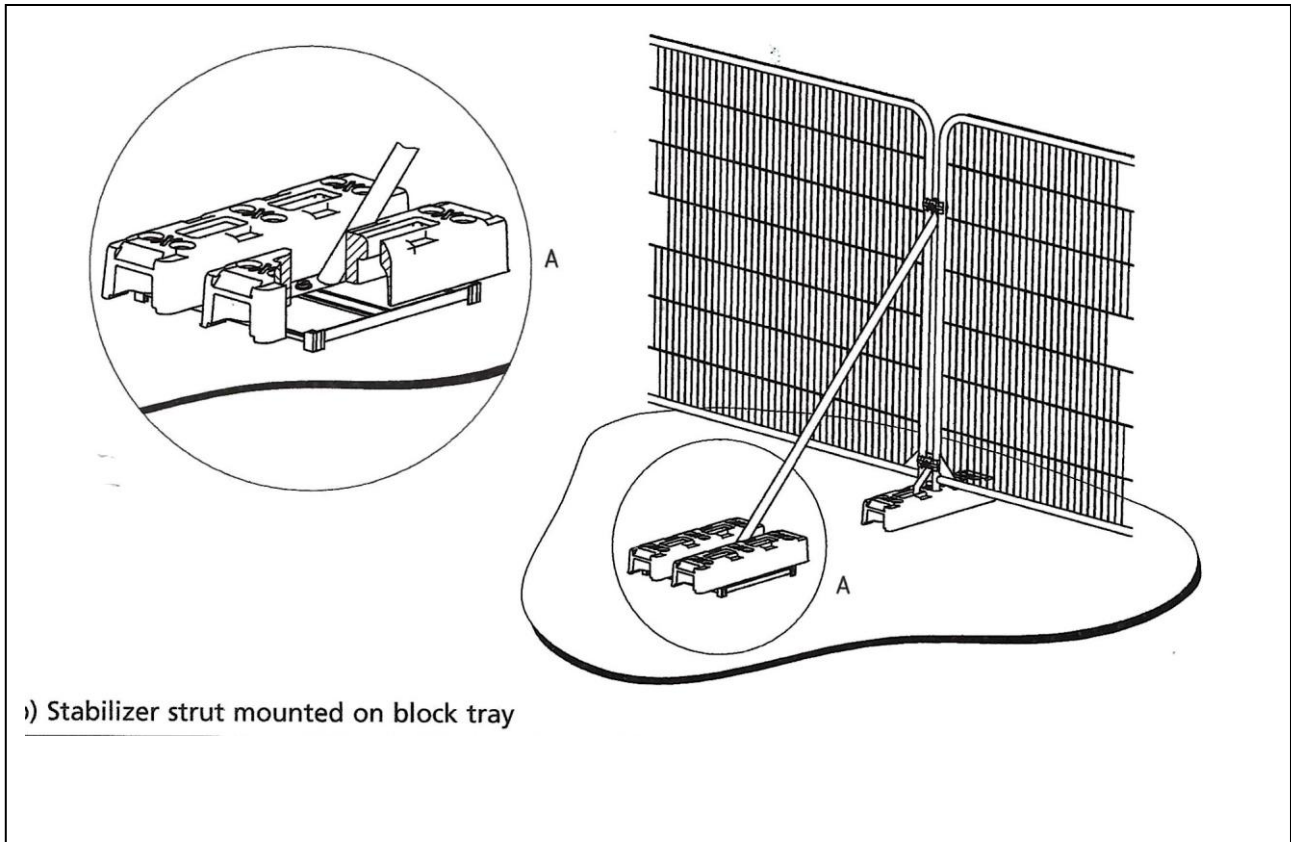


Key

- 1 Standard scaffold poles
- 2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
- 3 Panels secured to uprights and cross-members with wire ties
- 4 Ground level
- 5 Uprights driven into the ground until secure (minimum depth 0.6 m)
- 6 Standard scaffold clamps

Appendix 5 (B)

Protective Fencing Specification



Appendix 6
Tree Schedule

Tree No	Species	Height (M) * Crown Height above GL	DBH (mm) *	Crown Spread (M) *	Height to Lowest Branch (M) Direction of Lowest Branch	Age Range	Condition	RPA Radius (M)	RPA Square metres	BS 5837 Category Rating	Observations and Comments
T1	Beech <i>Fagus sylvatica</i>	<u>7.5</u> 2.5	680	N – 4.5 S – 5.0 E – 4.0 W – 4.0	<u>2.5</u> W	Mature	Fair	8.1	206	C1	Neighbour's tree; Severe topping previously undertaken; Buttress root growth beginning to damage the front boundary wall; Dense ivy climber covering the buttress roots.
T2	Himalayan Birch <i>Betula utilis</i>	<u>5.5</u> 2.0	300	N – 3.0 S – 3.0 E – 3.0 W – 3.0	<u>1.5</u> W	Mature	Fair	3.6	40	C1	Rear neighbour's tree; topping previously undertaken.

Appendix 7

Tree Quality Assessment and Categorization Criterion

Category U: Trees unsuitable for retention;

Trees which are 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. These trees, however, can have existing or potential conservation value. They could, therefore, be up graded from a U category if issues concerning their safety can be appropriately managed.

Trees to be considered for retention;

Category A: trees of high quality

Have an estimated remaining life expectancy of at least 40 years.

Category B: Trees of moderate quality

Have an estimated remaining life expectancy of at least 20 years.

Category C: Trees of low quality.

Have an estimated life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

For a tree to qualify under any given category, it should fall within the scope of that categories definition (U, A, B, C).

Trees in categories A to C should then qualify under one or more of three subcategories (1, 2, and 3). The subcategories 1, 2 and 3 are intended to reflect arboricultural and landscape qualities, and cultural values, respectively. These definitions are described below:

Identification on the plan

Dark Red

Light Green

Mid Blue

Grey

Arboricultural Qualities:**Sub-Category A1:**

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).

Sub-Category B1: Trees that might be included in category A, but have been 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 beyond 40 years; or trees lacking the special quality necessary to merit the category A designation.

Sub-Category C1: Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.

Landscape Qualities:

Sub-Category A2: Trees, groups or woodlands of particular visual importance as arboricultural and / or landscape features.

Sub-Category B2: 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.

Sub-Category C2: 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 benefits.

Cultural Values:

Sub-Category A3: Trees or woodlands of significant conservation, historical, commercial or other value (e.g., veteran trees or woodland pasture).

Sub-Category B3: Trees with material conservation or other cultural value.

Sub-category C3: Trees with no material conservation or other cultural value.

Appendix 8:

Site Photos

Photo 01:



Photo 02:

