Tree Survey, Arboricultural Implications Assessment and Method Statement

Great Barford Business Park, New Road, Great Barford, MK44 3LH

Report produced by	Client details
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1	Greenleaf Ltd- Preliminary Arboricultural Implications Assessment including Tree Survey Data, a Tree Constraints Plan as Prescribed in BS 5837:2012 “Trees in Relation to Design, Demolition and Construction”.

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INTRODUCTION

This report has been prepared on the instruction of Aragon Land and Planning Ltd in respect of a planning application at Great Barford Business Park, New Road, Great Barford, Milton Keynes, MK44 3LH, hereafter; site). It is therefore produced in accordance with British Standard 5837:2012 'Trees in relation to design, demolition and construction - Recommendations' (hereafter; BS:5837).

Greenleaf Ltd were instructed to assess the belt of trees along the south boundary of he application site (G1-G3) which are plotted on the tree survey plan (**Appendix C**), in accordance with the principles of BS 5837: 2012 'Trees in Relation to Design, Demolition and Construction'

The aim of the assessment is to survey the trees that may be affected by the proposed erection of 41 storage units in three blocks (B1 to B8) and three offices and associated existing access and car parking areas. The aim of this survey is to provide a preliminary consideration of the arboricultural implications of the development and provide information to assist with the layout and design taking into account the sites arboricultural constraints.

The assessment addresses the likely impact of the proposed dwellings, garages, driveway, construction and service trenches etc. and provides recommendations where necessary for the protection of trees during construction work based on BS: 5837.

An OS plan was provided and a topographic survey completed which has been used as the basis for the Tree Constraints Plan (TCP) and Arboricultural Implications Assessment (AIA). An existing and proposed site layout plan was also provided (**Appendix A**).

The ultimate purpose of this report is to identify the quantity and quality of the tree stock, contribution to public amenity and the constraints particular trees may offer to the site in terms of the proposed construction works.

SITE DESCRIPTION

The proposed development site is located west of New Road, approximately 455m from Great Bedford, 2.1km northwest of Blunham, 7.6km northeast of Bedford and 5.5km northwest of the town Sandy. The site is bordered by arable fields to the south and west, industrial units to the north and New Road to the west. The wider landscape includes arable land, deciduous woodland, hedgerows, scattered trees, amenity grassland, drainage ditches, the Great River Ouse, ponds and lakes.

The combination of OS maps and Google earth indicate there are no ponds within 250 meters of the study, a drain which is a tributary of the Great River Ouse flows along the south boundary of the application site. The main access for the site is along the north boundary off New Road and the proposed application seeks to retain the existing access.

The existing site is used for general storage and parking and it was evident that storage containers, tyres, wood/stone/rubble piles and earth banks have been pushed into the RPA's of the trees along the south boundary. This report includes an assessment of any trees which may have a Root

Protection Area (RPA) within the footprint of the proposed buildings, access, parking and working areas and any trees which are scheduled to be removed.

TREE SURVEY METHOD

The site contains a number of mature and semi-mature trees confined to the south boundary and which have been plotted onto the plan to show location, trunk diameter, RPA and canopy spread. The trees were assessed on 21st February 2022 and 3 group records G1-G3 and their details are in the attached schedule (**Appendix B**). The schedule gives the survey findings in tabular form, which conforms to the BS 5837:2012 Standard, **Appendix B** gives a full explanation of the headings.

The details recorded during the survey have been collected independently of the development proposals and the categorisation of the quality and amenity value of the trees is made on purely arboricultural grounds. The trees indicated on the site survey plan provided (**Appendix C**) have been visually inspected and assessed from ground level only and no aerial inspection has been made, nor has any decay detection equipment been used.

The trees have been detailed in the tree survey schedule to include identification number, which corresponds to the position on the site, species (English name), an estimated height, a north, south, east west measurement of the canopy spread where uneven or an average spread, an assessment of the tree's maturity, a measured trunk diameter at 1.5m above ground, the tree's condition, a quality grading in accordance with the guidance set out in BS 5837:2012 and some comments where relevant.

Included at **Appendix D** is a section of the BS 5837: 2012 standard that refers to the tree survey grading system at **Table 1**. For clarity, the grading system is summarised as follows:

- U grade – trees for removal (effective for less than 10 years)
- A grade – trees of high quality and value, effective for more than 40 years
- B grade – trees of moderate quality and value, effective for more than 20 years
- C grade – trees of low quality and value, effective for 10 years

TREE CONSTRAINTS PLAN

The proposed access, turning head and hard standing fall close to the RPAs of a number of trees and so a tree protection plan and arboricultural method statement is attached in Appendix E. The influence the trees will have on the layout of the development is set out in the context of the Tree Constraints Plan which forms **Appendix C**. The AutoCAD plan provided has been used as the basis for the TCP.

Appendix C shows the position of the trees by a circle coloured according to the quality assessment category (as detailed in **Appendix B**). Canopy spread is shown as a hatched green circle and the RPA as a dark green circle (Category A), blue circle (Category B) and grey circle (Category C). The plan deals with constraints the trees may place on the development in two areas as follows:

- Below Ground Constraints

The Root Protection Areas (RPA) for the trees is shown as a coloured circle according to its category grading. The RPA will be used to fix the boundaries of any temporary fencing needed to protect the trees during construction forming the Construction Exclusion Zone (CEZ).

- Above Ground Constraints

The branch spread of the trees has been shown by a hatched green line and gives an indication of the shadows created by trees around mid-day in the summer. This is recommended in BS 5837 but actual shade patterns vary throughout the year.

GENERAL ARBORICULTURAL CONSIDERATIONS

It is not anticipated that any more trees will require removal to facilitate the development apart from some introduced shrubs including laurel, cherry and cypress with individual young specimens scattered within the west section of the site. The valuable trees all fall along the south boundary.

- The most valuable trees in arboricultural and landscape terms are the mature Lombardy Poplar trees G1-G3 which are adjacent to the south boundary and which are already being encroached by the existing site use and so potentially impacted by the proposed works.

- The proposed hard-standing runs the length of the south boundary and runs close to the RPA's of the mature poplars (G1) such that a tree protection plan has been produced to safeguard these trees. This included the removal of all materials from around the trees and also removing the earth bank which has been piled up against the trees. A palisade fence or similar should then be erected to form a barrier between the trees and the operational site area.

- Any exposed tree roots of G1 which have an RPA close to the proposed working areas will be cleaned, cut and trimmed to allow quicker recovery and re-growth of the root system. Any piled earth around the trees to be removed as volcano mulching or equivalent will cause adverse impacts on the trees.

- Tree protective fencing would be required as shown in the Tree Protection Plan (TPP) to protect the canopy and RPA outside of the proposed construction area. Trakmats may also be required for any groundworks within the RPA but outside of the no-dig area and as detailed in the arboricultural method statement.

Within the RPA it is usually not permissible to:

- Carry out ground excavations without seeking appropriate advice.
- Make any ground level changes without seeking appropriate advice.
- Store building materials or machinery
- Dispose of waste materials and liquids.
- Site a bonfire or erect a site hut
- Use trees as anchor points for mechanical equipment or cables.

Where the retention of single trees of Category A or B significantly affects development of the site, the LPA may consider removal and replacement to be a viable option. In such an event all trees should be maintained for three years after planting including keeping plants weed free, checking and maintaining guards and supports and replacing any failures that occur with stock of the same size and quality.

LEGAL STATUS

The site does not fall within a Conservation Area and none of the trees are protected by a Tree Preservation Order and therefore prior notice will not be required from the LPA before any arboricultural or construction works commence.

LIMITATIONS

All trees likely to be impacted by the proposed construction works have been subject to a detailed inspection and their potential conflicts with the outline proposals addressed in this AIA. In the view of an independent arboricultural consultant all reasonable concerns arising from the consultant's assessment can been satisfied to the fullest standard.

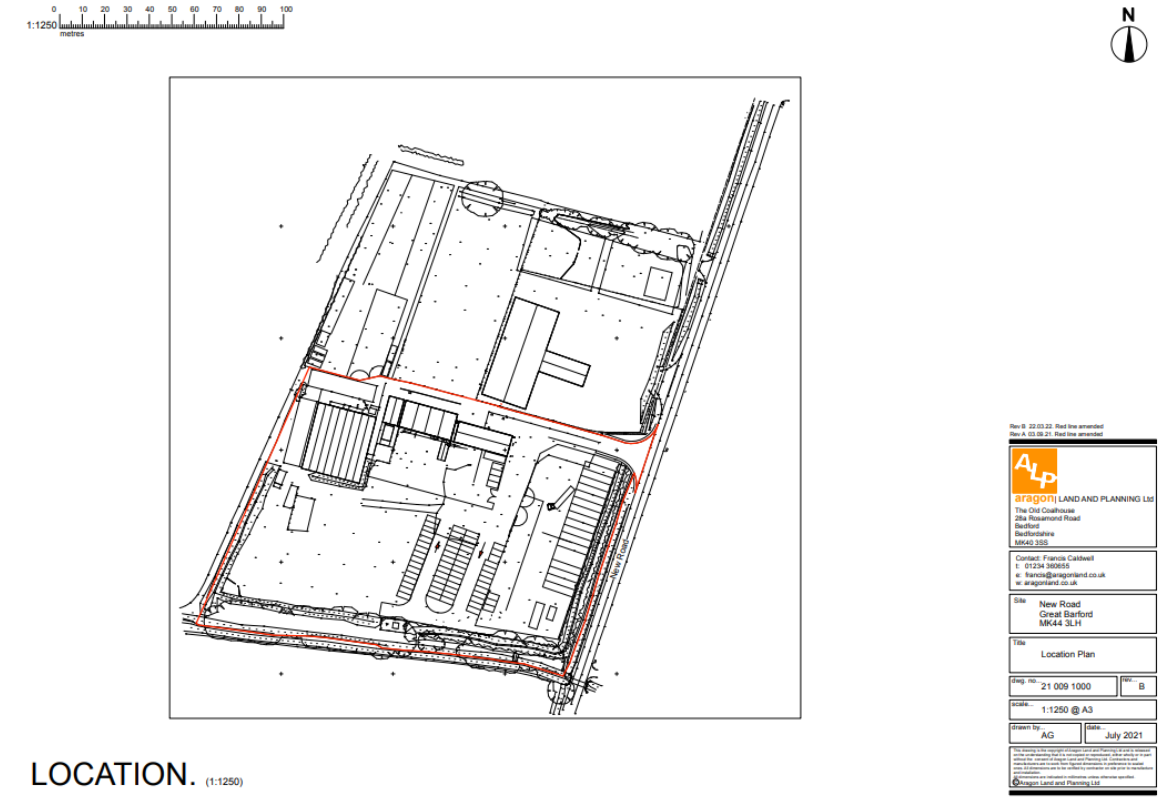
The objective assessment has resulted in the recommendations for tree protection and mitigation should the scheme be progressed. This report includes a preliminary AIA, AMS and a TPP, in order to cement BS:5837's guidelines, the retention and protection of good quality trees (Category A & B) and the recommendations of this AIA.

No assessment of the soils or wood tissue has been sent for laboratory analysis unless specifically stated. Our assessments are based on professional experience and expert observation at the time of the inspection. No liability can be assumed to rest with Greenleaf Ltd should conditions alter after our inspections.

Prior to the implementation of any works, we strongly recommend that the Local Authority be consulted to obtain any necessary consent. We must be informed immediately of any alterations to plans or site features upon which we have based our assessments and or advice. This may affect the report and or any recommendations.

We recommend that your trees should be inspected regularly by professionals as part of prudent tree management programme. This report has been prepared for the sole use and benefit of the client. Any liability of Greenleaf Ltd shall not be extended to any third party. No part of this report is to be reproduced without prior authorisation.

APPENDIX A



Site Location Plan

Proposed Site Layout Plan

7	Greenleaf Ltd- Preliminary Arboricultural Implications Assessment including Tree Survey Data, a Tree Constraints Plan as Prescribed in BS 5837:2012 “Trees in Relation to Design, Demolition and Construction”.

Proposed Landscaping

APPENDIX B

Tree No	Species	Circumfrence mm	Ht (m)	Diameter DBH (mm)	Canopy Radius (m)	Clearance height from ground to canopy	RPA radius (m)	Rpa m²	Condition- Good, Fair, Poor	CaT- A,B, C	Remaining Contribution	AGE- LM,M, SM, EM, Y	Notes
G1	Poplar	2000	20	637	9	1.5	6.4	127	Good	A	40+	M	X27 trees
G2	Poplar	1500	20	477	5	1.5	5.7	103	Fair	B	40+	M	X13 trees
G3	Poplar	1000	20	318	5	1.5	3.8	45.8	Fair	B	40+	SM	X51 trees

Greenleaf Ltd- Preliminary Arboricultural Implications Assessment including Tree Survey Data, a Tree Constraints Plan as Prescribed in BS 5837:2012 “Trees in Relation to Design, Demolition and Construction”.

Categories

Below is an explanation of the categories used in the attached Tree Survey.

No	Identifies the tree on the drawing.
Species	Common names are given to aid understanding for the wider audience.
BS 5837 Main Category	Using this assessment (BS 5837:2012, Table 1), trees can be divided into one of the following simplified categories, and are differentiated by cross-hatching and by colour on the attached drawing: **Category A** - Those of high quality with an estimated remaining life expectancy of at least 40 years; **Category B** - Those of moderate quality with an estimated remaining life expectancy of at least 40 years; **Category C** - Those of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm; **Category U** - Those trees in such condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
BS 5837 Sub Category	Table 1 of BS 5837:2012 also requires a sub category to be applied to the A, B, C, and U assessments. This allows for a further understanding of the determining classification as follows: **Sub Category 1** - Mainly arboricultural qualities; **Sub Category 2** - Mainly landscape qualities; **Sub Category 3** - Mainly cultural values, including conservation . Please note that a specimen or landscape feature may fulfil the requirements of more than one Sub Category.
DBH (mm)	Diameter of main stem in millimetres at 1.5 metres from ground level. Where the tree is a multi-stem, the diameter is calculated in accordance with item 4.6.1 of BS 5837:2012.
Age	Recorded as one of seven categories: **Y** Young. Recently planted or establishing tree that could be transplanted without specialist equipment, i.e. less than 150 mm DBH. **S/M** Semi-mature. An established tree, but one which has not reached its prospective ultimate height. **E/M** Early-mature. A tree that is reaching its ultimate potential height, whose growth rate is slowing down but if healthy, will still increase in stem diameter and crown spread. **M** Mature. A mature specimen with limited potential for any significant increase in size, even if healthy. **O/M** Over-mature. A senescent or moribund specimen with a limited safe useful life expectancy. Possibly also containing sufficient structural defects with attendant safety and/or duty of care implications. **V** Veteran. An over-mature specimen, usually of high value due to either its age, size and/or ecological significance **D** Dead.

Height	Recorded in metres, measured from the base of the tree.
Crown Base	Recorded in metres, the distance from ground and aspect of the lowest branch material.
Lowest Branch	Recorded in metres, the distance from ground and aspect of the emergence point of the lowest significant branch.
Life Expectancy	Relates to the prospective life expectancy of the tree and is given as 4 categories: 1 = 40 years+; 2 = 20 years+; 3 = 10 years+; 4 = less than 10 years.
Crown Spread	Indicates the radius of the crown from the base of the tree in each of the northern, eastern, southern and western aspects.
Minimum Distance	This is a distance equal to 12 times the diameter of the tree measured at 1.5 metres above ground level for single stemmed trees and 12 times the average diameter of the tree measured at 1.5 metres above ground level tree for multi stemmed specimens. (BS 5837:2012, section 4.6).
RPA	This is the Root Protection Area, measured in square metres and defined in BS5837:2012 as "a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority". The RPA is shown on the drawing.. Ideally this is an area around the tree that must be kept clear of construction, level changes of construction operations. Some methods of construction can be carried out within the RPA of a retained tree but only if approved by the Local Planning Authority's tree officer.
Water Demand	This gives the water demand of the species of tree when mature, as given in the NHBC Standards Chapter 4.2 "Building Near Trees".
Visual Amenity	Concerns the planning and landscape contribution to the development site made by the tree, hedge or tree group, in terms of its amenity value and prominence on the skyline along with functional criteria such as the screening value, shelter provision and wildlife significance. The usual definitions are as follows: Low — An inconsequential landscape feature. Moderate — Of some note within the immediate vicinity, but not significant in the wider context. High — Item of high visual importance.
Problems/ Comments	May include general comments about growth characteristic, how it is affected by other trees and any previous surgery work; also, specific problems such as deadwood, pests, diseases, broken limbs, etc.
Work Required (TS)	Identifies the necessary tree work to mitigate anticipated problems and deal with existing problems identified in the "Problems/comments" category.
Work Required (AIA)	Identifies the tree work specifically necessary to allow a proposed development to proceed.

Priority	This gives a priority rating to each tree allowing the client to prioritise necessary tree works identified within the Tree Survey. **1** Urgent – works required immediately; **2** Works required within 6 months; **3** Works required within 1 year; **4** Re-inspect in 12 months, **0** Remedial works as part of implementation of planning consent.

TREE SURVEY SCHEDULE

Age Class Definition

P Recently planted trees & saplings; not fully established. (Generally capable of being transplanted or easily replaced.)

Y Young: Establishing; usually with good vigour, but as yet of limited significance in the landscape.

EM Early-Mature; established; normally vigorous & increasing in height. Of increasing landscape significance.

M Mature; Fully established trees around the middle half of their usual life-expectancy; generally retaining good vigour and achieving full height but their crowns still spreading.

LM Late-mature: Fully established trees, retaining moderate vigour but with growth slowing.

O Old: Fully mature trees in last quarter of their usual life-expectancy; vigour declining.

A Ancient: Very old; low vigour; liable to decline. May include important Veteran Trees

BS 5837:2012 Terms and Definitions

Access Facilitation Pruning	One-off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary to provide access for operations on site.
Arboricultural Method Statement	Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.
Arboriculturist	Person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.
Competent Person	Person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached. *NOTE - a competent person is expected to be able to advise on the best means by which the recommendations of this British Standard may be implemented.*
Construction	Site-based operations with the potential to affect existing trees.
Construction Exclusion Zone	Area based on the root protection area from which access is prohibited for the duration of a project.
Root Protection Area (RPA)	Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.
Service	Any above or below ground structure or apparatus required for utility provision. **NOTE** - examples include drainage, gas supplies, ground source heat pumps, CCTV and satellite communications.
Stem	Principal above ground structural component(s) of a tree that supports its branches.
Structure	Manufactured object, such as a building, carriageway, path, wall, service run, and built or excavated earthwork.
Tree Protection Plan	Scale drawing, informed by descriptive text where necessary, based upon the finalized proposals, showing trees for retention and illustrating the tree and landscape protection measures.
Veteran Tree	Tree that, by recognized criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. **NOTE** - these characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem.

APPENDIX C

Tree No	Species	Circumfrence mm	Ht (m)	Diameter DBH (mm)	Canopy Radius (m)	North	East	South	West	Clearance height from ground to canopy	RPA radius (m)	Rpa m²	Condition-Good, Fair, Poor	CaT-A,B, C	Remaining Contribution	AGE-LM,M, SM, EM, Y	Notes
G1	Poplar	2000	20	637	9					1.5	6.4	127		A	40+	M	X27
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G3	Poplar	1000	20	318	5					1.5	3.8	45.8		B	40+	SM	X51

Tree Constraints Plan and Tree Protection Plan-Existing

Greenleaf Ltd- Preliminary Arboricultural Implications Assessment including Tree Survey Data, a Tree Constraints Plan as Prescribed in BS 5837:2012 “Trees in Relation to Design, Demolition and Construction”.

Tree Constraints Plan and Tree Protection Plan- Proposed

Greenleaf Ltd- Preliminary Arboricultural Implications Assessment including Tree Survey Data, a Tree Constraints Plan as Prescribed in BS 5837:2012 “Trees in Relation to Design, Demolition and Construction”.

APPENDIX D

BS5837:2012 Table 1 – Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see [BS5837:2012] 4.5.7.*			
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	

FLAC Note

The original contents of the column *Identification on plan* have been replaced by FLAC in the version above; spot colours to RGB codes given in BS5837:2012 Table 2

APPENDIX E

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Appendices

1. **Introduction**

1.1 This method statement has been prepared for submission to Central Bedfordshire Borough Council in connection with a planning application for the erection of 41 storage units in three blocks (B1 to B8) and three offices.

1.2 This document sets out the methodology for all proposed works that have the potential to affect any trees within the proposed working areas. Compliance with this method statement will be a requirement of all relevant contracts associated with the development proposals.

1.3 Copies of this method statement will be made available for inspection on site and will be forwarded to all contractors actively participating in the development works.

2. **Site Supervision and Reporting**

2.1 For the duration of the development a qualified arboriculturist will be appointed by the developer to supervise all arboricultural aspects of the works. The supervising arboriculturist must be approved by the local planning authority (LPA) at the commencement of works.

2.2 The supervising arboriculturist will be the point of contact between the developer and the LPA. Their primary responsibility will be to ensure that all arboricultural conditions of the planning permission are implemented and to advise on any further issues that arise during the development process.

2.3 In addition to the above, the supervising arboriculturist will also be responsible for:

● Induction of all contracting staff and raising of personnel awareness over the arboricultural implications of the development.

● Identification of individual responsibilities and key personnel within the workforce.

● Timing and methods of site visiting and record keeping, including updates.

● Procedures for dealing with variations and incidents.

● Procedures for reporting to the LPA over all arboricultural issues.

3. **Programme of Works**

3.1 All excavation, root pruning, formative pruning and any other arboricultural works approved as part of the development consent will be carried out prior to any other site works.

3.2 Measures for the protection of retained trees will be implemented on completion of the above tree works as detailed below (Section 4). All fencing erected for protection of trees will be maintained for the entire duration of construction works.

3.3 On completion of the development, the protective fencing will only be removed with the consent of the LPA to permit completion of the scheme. Note that permission for any additional tree works

not included in the original development consent will need to be obtained through application to the LPA.

4. **Works to Existing Trees**

4.1 All proposed tree works will be implemented in accordance with the approved plans and details. The tree works specification is detailed in **Appendix B**. Works will be carried out to the current arboricultural industry best practice and at a minimum in accordance with 'BS 3998:2010 - Recommendations for Tree Work'.

4.2 Written notice shall be given to the LPA prior to carrying out the approved tree works and any operations that present a particular risk to trees (e.g. demolition, excavation or piling etc. within or close to trees). A site meeting with the LPA's Tree Officer may be arranged at this time.

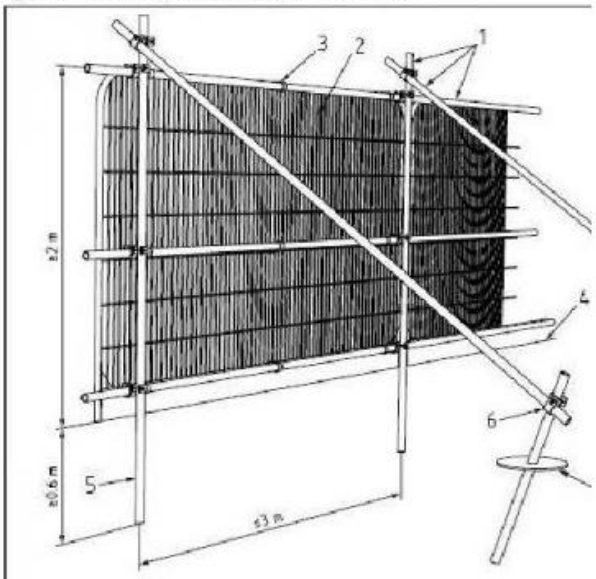
4.3 Any additional tree works identified as being necessary during the course of the development will only be carried out with the consent of the LPA.

5. **Securing of Tree Structure and Root Protection Areas (RPA)**

5.1 Before the commencement of any works on site (other than any preliminary tree works as detailed above) protective fencing will be erected as shown on 'Tree Protection Plan' drawing in **Appendix D**. The LPA will be notified in writing once the fencing is in place.

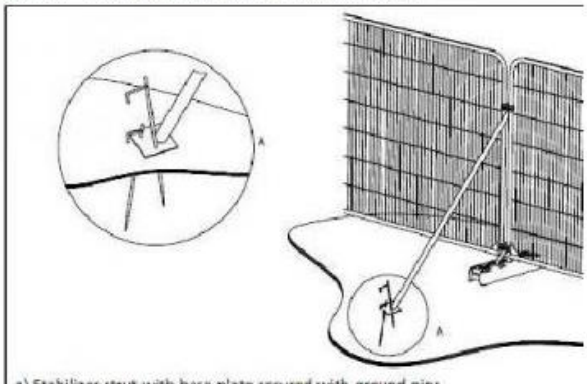
5.2 The fencing will comprise a minimum of 2.3 meter high stout barrier fencing (Heras) or scaffold framework supporting weld-mesh fencing as detailed below:

Figure 2 **Default specification for protective barrier**

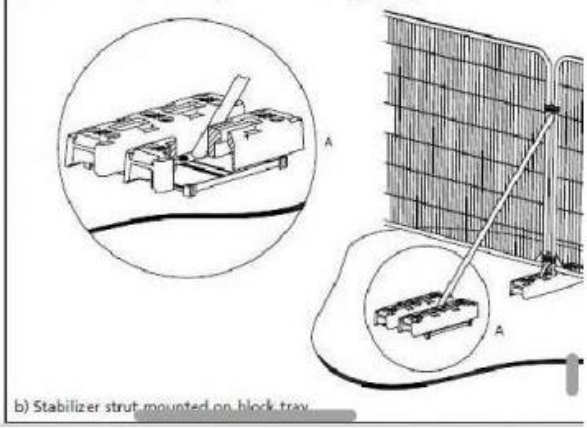


Key
1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Figure 3 **Examples of above-ground stabilizing systems**



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

5.3 All-weather notices will be displayed on the protective fencing identifying them as tree protection measures (example notice in **Appendix A**).

5.4 Other than works detailed within this method statement or approved in writing by the LPA, no works (including any vehicular movements, storage or dumping of materials, stripping of soil) will take place within the exclusion zones defined by the protective fencing. This is to reduce to a minimum compaction of the root systems.

6. **Works within the RPA**

6.1 No excavation works will be undertaken within the Root Protection Areas of any trees other than those as indicated in **Appendix D**.

6.2 Excavation works will be kept to a minimum where close to the edges or within the plotted Root Protection Areas (RPA) and will be undertaken with the use of 'Microlite Excavator' or similar to avoid the use of heavy plant machinery which may otherwise cause unwanted ground compaction within the RPA. Any excavated soil will be stored outside of the RPA.

6.3 In the event that any root systems are encountered within the excavation area they will be pruned by a suitably qualified arboriculturalist following the methodology in **Appendix B**.

7. **General Precautions**

7.1 No materials that are likely to have an adverse effect on tree health such as oil, bitumen or cement will be stored or discharged within the RPA.

7.2 Allowance will be made for any slope of the ground to ensure that damaging materials such as concrete washings, mortar or diesel oil is prevented from running towards trees. Protective sheeting must be used in and around any areas of concrete mixing to protect the soil in the event of spillage.

7.3 No fires will be lit in a position where their flames can extend to within 5 metres of the foliage, branches or trunk of any tree that is to be retained.

7.4 Notice boards, telephone cables or other services will not be attached to any part of the trees to be retained.

Appendix A


TREE PROTECTION AREA
KEEP OUT !
(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION
ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY


PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.

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Our GroundMatz trackway panels are used daily throughout the UK across a wide range of industries including civil engineering, landscaping, golf course and sports field maintenance, holiday home parks, heritage and archaeological sites and a multitude of other applications. This enables more efficient and safer working conditions whilst at the same time promoting a more professional image to clients and customers.

We keep stock of temporary trackway panels for purchase and hire ready for immediate dispatch or collection, and can deliver using our own transport, nationwide pallet delivery companies or if your prefer, your own transport.

For more information on GroundMatz – contact us on 08456 800008.

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Hire GroundMatz

Our anti slip traction panels are available for temporary road hire at a rate of £1.00 per panel per day (subject to a minimum charge of £10.00 per panel) and a minimum order value of £250.00 excluding delivery charges.

Panels sent out are securely strapped to a timber pallet or steel stillage. A nationwide delivery service is available either via our own transport or the pallet delivery network, with each pallet holding a maximum of 30 panels and weighing approximately 1100 kg. It is the Hirer's responsibility to to provide suitable pallet-lifting machinery.

Appendix B

Notes:

Root Pruning –

Any exposed tree roots encountered during works should be cleaned, cut and trimmed to allow quicker recovery and re-growth of the root system.

Root pruning is a very specialized operation that should only be undertaken with the support and supervision of an arboriculturalist or tree surgeon. Severance of root stems greater than 25mm diameter should be avoided where possible. Pruning of buttress or other major roots can make the tree unstable. Severance of more than 30% of a tree's root system is quite likely to cause slow dieback and eventual death of a mature tree.

APPENDIX C

Additional Advisory Information

C.1 Trees are living organisms the health, condition and structural integrity of which is liable to change, possibly within very short time-scales. I would therefore recommend that regular inspections of the trees are undertaken on an annual basis by an appropriately qualified and experienced arboriculturalist.

C.2 No absolute guarantee can be given on the structural integrity of any tree. Extreme climatic conditions can, on occasions, cause damage to trees which appear to be healthy and sound. If for any reason you have reason to doubt the health and/or condition of any tree I would recommend that you immediately seek the advice of an appropriately qualified and experienced arboriculturalist.

C.3 Any tree works specified in this method statement should only be carried out by an appropriately qualified, experienced, equipped and insured arborist (tree work contractor). The works should be carried out in line with current industry best practice and at a very minimum to the standards detailed in BS5837:1989 'Tree Work'.

C.4 Where trees are covered by a Tree Preservation Order or located in a Conservation Area it will be necessary to consult the local planning authority to gain their consent before any pruning works other than certain exemptions can be carried out. The works specified within this document are those submitted in support of the original planning application and it is likely that they are included within any consent for the re-development of the site. However, there are possible exceptions to this and approval for the works should be confirmed with the local planning authority before carrying out works to any protected trees on the site.

C.5 The Wildlife and Countryside Act 1981 makes it an offence to kill, injure or take any wild bird and to take, damage or destroy any nest that is either in use or being built. It is also an offence to take or destroy wild bird eggs of any species. The Act also affords protection to bats making it illegal to intentionally injure or kill a bat, or to damage, disturb or obstruct access to a roost. No works to trees should therefore be authorised or carried out that would be likely damage, disturb of destroy any species protected by the Wildlife and Countryside Act.

Appendix D- Development Notes

BS5837: 2012 states:

In order to avoid disturbances to the physical protection forming the construction exclusion zone once it is installed, it is essential to consider, make allowances for and plan all construction operations which will be undertaken in the vicinity of the trees, in particular:

a) Site construction access;
b) The intensity and nature of the construction activity;
c) Contractor's car parking;
d) Phasing of construction works;
e) The space needed for all foundation excavations and construction works;
f) The availability of special construction techniques;
g) The location and space needed for all service runs including foul and surface water drains, land drains, soakaways, gas, oil, water, electricity, telephone, television or other communication cables;
h) All changes in ground level, including the location of retaining walls, steps and making adequate allowance for foundations of such walls and backfilling's;
i) Spaces for cranes, plant, scaffolding and access during works;
j) Space for site huts, temporary latrines (including their drainage) and other temporary structures;
k) The type and extent of landscape works which will be needed within the protected areas and the effects these will have on the root system;
l) Space for storing (whether temporary or long-term) materials, spoil and fuel and the mixing of cement and concrete;
m) The effects of slope on the movement of potentially harmful liquid spillages towards or into protected areas.

Appendix E- BS 5837: 2005 - Types of hard surfaces and their suitability in proximity to trees

General

If a hard surface is proposed above the granular material, a permeable and gas-porous finished surface (wearing course) should be installed. In some situations, consideration should be given to constructing the final surface prior to the main building works, so as to provide protection for the roots at subsequent stages. However, it may be desirable to protect the final surface from drainage with a temporary covering.

Washed gravel

Washed gravel retains its porosity unless excessively consolidated and is particularly useful where changes of level occur or an irregular shape is needed around the stem of a tree. Gravel is easily renewed or topped up. Although weeds may become established, they can be controlled by chemical or mechanical means. However, gravel is rarely suitable for use where there is vehicle or pedestrian traffic for example, in residential areas. Materials with a high fines content, such as binding gravels or hoggin, should not be used due to their almost impermeable texture when consolidated.

Paving slabs and block pavers

Paving slabs and block pavers are available with built in infiltration spaces between the slabs or blocks. These are ideal, though they should be laid dry-jointed on a sharp sand foundation to allow air and moisture to penetrate to the rooting area.

In situ concrete

As in situ concrete forms an impermeable surface, falls and openings should be provided for water and air to enter the soil. This can be achieved by forming 50mm diameter holes in the construction of a slab at regular spacing's of 300-600mm (as determined by an engineer) and back-filling the resulting holes with no-fines gravel or aggregate. A high standard of material and workmanship is needed if frost damaged and excessive wear are to be avoided.

Bitumen paving

Bitumen paving can consist of porous or impermeable material. As the interstices in unsealed tar paving will eventually become blocked by silt, all such paving should be laid following the same principles as those for impermeable surfaces. Its use within the RPA should, therefore, be restricted to the following parameters: new impermeable surfacing within the RPA should be restricted to a maximum width of 3m and situated tangentially to one side of a tree only, or confined to an area no greater than 20% of the RPA whichever is smaller.

Edge supports

The excavation needed for the placement of kerbs, edgings and their associated foundations and haunching's can damage tree roots. Within the RPA, this should be avoided either by the use of alternative methods of edge support or by not using supports at all. For example, where kerbing is required for light structures, such as footpaths, peg and board edging may be acceptable. For more substantial structures, such as estate roads, railway sleepers may be acceptable, retained in place

with track pins or road pins. In some situations, for example where the roadway needs to traverse a lateral slope, gabions could be used to provide a kerbing solution (in this example, the gabions are installed on the down-hill side of the road). Gabions can be inter-linked, or pinned in place. Where it is necessary to pin kerbing in place, the pins should, where practical, be located clear of any major tree roots visible on the surface.

Appendix F

Tree Protection Plan TPP-

Greenleaf Ltd- Preliminary Arboricultural Implications Assessment including Tree Survey Data, a Tree Constraints Plan as Prescribed in BS 5837:2012 “Trees in Relation to Design, Demolition and Construction”.