



Knowsley Metropolitan Borough Council

GRACE PARK

Arboricultural Impact Assessment P02





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1 INTRODUCTION

1.1 PROJECT BACKGROUND

- 1.1.1. WSP has been instructed by Knowsley Metropolitan Borough Council to provide arboricultural support for Grace Park (hereafter referred to as the 'Proposed Development') which forms part of the Halewood Levelling Up Fund (LUF) project: This comprises of:
- Full planning permission for the external landscape and public realm works including the creation of two artificial grass playing pitches with associated fencing and infrastructure, a flexible use civic plaza, a clubhouse with changing facilities and café facilities, a car park with associated EV charging points, floodlighting, CCTV, general landscaping improvements, including a shared use pedestrian/cycle route, further circulation routes in addition to the shared route, acoustic fencing, a feature play area, sustainable drainage works, and an area of hardstanding to include a temporary construction compound.

1.2 SCOPE OF REPORT

- 1.2.1. The purpose of this report is to identify all trees which may be affected by the Proposed Development, to assess the impact of the Proposed Development upon those trees and to recommend such protection measures as are necessary to ensure the health of retained trees.
- 1.2.2. The scope and level of detail included within this report is commensurate with that required for the consideration of arboricultural features as part of the Proposed Development.
- 1.2.3. Information provided complies with the requirements of British Standard BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* (BS 5837), and includes reference to the following:
- results of a BS 5837 arboricultural survey;
 - an Arboricultural Impact Assessment (AIA); and,
 - an Outline Arboricultural Method Statement (AMS).
- 1.2.4. Impacts should be defined as an assessment of arboricultural removals and identification of matters to be addressed within an AMS.

1.3 LIMITATIONS

- 1.3.1. Provisional Tree Preservation Orders (TPOs) may be made whenever a local planning authority deems it appropriate with only those persons interested in the land served with a copy of the Order. Because of this, any reference to the presence of TPOs is only valid on the date at which the desk study search was undertaken. In instances where works unspecified in this report are to be undertaken, and which may impact trees, a further search for the presence of TPOs should be carried out prior to commencement.
- 1.3.2. Trees are dynamic organisms which are influenced by a variety of environmental variables and whose health and condition can rapidly change. Because of this, any recommendations made within this report are valid for a period of 24 months from the date of survey, when any site conditions change or pruning or other works unspecified in the report are carried out to, or affecting, the subject trees, whichever is the sooner.

- 1.3.3. This report does not constitute a health and safety survey. Where concerns for tree health and safety exist then necessary and appropriate tree inspections should be carried out.
- 1.3.4. Assessment of statutory and non-statutory constraints have been carried out using third-party information and aerial imagery with a combination of Google Earth and Google Streetview. While this is deemed to be broadly accurate, in some instances no specific date is given for the information and images used.

1.4 RELEVANT LEGISLATION, POLICY AND GUIDANCE

- 1.4.1. This report has been compiled with reference to the following legislation, policy and guidance:

LEGISLATION

- The Town and Country Planning Act 1990
- Town and Country Planning (Tree Preservation) (England) Regulations 2012
- Forestry Act 1967
- The Natural Environment and Rural Communities (NERC) Act 2006
- The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024

POLICY

- National Planning Policy Framework (NPPF) (updated 20 December 2023)
- Knowsley Local Plan Core Strategy (January 2016)

GUIDANCE

- British Standards Institute. BS 3998: 2010 Tree Work – Recommendations. London: BSI
- British Standards Institute. BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations. London: BSI
- Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government, Tree Preservation Orders and trees in conservation areas (2014)
- Knowsley Trees and Development Supplementary Planning Document (June 2016)

1.5 ABBREVIATIONS OF TERMS USED

Table 1-1 – List of abbreviations used within this report

Abbreviations	Definition
ACoW	Arboricultural Clerk of Works
AIA	Arboricultural Impact Assessment
AMS	Arboricultural Method Statement
BS 5837	British Standard BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.
CEZ	Construction Exclusion Zone.
NJUG	National Joint Utilities Group

Abbreviations	Definition
RPA	Root Protection Area
TRPP	Tree Removal and Protection Plan
TPO	Tree Preservation Orders

2 METHODOLOGY

2.1 ARBORICULTURAL STUDY AREA

- 2.1.1. The Site is located between Wood Road and Leather's Lane, Halewood, Liverpool and centred on National Grid Reference SJ 44698 85245. The extents of the Site are shown by the Red Line Boundary (RLB) in the TRPP of Appendix C.
- 2.1.2. The arboricultural study area is defined by the red line boundary plus a further area of up to 15m. The purpose of this 15m beyond the red line boundary is to ensure compliance with BS 5837 which recommends that all arboricultural features whose Root Protection Areas (RPAs) may be impacted are identified and surveyed. BS 5837 has a maximum RPA radius of 15m, hence the extent of the study area.

2.2 BASELINE DATA COLLECTION

- 2.2.1. Baseline data collection has been undertaken with reference to BS 5837 and has been undertaken using the following data sources:
- an arboricultural desk study; and
 - a field-based survey of arboricultural features within the study area.

2.3 DESK STUDY

- 2.3.1. A desk study was undertaken November 2024, to identify specific statutory and non-statutory arboricultural constraints which may apply to arboricultural features within the Study Area. The desk study, as outlined in Appendix A, was undertaken to establish the following statutory and non-statutory arboricultural constraints.
- tree preservation orders;
 - conservation areas;
 - ancient woodland; and
 - ancient or veteran trees.

2.4 BASELINE SURVEY

- 2.4.1. An arboricultural baseline survey of trees within the Study Area was undertaken on 29 September 2023. The survey was undertaken to comply with BS 5837 and details of the method used are presented in Appendix A.
- 2.4.2. Notwithstanding 1.3.2. (above) it is assumed that the baseline data remains suitably accurate for the purposes of this report revision.
- 2.4.3. Where access to vegetation was restricted, stem diameters have been estimated as indicated by the 'e' suffix in the arboricultural survey schedules of Appendix B.

2.5 PROVIDED DESIGN INFORMATION

- 2.5.1. The following information has been viewed and used to prepare this report and arboricultural assessment:
- General Arrangement: *Design Layout Grace Park 141125.dwg*

3 ARBORICULTURAL SURVEY FINDINGS

3.1 DESK STUDY FINDINGS

- 3.1.1. The desk study found no TPOs nor conservation areas within Study Area. The desk study also found no records of ancient or veteran trees, nor ancient woodland within the Study Area.

3.2 GENERAL SITE DESCRIPTION

- 3.2.1. The Site's southern and north-eastern extents border residential properties and its western and south-eastern extents margin public highways. The eastern half of the Site contains two playing fields and various outbuildings which are enclosed by metal palisade fencing. The western half of the Site mainly contains grassed open space plus playground equipment and footpaths. The topography of the Site is generally level but contains two raised mounds and a pond.

3.3 BASELINE SURVEY FINDINGS

- 3.3.1. An arboricultural survey schedule detailing information about trees in the Study Area is presented at Appendix B. Table 3-1 summarises the number of trees surveyed and their tree quality categories. The locations of arboricultural features are shown on the Tree Removal and Protection Plan (TRPP) of Appendix C.

Table 3-1 – Summary of tree quality categories

BS5837 Quality	Category	Trees	Groups	Total
High	A	0	1	1
Moderate	B	4	5	9
Low	C	7	7	14
Very Low	U	1	0	1
	Total	12	13	25

- 3.3.2. Additionally, the Site contains approximately 80-100 young trees which are mostly planted and supported by tree stakes and ties. These trees were not of sufficient stem size to be included in the BS 5837 arboricultural survey.

4 ARBORICULTURAL IMPACT ASSESSMENT

4.1 SCOPE OF ASSESSMENT

- 4.1.1. The scope of this assessment has been established with reference to BS 5837. The scope of assessment is to evaluate the effects of the Proposed Development on arboricultural features and where necessary recommend mitigation.
- 4.1.2. The assessment includes specific reference to the effects of tree loss and other potentially damaging activities which could foreseeably occur in the vicinity of retained trees. Further reference is made concerning recommendations for mitigation, including those matters which require inclusion within an AMS.

4.2 ASSUMPTIONS AND LIMITATIONS

- 4.2.1. This AIA report has been compiled on the basis of the following assumptions:
- All construction and demolition activities will be confined to the planning application boundary of the Proposed Development.
 - All construction and demolition activities will be excluded from Construction Exclusion Zones (CEZ) identified on the TRPP.
 - Existing areas of hard surfacing will remain in-situ or be utilised for construction access, site compounds and material storage as specified in this AIA.
- 4.2.2. The following limitations apply to this AIA report:
- Enabling works (such as the installation or diversion of services by statutory undertakers within the RLB) have not been considered.
 - Where the location of arboricultural features is not recorded in topographic surveys they have been indicatively plotted using aerial imagery relative to other Site features. The accompanying TRPP therefore has features plotted with approximate locations only which could have an error of up to 5m.

4.3 ARBORICULTURAL FEATURES TO BE REMOVED

- 4.3.1. The Proposed Development in relation to arboricultural features is shown in the TRPP of Appendix C. The Proposed Development would result in the removal of three moderate quality groups (G8, G9 and G10), one low quality tree (T4) and two low quality groups (G5 and G11).
- 4.3.2. The removal of these features is due to the location of the trees and groups directly within the extents of proposed hardstanding and areas to be excavated as part of landscaping.
- 4.3.3. Additionally, the removal of approximately 50-60 young trees is required to facilitate development as proposed, due to their location within the footprint of the sports areas and associated hardstanding access and car park. Some of these trees may be suitable for transplanting within the wider site, dependant on tree and soil condition.

4.4 ARBORICULTURAL FEATURES TO BE PRUNED

- 4.4.1. There are no current requirements to undertake tree pruning to facilitate development. However, if during development, the need for canopy reduction and/or lift pruning is identified, written approval from the Local Planning Authority will be required.
- 4.4.2. All tree works undertaken will be under the supervision of ACoW and must comply with British Standard 3998:2010 – *Tree Work Recommendations* and should therefore be carried out by skilled tree surgery contractors.

4.5 IMPACTS ON RETAINED ARBORICULTURAL FEATURES

- 4.5.1. Other arboricultural impacts are activities which have the potential, if uncontrolled, to cause damage to arboricultural features which are retained. Implementation of the recommended mitigatory measures would be sufficient to ensure that arboricultural features can be retained without significant loss of value or a notable reduction in health or longevity.

ABOVE GROUND IMPACTS

- 4.5.2. During demolition and construction work there is potential for the stem and branches of retained arboricultural features to be damaged by the contractor making physical contact. Such damage can reduce vitality and cause decline in health. To prevent above ground damage to arboricultural features a tree protection fencing should be established as per the TRPP in Appendix C inline with the AMS recommendations. The AMS recommendations should be in effect throughout the duration of demolition and construction with appropriate levels of arboricultural supervision where work is near trees.
- 4.5.3. To prevent above ground damage to arboricultural features a construction exclusion zone (CEZ) should be established. The AMS recommendations should be in effect throughout the duration of demolition and construction with appropriate levels of arboricultural supervision where work is near trees.
- 4.5.4. Pruning may be required to enable access for construction along with pruning to ensure clearance for users of cycling and walking facilities. Any pruning must be specified by an arboriculturist to ensure that the extent of work is suitable for the required purpose and for the tree health. Tree work should be set out within an AMS through detailed design.
- 4.5.5. Care should be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious damage to them and might make their safe retention impossible. Consequently, any transit or traverse of plant in close proximity to trees should be conducted under the supervision of a banksman to ensure that adequate clearance from tree canopies is maintained at all times.

BELOW GROUND IMPACTS

- 4.5.6. During demolition and construction work there is potential for soil compaction and root damage caused by contractors. This could cause loss of vitality and decline in health with a reduction in quality of tree and potential instability or death of trees.
- 4.5.7. To prevent below ground damage to arboricultural features a CEZ has been established within the TRPP in Appendix C. this should be in place for the duration Proposed Development which is

demarcated by a tree protection fence. Where access is required as well as the establishment of a work areas and storage facilities, then temporary ground protection measures could be installed to prevent soil compaction and root damage.

- 4.5.8. The indicative RPAs are based on a symmetrical circle and are shown in the TRPP. For groups of trees the RPA is based on a distance from the plotted group extent which represents tree stem locations. These RPAs are indicative, and the shape can be adjusted by an arboriculturist to ensure that sufficient area, and therefore soil volume, is protected.
- 4.5.9. Installation of new hard surfaces within the RPA of trees has a risk of causing harm to tree roots if it is not carefully designed and constructed with care. The TRPP at Appendix C highlights areas where new hard surfaces are being created within the RPA, these locations require Special Construction Measures to avoid excessive harm to trees.

SPECIAL CONSTRUCTION MEASURES

- 4.5.10. This revision of the report requires no Areas of Special Construction Measures; however, if site operations are necessary within RPA, advice should be sought from the project arboriculturist, and Area of Special Construction Measures should be imposed along with specific working methodology devised to mitigate the potential impact.

4.6 COMPENSATION PLANTING

- 4.6.1. It will be necessary to remove three moderate quality and three low quality arboricultural features to facilitate construction of the Proposed Development. It is achievable for compensatory planting to be accommodated within Grace Park as there is ample open amenity space and opportunity to improve the arboricultural resource on site. The general arrangement is illustrated in the TRPP at Appendix C, this shows that many new trees, shrubs and bushes are to be planted on site as a part of the Proposed Development.

4.7 ARBORICULTURAL METHOD STATEMENT

- 4.7.1. An outline AMS is included in Appendix D. The AMS adopts a precautionary approach to tree protection and addresses activities which have the potential to cause damage to retained trees.
- 4.7.2. The AMS addresses, in principle, the following matters which are of relevance to the Proposed Development:
 - arboricultural site supervision;
 - tree works;
 - tree protection fencing;
 - hand excavation;
 - new permanent hard surfacing within root protection areas; and,
 - additional precautions outside the CEZ.
- 4.7.3. It is recommended that this AMS be viewed as a 'living document'. It should therefore be reviewed, and if necessary, updated at the following stages of design and construction:
 - Detailed design and discharge of conditions or reserved matters;
 - Contractor engagement;
 - Pre-commencement; and,
 - Prior to any instance where the site clearance or construction methodology is amended.

- 4.7.4. It is anticipated that a pre-commencement site meeting would be required with the Local Planning Authority Tree Officer to confirm tree protection measures.

5 SUMMARY AND CONCLUSIONS

- 5.1.1. An arboricultural walkover survey of the study area was undertaken on 29 September 2023. The arboricultural survey was undertaken in accordance with BS 5837 and arboricultural features were plotted using topographical survey information and aerial imagery.
- 5.1.2. The desk study found no record of TPOs, conservation areas, ancient/veteran trees, nor ancient woodlands within the Study Area.
- 5.1.3. A total of 25 arboricultural features, consisting of 12 trees and 13 tree groups. One arboricultural feature is assessed to be high quality, nine features are moderate quality, 14 features are low quality, and one feature is very low quality.
- 5.1.4. The Proposed Development in relation to arboricultural features is shown in the TRPP of Appendix C. The Proposed Development would result in the removal of three moderate quality groups (G8, G9, G10), one low quality tree (T4) and two low quality groups (G5, G11).
- 5.1.5. All other arboricultural features can be retained and protected through demolition and construction. Principles for tree protection are set out in an outline AMS at Appendix D which includes the need for arboricultural supervision, tree works, tree protection fencing, hand excavation, new permanent hard surfacing within RPAs, and additional precautions outside the CEZ.

Appendix A

METHODOLOGY



SURVEY METHODOLOGY

METHOD OF BASELINE DATA COLLECTION

Baseline data collection has been undertaken with reference to BS 5837 and has been undertaken using the following data sources:

- An arboricultural desk study, and;
- An arboricultural survey of all arboricultural features within the study area.

DESK STUDY

The desk study for the Proposed Development was undertaken on 15 November 2024.

The desk study reviewed existing arboricultural information available in the public domain. The desk-study has considered the following sources:

TPOs

Knowsley Metropolitan Borough Council is responsible for implementing any legal controls imposed through TPOs within the study area. The location of TPOs is information publicly accessible on their website¹ which was accessed on 15 November 2024.

Conservation Areas

Knowsley Metropolitan Borough Council is responsible for implementing any legal controls imposed through conservation areas within the study area. The location of conservation areas is information publicly accessible on their website² which was accessed on 15 November 2024.

Ancient woodland

The potential presence of ancient woodland within the study area was checked using the web based Multi Agency Geographic Information for the Countryside (MAGIC) map database which was accessed on 15 November 2024³.

Ancient and Veteran Trees

The potential presence of ancient and veteran trees within the study area was checked using the Woodland Trust's Ancient Tree Inventory⁴ which was accessed 15 November 2024.

¹ [Planning and Tree Preservation Orders \(TPO\) portal | Knowsley Council](#) [Accessed 15 Nov 2024]

² [Planning and Tree Preservation Orders \(TPO\) portal | Knowsley Council](#) [Accessed 15 Nov 2024]

³ Magic (DEFRA), *Multi Agency Geographic Information for the Countryside* [online] Available at: < <https://magic.defra.gov.uk/MagicMap.aspx> > [Accessed 15 Nov 2024]

⁴ Ancient Tree Inventory, 2024. *Ancient Tree Inventory* [online] Available at: < <https://ati.woodlandtrust.org.uk> > [Accessed 15 Nov 2024]

ARBORICULTURAL SURVEY

An arboricultural survey was undertaken on 29 September 2023 with aerial imagery and topographical survey used as base mapping.

The arboricultural survey was undertaken in accordance with the following criteria:

- Arboricultural features have been recorded as tree groups or linear areas where this has been deemed appropriate. Tree groups have been recorded on the basis that they form distinct arboricultural features either aerodynamically, visually or because they contain trees of similar cultural and biodiversity value.
- The trees have been visually inspected from ground level only;
- No tissue samples were taken nor was any internal investigation of the subject trees undertaken;
- Tree heights and crown spreads have been estimated to the nearest 1m;
- Notes have been recorded where they relate to the quality of the arboricultural feature;
- Management recommendations have been provided where work is necessary for the abatement of a hazard which presents a high level of risk to persons or property. Such management recommendations have been communicated to the tree owner/manager separately from this report;
- Stem diameters have been measured in accordance with Annex C of BS 5837;
- Diameters of single stem trees on level ground have been measured at 1.5m above ground level. The diameters of other commonly encountered stems have been measured as per the guidance. The combined stem diameters for multi-stemmed trees have been calculated in accordance with BS 5837 paragraph 4.6.1.
- By default, Root Protection Areas (RPAs) are calculated as an area equivalent to a circle with a radius 12 times the stem diameter and are capped at a distance of 15 metres.

QUALITY ASSESSMENT

The quality of arboricultural features has been determined in accordance with BS 5837 Table 1 a copy of which is provided in Figure A-1. The purpose of the quality assessment is to enable informed decisions to be made regarding the removal and retention of arboricultural features in the context of development. For an arboricultural feature to be included within a particular quality category it should accord with the description provided.

The quality of each arboricultural feature is defined based on its sub-category. Sub-categories carry equal weight, do not influence retention priority and are simply included to indicate the primary value associated with each surveyed item. Sub-categories 1, 2 and 3 are intended to reflect arboricultural, landscape and cultural values, respectively.

The quality and sub-category assigned to each arboricultural feature are identified within the Arboricultural Survey Schedule included in Appendix B of this report.

Figure A-1 - BS 5837 Table 1 - Cascade Chart for Tree Quality Assessment

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 <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>			See Table 2
	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)	See Table 2
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	See Table 2
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	See Table 2

NOTES AND LIMITATIONS

Arboricultural survey data is of a preliminary nature and has been collected based on a field-based survey.

Only defects visible from the ground have been noted and each individual feature may not have been inspected closely due to access difficulties, the presence of dense ivy, other vegetation or safety constraints. Safety related features have not been recorded on the basis that the arboricultural features will be subject to a normal programme of tree hazard assessment and only those features which materially affect the quality of the feature or pose a real and immediate safety concern have been recorded.

Arboricultural survey data is typically valid for a period of two years unless otherwise stated. Significant environmental events (such as extreme weather conditions) or changes to the Site may render it invalid within a shorter timescale.

Records held on the Ancient Tree Inventory are collected on a voluntary basis, therefore the absence of records does not demonstrate the absence of ancient or veteran trees but may simply indicate a gap in recording coverage.

Whilst arboricultural surveys are not seasonally limited it is the case that certain pests and diseases may be more or less evident at different times of the year. This is especially true of certain wood decaying fungi such as the Giant Polypore (*Meripilus giganteus*) where fruiting bodies are short-lived, and the early stages of root decay may not result in other identifiable symptoms. Field-based survey data is therefore based upon observations made at the time of the site visit and may be subject to change should further or more detailed inspections be undertaken.

The survey has only been undertaken from land within the client's ownership, from public land or from areas where formal access has been arranged.

The position of arboricultural features not recorded on a topographical survey has been estimated using aerial photography. The position and extent of these features should be regarded as approximate only.

Appendix B

ARBORICULTURAL SURVEY SCHEDULE



SURVEY SCHEDULE EXPLANATORY NOTES

REFERENCE ABBREVIATIONS

- T – Tree
- G – Group

MEASUREMENTS

Height is estimated to provide a relative indication of tree size.

Stem Diameter are in accordance with BS 5837 paragraph 4.6.1, Annex C. Stem diameter for the group is the largest size within the tree group. Abbreviations used:

- e – Estimated

Crown spread for individual trees and groups was estimated in the four cardinal points.

LCH – lowest canopy height. It is an estimate of the lowest point of foliage above ground level of the tree indicating the clearance below the tree.

LBH – lowest branch height. It is the height above ground level of the first branch union with the main stem of the tree.

ASSESSMENTS

Life stage: Y – Young, SM – Semi-mature, EM – Early Mature, M – Mature, V – Veteran

Physiological condition: G – Good, F – Fair, P – Poor, D – Dead

Structural condition: G – Good, F – Fair, P – Poor

ERC - Estimated remaining contribution: <10 years, 10+ years, 20+ years or 40+ years.

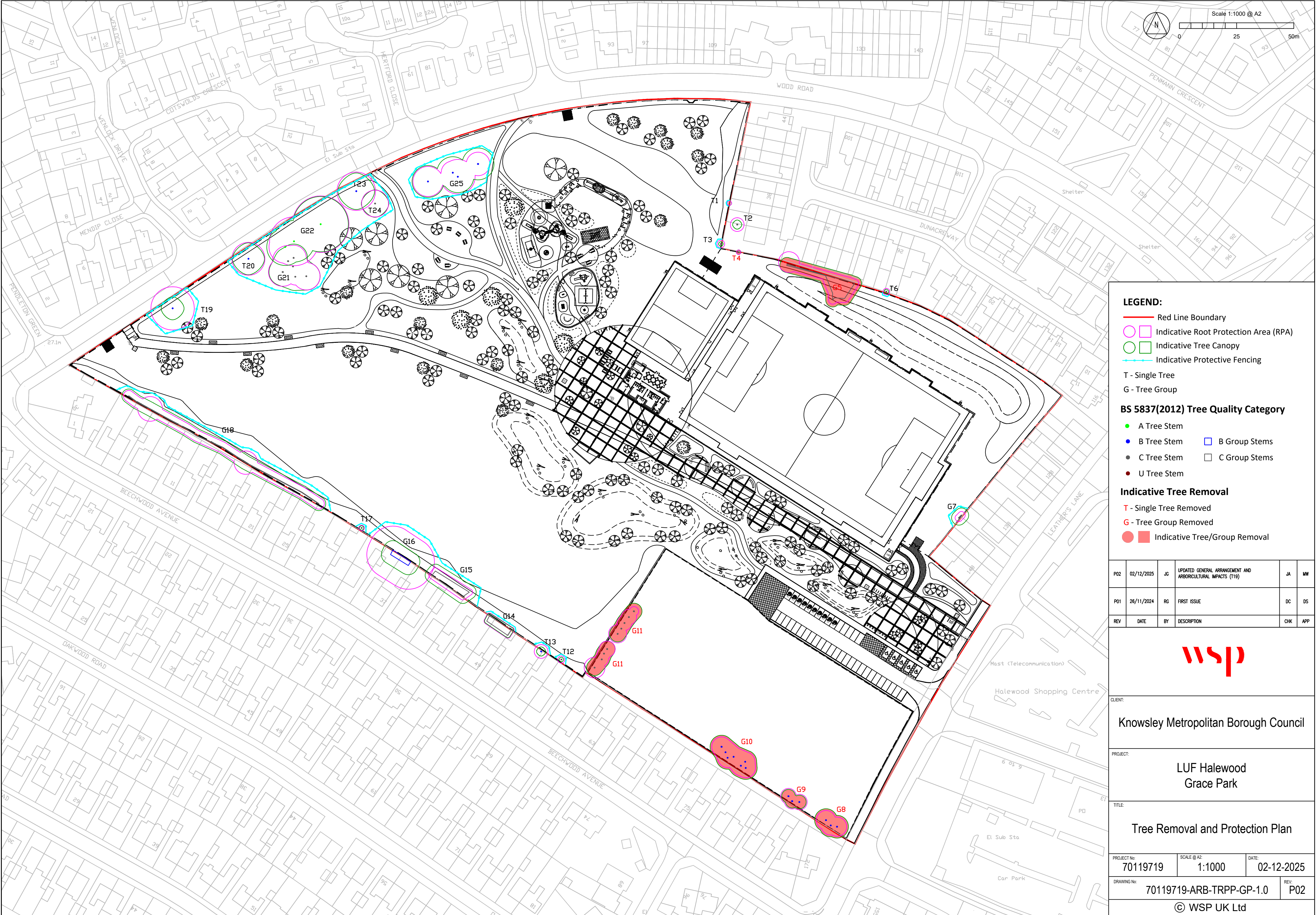
BS 5837 Category: A, B, C or U with sub-category recorded as 1, 2 or 3.

RPA Radius is the radius of a circular Root Protection Area associated with the tree as measured from the centre of the stem. For arboricultural features, where more than one stem diameter is recorded the RPA radius is calculated using the largest dimension. Unless otherwise noted the RPA for groups is based on the equivalent RPA for the largest tree in that group.

Appendix C

TREE REMOVAL AND PROTECTION PLAN





LEGEND:

- Red Line Boundary
- Indicative Root Protection Area (RPA)
- Indicative Tree Canopy
- Indicative Protective Fencing
- T - Single Tree
- G - Tree Group

BS 5837(2012) Tree Quality Category

- A Tree Stem
- B Tree Stem
- C Tree Stem
- U Tree Stem
- B Group Stems
- C Group Stems

Indicative Tree Removal

- T - Single Tree Removed
- G - Tree Group Removed
- Indicative Tree/Group Removal

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CLIENT:
Knowsley Metropolitan Borough Council

PROJECT:
LUF Halewood Grace Park

TITLE:
Tree Removal and Protection Plan

PROJECT No: 70119719	SCALE @ A2: 1:1000	DATE: 02-12-2025
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Appendix D

OUTLINE ARBORICULTURAL METHOD STATEMENT



OUTLINE ARBORICULTURAL METHOD STATEMENT

INTRODUCTION

This, heads of terms, outline AMS describes arboricultural protection measures to protect retained trees as part of the Proposed Development. An AMS is a dynamic document that shall be reviewed prior to the issuing of any tender documentation. It shall be revised to accommodate any design amendments or known construction methodologies and must be read in conjunction with the Tree Removals and Protection Plan included within Appendix C of this report.

ARBORICULTURAL SITE SUPERVISION

Effective tree protection can only be achieved by adherence to a logical sequence of works combined with effective arboricultural supervision. The purpose of arboricultural monitoring is to ensure that all tree protection measures are fit for purpose, are implemented in accordance with any approved details and as a means of enabling any previously unforeseen arboricultural issues to be promptly identified and suitably addressed.

An Arboricultural Clerk of Works (ACoW) shall be appointed to oversee the tree protection during the demolition and construction phase.

The role of the ACoW is to:

- Advise the client and principal contractor on tree protection issues;
- Attend site as required to advise on variations;
- Supervise works undertaken within construction exclusion zones (CEZ);
- Inspect and report on the status of tree protection measures in place during the construction phase; and,
- Inform the client and principal contractor of any pruning works that may be needed to facilitate the works.

The ACoW shall attend site:

- Prior to commencement of works to ensure tree protection fencing is in place; and
- Periodically during the construction phase.

TREE WORKS

A schedule of identified tree works should be provided in a works schedule as shown below should tree works be identified, by an ACoW, to accommodate the Proposed Development:

Table D-1 - Example schedule of identified tree work.

Tree Reference	Tree Work
T4	Remove tree completely
G5, G8, G9, G10 and G11	Remove tree group completely

- All tree works shall adhere to British Standard BS 3998:2010 *Tree work – Recommendations*;
- All operations shall be carefully carried out to avoid damage to the trees being retained; and
- No trees to be retained shall be used for anchorage or winching purposes.

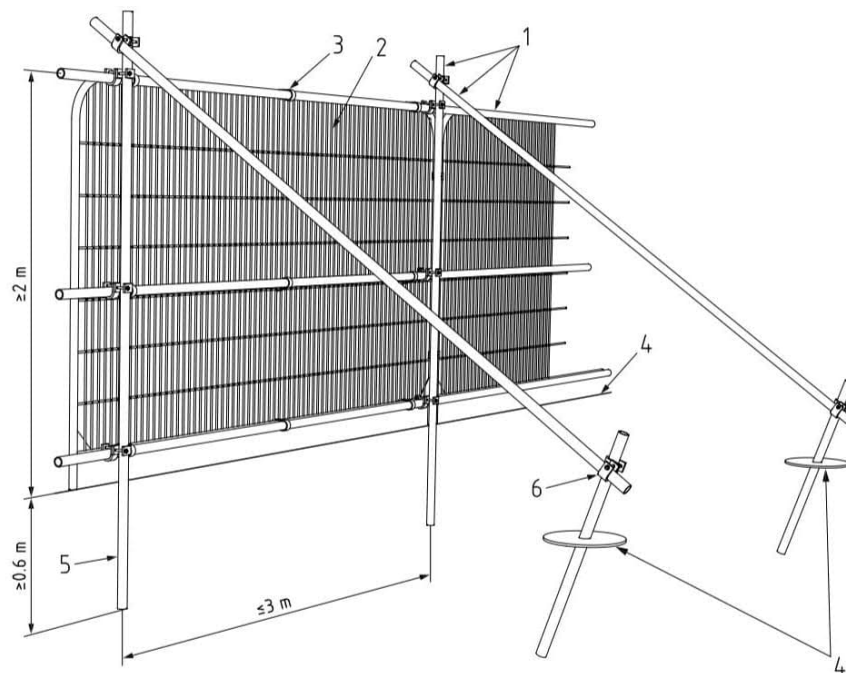
Should the requirement for a tree felling or pruning arise which is additional to that identified above then the following process shall be applied:

- Any specification shall be technically approved by the ACoW; and
- Written approval shall be obtained from the Local Planning Authority prior to implementation of the work.

TREE PROTECTION FENCING

Tree protection fencing shall be fit for the purpose of excluding construction activity and appropriate for the degree and proximity of work taking place. An example of the type of tree protection fencing which may be required is included in Figure AMS-1.

Figure AMS-1 - Example of appropriate tree protection fencing



Key:

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanised 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 0.6m)
6. Standard scaffold clamps

Tree protection fencing would be used to prevent access to the root protection areas (RPAs) of retained trees and this will form the CEZ. In all instances the following shall be adhered to:

- Tree protection fencing shall be erected prior to any works onsite including site clearance, groundwork or the importation of plant and materials;
- Tree protection fencing shall be erected in accordance with the layout shown on the Tree Removals and Protection Plan at Appendix C;

- All weather notices should be attached (at eye level) to the tree protection fencing at suitable intervals and shall include suitably sized informative text stating “Tree Protection Fencing, Construction Exclusion Zone – No Access”;
- Once erected tree protection fencing shall remain in-situ until construction activities are complete;
- No construction activities, storage of materials or pedestrian or vehicular access shall take place within the CEZ; and
- Regular daily checks should be carried out by an appointed person to ensure that all tree protection fencing is still in place and functioning; any damage should be rectified without delay.

HAND EXCAVATION

Soil within the RPA of retained trees shall be carefully removed using hand tools only. Spoil shall be deposited outside the root protection area. A trowel shall be used to loosen and remove soil in proximity to roots whilst a brush or compressed air shall be used to remove any soil which may adhere to the outside of any root.

Those excavations closest to the tree(s) shall be carried out first. These shall be undertaken under the direct supervision of the appointed ACoW. Hand excavations shall be carried out to a maximum depth of 0.6m, beyond which mechanical means may be employed should the project ACoW deem it acceptable.

If tree roots are uncovered, then they shall be treated in the following manner:

- Roots less than 25mm diameter shall be cleanly cut back to the edge of the excavation using a sharp saw or pair of secateurs.
- Roots greater than 25mm diameter shall only be severed following technical approval from an ACoW. If approval is given, then roots shall be cleanly cut back to the edge of the excavation using a sharp saw.
- Once excavation has reached the desired depth the final soil surface shall be inspected for the presence of roots which could become damaged during construction. The advice of the ACoW shall be sought regarding the most suitable means of protecting any roots which may have been identified.

NEW HARD SURFACING WITHIN ROOT PROTECTION AREAS

Purpose

To enable permanent hard surfacing to be installed without significant damage to retained trees. To prevent sudden changes to the rooting environment of retained trees thereby giving them time to adapt.

General requirements

The design of any new permanent hard surfacing should seek to comply with the following specification:

- Avoid the need for any excavation or lowering of soil levels other than the removal, using hand tools only, of any turf, surface vegetation or organic matter. Levels may be raised using a granular fill which will remain gas and water permeable for the duration of its design life.
- Avoid any localised compaction of the underlying soil by evenly distributing any anticipated loading over a suitably large area.

- Utilise a sub-base and wearing course that is permeable to air and water (this includes and separation membranes that may be required).
- Must not exceed 20% of any existing un-surfaced ground within the RPA.
- Should either avoid the need for the use of de-icing salt or, if undesirable, should include a system whereby contaminated run-off is directed outside of the RPA.
- Should be resistant to or tolerant of deformation by tree roots and should be set back from the stem and above ground buttressing of the tree by a minimum of 500mm to allow for growth and movement.
- Should be buildable without the need for machinery or plant to operate on areas of unprotected soil.

Timing

Permanent hard surfacing may be installed at any time during the development process provided that:

- Installation does not leave the root protection area at risk of damage (e.g. through the removal of protective fencing whilst other potentially damaging activities are taking place nearby).
- If it is to be used as temporary ground protection it is robust enough to withstand any anticipated loadings without deformation.

Specification

Design

- Hard surfacing should be designed by a structural engineer.
- Hard surfacing should utilise a sub-base formed from a three-dimensional cellular confinement system, an above ground slab supported by piles, pads or elevated beams or a permeable membrane/substrate capable of load bearing.
- Exploratory investigations to determine suitable locations for piles and pads should be undertaken as part of the design process.
- Hard surfacing should be designed to withstand deformation by tree roots and should be sufficient distance from the tree to account for future tree growth.
- Excavations associated with the installation of kerbs and edging should be avoided. Above ground products which can be pinned in place should be used in preference to those which require foundations and haunches. Examples include pegs and boards, sleepers and gabion baskets.

Construction

- Compaction of soil surrounding and beneath any new hard surfacing shall be prevented. This may be achieved through the use of temporary ground protection or by constructing the new surface with machinery working forward from the surface as it is constructed (i.e. "rolling out").
- Vegetation control beneath the new surface may be achieved via the use of herbicide to be applied in accordance with manufacturer's instructions or through the installation of a permeable weed inhibiting membrane.
- Loose organic matter may be removed using hand tools only.
- The soil surface should not be lowered to remove high spots. Soil levels may be raised using granular infill which will remain permeable to air and water for the duration of its design life.
- If uncured concrete is to be used, then an impermeable membrane will be required in order to prevent leachate from entering the surrounding soil.

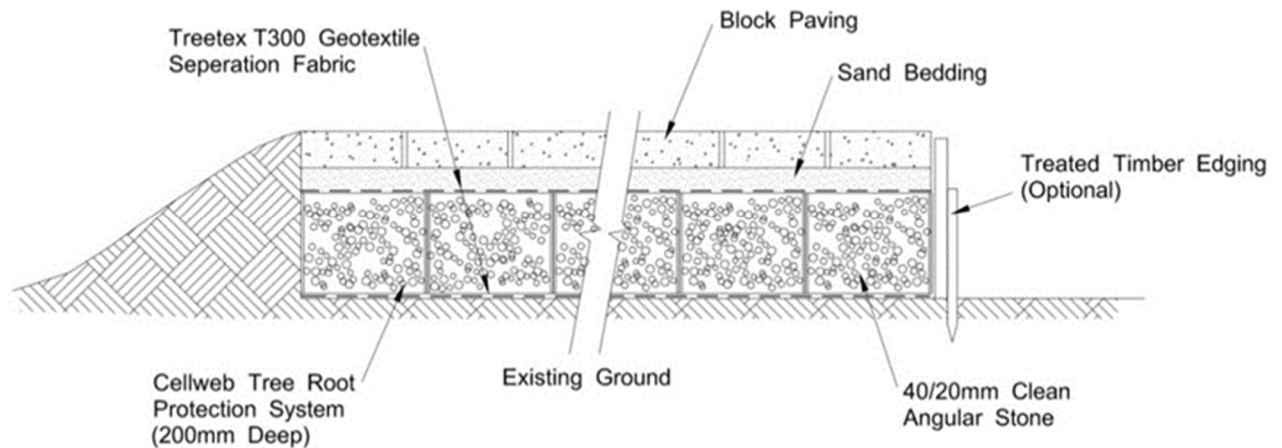


Figure A-1 - Illustrative cross-section of no dig hard surfacing utilising a cellular system

ADDITIONAL PRECAUTIONS OUTSIDE THE CEZ

A precautionary approach to working near retained trees shall be adopted with site huts, welfare facilities, parking, material / spoil storage, mixing and vehicle cleaning facilities being located outside of RPAs.

Care should be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Any transit or traverse of plant in close proximity to trees should be conducted under the supervision of a banksman to ensure that adequate clearance from trees is maintained at all times.

Notice boards, telephone cables or any other services shall not be attached to any part of a retained tree.

INSTALLATION OF UNDERGROUND APPARATUS AND SERVICE RUNS

Wherever possible any underground services (cabling and pipes) shall be located outside the RPA of any retained tree. Soakaways must not be located within RPA.

Wherever possible services shall be grouped together utilising common ducts and have all inspection chambers located outside of the RPA.

In situations where services must pass through the RPAs of a retained tree then trenchless techniques shall be used wherever possible with launch and receptor pits being located outside the RPAs.

Guidance within Volume 4: NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2:16 November 2007) shall be followed.



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