

Arboricultural Impact Assessment

in Relation to Proposed Installation of Drainage Pipe at



**Land off Barley Close, Whalley,
Lancashire, BB7 9XY**

Prepared by:

Bowland 
Tree Consultancy Ltd

October 2020

**ARBORICULTURAL IMPACT ASSESSMENT
LAND OFF BARLEY CLOSE, WHALLEY**

Control sheet

Project No.: BTC2044

Site: Land off Barley Close, Whalley, Lancashire, BB7 9XY

Client: Co-Op Property

Council: Ribble Valley Borough Council

Survey Date: 13 August 2020

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DISCLAIMER

Survey Limitations: Unless otherwise stated all trees are surveyed from ground level using non-invasive techniques, in sufficient detail to gather data for and inform the design of the current project only. The disclosure of hidden crown and stem defects, in particular where they may be above a reachable height or where trees are ivy clad or located in areas of restrictive ground vegetation, cannot therefore be expected. Detailed tree safety appraisals are only carried out under specific written instructions. Comments upon evident tree safety relate to the condition of said tree at the time of the survey only. Unless otherwise stated all trees should be re-inspected annually in order to appraise their on-going mechanical integrity and physiological condition. It should, however, be recognised that tree condition is subject to change, for example due to the effects of disease, decay, high winds, development works, etc. Changes in land use or site conditions (e.g. development that increases access frequency) and the occurrence of severe weather incidents are also significant considerations with regard to tree structural integrity, and trees should therefore be re-assessed in the context of such changes and/or incidents and inspected at intervals relative to identified and varying site conditions and associated risks. For these reasons the tree assessment advice only remains valid for one year from the date that the trees were last inspected.

Where trees are located wholly or partially on neighbouring private third-party land then said land is not accessed and our inspection is therefore restricted to what can reasonably be seen from within the site. Stem diameters and other measurements of trees located on such land are estimated. Any subsequent comments and judgments made in respect of such trees are based on these restrictions and are our preliminary opinion only. Recommendations for works to neighbouring third-party trees are only made where a potential risk to persons and/or property has been identified during our survey or, if applicable, where permissible works are required to implement a proposed development. Where significant structural defects of third-party trees are identified and associated management works are considered essential to negate any risk of harm and/or damage then we will inform the relevant Council of the matter. Where a more detailed assessment is considered necessary then appropriate recommendations are set out in the Tree Survey Schedule.

Where tree stem locations are not included on the plan(s) provided then they are plotted by the arboriculturist at the time of the survey using, where appropriate and/or practicable, a combination of measurement triangulation and GPS co-ordination. Where this is not possible then locations are estimated. Restrictions in these respects are detailed in the report.

This document is intended as a guide to identify key tree related constraints to site development only, and the potential influence of trees upon existing or proposed buildings or other structures resulting from the effects of their roots abstracting water from shrinkable load-bearing soils is not considered herein. The tree survey information in its current form should not therefore be considered sufficient to determine appropriate foundation depths for new buildings. Accordingly, an updated survey, with reference to the current NHBC Standards Chapter 4.2 - Building Near Trees, must therefore be prepared for the specific purpose of informing suitable foundation depths subsequent to planning approval being granted. The advice of a structural engineer must also be sought with regard to appropriate foundation depths for new buildings.

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**ARBORICULTURAL IMPACT ASSESSMENT
LAND OFF BARLEY CLOSE, WHALLEY**

CONTENTS

Page

1.0 INTRODUCTION	1
Terms of Reference	1
Scope and Purpose of Report.....	1
Site Visit, Data Collection and Tree Plans.....	1
2.0 STATUTORY PROTECTION IN RESPECT OF TREES AND ASSOCIATED WILDLIFE.....	2
Tree Preservation Orders and Conservation Area Designations	2
Protected Species.....	2
Felling Licences.....	2
3.0 THE SITE AND THE SURROUNDINGS	3
4.0 THE TREE POPULATION.....	3
5.0 THE DEVELOPMENT PROPOSAL AND ITS PROJECTED ARBORICULTURAL IMPACTS	4
The Development Proposal.....	4
Projected Arboricultural Losses Relating to the Development Proposals	4
Special Protection Measures for Retained Trees	4
Compensation for Projected Arboricultural Losses.....	5
6.0 RECOMMENDATIONS FOR SUCCESSFUL TREE RETENTION IN THE CONTEXT OF DEVELOPMENT	5
Root Protection Areas and Construction Exclusion Zones	5
Underground Utilities and Drainage	5
Arboricultural Method Statement and Tree Protection Plan	6
7.0 OTHER RECOMMENDATIONS	6
Non-Development Related Tree Works and Recommendations.....	6
Tree Work Related Consents	6
Arboricultural Contractors	6
Contractors and Subsequently Identified Tree Defects	6
New Tree Planting.....	7
Landscaping Within and Close to Retained Trees' RPAs	7
Retained Tree Management	7
8.0 SUMMARY AND CONCLUSIONS	7
REFERENCES	8

APPENDICES

APPENDIX ONE: TREE SURVEY SCHEDULE & BS5837:2012 - TABLE 1

APPENDIX TWO:..... TEMPORARY PROTECTIVE FENCING SPECIFICATION

PLAN

PLAN ONE:..... TREE IMPACT PLAN

1.0 INTRODUCTION

Terms of Reference

1.1 Bowland Tree Consultancy Ltd were instructed to:

- a) Survey, as individuals or by group, all trees having reasonable potential to affect or to be adversely affected by the proposed development of the site under consideration;
- b) Annotate the proposed site plan to produce a Tree Impact identifying tree retention categories, crown spreads, Root Protection Areas, trees to be removed, trees to be retained, etc.;
- c) Prepare a tabulated Tree Survey Schedule based on guidance specified BS5837:2012 - Trees in Relation to Design, Demolition and Construction – Recommendations;
- d) Evaluate the potential tree related impacts and design conflicts of the proposals, based on the supplied development proposal plan(s);
- e) Advise on removal, retention and management options for the trees in the current context and in the context of the proposed development;
- f) Advise on suitable retained tree protection measures required during development; and
- g) Produce an Arboricultural Impact Assessment report outlining the main tree related issues and reasonably foreseeable tree impacts in relation to the proposals and indicating suitable compensation and mitigation provisions and retained tree protection measures.

Scope and Purpose of Report

- 1.2 By detailing foreseeable tree related issues this report is intended to assist the Local Planning Authority (LPA), in this case Ribble Valley Borough Council, in their review of the proposed development and, as such, should be supplied to them in support of the planning application to which it pertains. Essentially, it provides an initial analysis of the impacts that the proposed development is projected to have on trees located within the site and, where practicable, on land immediately adjacent to its boundaries. It also offers guidance on suitable retained tree management and compensation for projected losses, along with advice on appropriate tree protection measures in accordance with current guidance in the context of the proposals.

Site Visit, Data Collection and Tree Plans

- 1.3 Further to the instruction it is confirmed that a tree survey was carried out on 13 August 2020, in accordance with the preceding disclaimer, and all tree data collected on site is set out in the attached tabulated Tree Survey Schedule (TSS) at Appendix One which, for ease of interpretation, should be read alongside the appended BS5837:2012 Table 1.
- 1.4 The survey identified 21 individual trees (prefixed 'T') and nine groups of trees (prefixed 'G'), which have been numbered accordingly on the Tree Impact Plan (TIP), as appended. The TIP is based on a topographical survey plan which was provided in electronic format by the clients Co-Op Property, and, for the purpose of this report, we presume the provided plan's details to be accurate. In this respect it is noted that the location and route of the proposed drainage pipe was marked on the TIP by the project arboriculturist based on information provided by James Cole of Co-Op Property who, in turn, confirmed that the route indicated on the TIP is representative of the route proposed.
- 1.5 The purpose of the TIP is to give an initial indication of the projected impacts of the proposed development on trees, and should subsequently be used by the LPA's tree specialist to preliminarily assess if the proposed development is viable in accordance with BS5837:2012 and, along with the information provided in this report, as a basis for the LPA to request further details regarding specific matters relating to trees at suitable stages in the planning process.

2.0 STATUTORY PROTECTION IN RESPECT OF TREES AND ASSOCIATED WILDLIFE

Tree Preservation Orders and Conservation Area Designations

- 2.1 The Town and Country Planning Act (1990) (the Act) and associated Regulations empower Local Planning Authorities (LPAs) to protect trees in the interests of amenity by making Tree Preservation Orders (TPOs). The Act also affords protection for trees of over 75 mm diameter that stand within the curtilage of a Conservation Area (CA). Subject to certain exemptions, an application must be made to the LPA in question to carry out works upon or to remove trees that are subject to a TPO, whilst six weeks' notice of intention must be given to carry out works upon or to remove trees within a CA that are not protected by a TPO.
- 2.2 According to Ribble Valley Borough Council's website, the site does not stand within a CA. However, the council's website shows a substantial number of the trees on the wider site are included in the Lancashire County Council TPO No.1 of 1957. Particularly pertinent in this respect is woodland W9, which covers trees in the area of the site under consideration (i.e. in its south-western corner). Consequently, it is therefore essential that relevant permission is obtained from the LPA prior to scheduling or carrying out any tree works that are not directly related to, and subsequently authorised in accordance with, the implementation of a detailed (i.e. full) planning permission.

Protected Species

- 2.3 Nesting birds are afforded statutory protection under the Wildlife & Countryside Act (1981) (as amended) and their potential presence should therefore be considered when clipping hedges, removing climbing plants and pruning and removing trees. The breeding period for woodlands runs from March to August inclusive. Hedges provide valuable nesting sites for many birds and clipping should therefore be avoided during March to July. Trees, hedges and ivy should be inspected for nests prior to pruning or removal and any work likely to destroy or disturb active nests should be avoided until the young have fledged.
- 2.4 All bat species and their roosts are protected under Schedule 5 of the Wildlife & Countryside Act (1981) (as amended) and under Schedule 2 of the Conservation of Habitats & Species Regulations 2010 (as amended). In this respect it should be noted that it is possible that unidentified bat habitat features may be located high up in tree crowns and all personnel carrying out tree works at the site should therefore be vigilant and mindful of the possibility that roosting bats may be present in trees with such features. If any bat roosts are subsequently identified then it is essential that works are halted immediately and that a suitably qualified and experienced ecologist investigates and advises on appropriate actions prior to works continuing.
- 2.5 In turn, any subsequent works carried out in relation to any protected species must be carried out under guidance from a suitably qualified and experienced ecologist and in strict accordance with the guidance provided in BS42020:2013 - Biodiversity – Code of Practice for Planning and Development and, with regard to bats, in strict accordance with BS8596:2015 - Surveying for Bats in Trees and Woodlands.

Felling Licences

- 2.6 Subject to certain exemptions the Forestry Act (1967) requires that a 'Felling Licence' be obtained to remove growing trees amounting to more than five cubic metres of timber in a calendar quarter. Felling Licences are administered by the Forestry Commission and contravention of the associated controls can incur substantial penalties. A felling licence is, however, not required for the felling of trees immediately required for the purpose of carrying out development authorised by a full (i.e. detailed) planning permission granted under the Town and Country Planning Act 1990.

3.0 THE SITE AND THE SURROUNDINGS

- 3.1 The site under consideration is located in a rural edge area approximately 0.5 kilometres to the north of the centre of the village of Whalley, Lancashire, and within the administrative boundaries of Ribble Valley Borough Council. The site forms the southern section of a wider open area of land that is owned by the client, and currently comprises of unmanaged grassland with various established trees.
- 3.2 The wider site is bordered to the north by the A59, to the east and south by private residential properties and their associated gardens, to the south-west by The Sidings business park, and to the west by a railway line.
- 3.3 The topographical survey plan provided indicates site levels vary by approximately 12 metres from the lowest point in the south-west corner to the highest point in the east.
- 3.4 During the site visit it was evident that the ground within the site's south-western corner was waterlogged. In turn, this waterlogging has evidently contributed to the physiological decline and, in some cases, subsequent death of a number of the surveyed trees, as detailed in the TSS.

4.0 THE TREE POPULATION

- 4.1 The scope of the survey was limited to those trees within the southern section of the wider site that were indicated by the client to potentially be directly impacted upon by the route of the proposed drainage pipe.
- 4.2 As noted previously, a total of 21 individual trees and nine groups of trees were surveyed for the purpose of this appraisal. They range from young to mature in age, with heights up to approximately 25 metres, maximum diametrical crown spreads up to approximately 20 metres, and stem diameters up to approximately 960 millimetres. Details regarding specific tree dimensions and other pertinent information, such as structural defects and physiological deficiencies, are included in the Tree Survey Schedule (TSS) at Appendix One.
- 4.3 In respect of the survey it should be noted that tree quality is categorised within the existing context without taking any site development proposals into account. However, recommendations for works included in the TSS take both current site usage into consideration and the proposed site development where there are definable development related issues with regard to specific trees.
- 4.4 Under the UK's planning system trees are a material consideration in the planning and development process. Nonetheless, only trees of a suitable quality and value should be considered a material constraint to development. In this respect the TSS includes a column ('Cat. Grade') listing the trees' respective retention values, where they are rated either 'A', 'B', 'C' or 'U', as per BS5837:2012 Table 1 (Appendix One). 'A' category trees are those considered to be of 'high quality' and, accordingly, the most suitable for retention, whilst 'B' category trees are those considered to be of 'moderate quality', and 'C' category trees are those considered to be of 'low quality' with a correlated low retention value. In turn, 'U' category trees are those that are considered to be 'unsuitable for retention'.
- 4.5 As detailed in Table A (overleaf) one tree was categorised as high quality (i.e. 'A' category), seven trees and two groups were categorised as moderate quality (i.e. 'B' category), eight trees and three groups were categorised as low quality (i.e. 'C' category), and five trees and four groups were classed as unsuitable for retention (i.e. 'U' category) regardless of the development proposals.

Table A: BS5837-2012 Retention Categories of the Surveyed Trees & Groups

	Ret. Cats.	Tree/Group Numbers	Totals
Those of a moderate or high quality that should be afforded appropriate consideration in the context of development	'A'	T18	1 Tree
	'B'	T6, T7, T10, T11, T14, T19*, T21*, G2, G5*	7 Trees 2 Groups
Those of a low quality that should not be considered a material constraint to development	'C'	T1, T3*, T4*, T5*, T8*, T9, T15, T20*, G4, G6*, G8*	8 Trees 3 Groups
Those that should be removed for sound management reasons regardless of site proposals	'U'	T2, T12, T13, T16, T17 G1*, G3, G7*, G9	5 Trees 4 Groups
			= 21 Trees and 9 Groups in Total

*Note: Asterisk denotes vegetation located wholly or partly on areas(s) of neighbouring third-party owned land

5.0 THE DEVELOPMENT PROPOSAL AND ITS PROJECTED ARBORICULTURAL IMPACTS

The Development Proposal

- 5.1 From the information provided by the client to date it is understood that the planning application is for the installation of a drainage pipeline connecting to an existing drain in the south-west corner of the site and running in an east-west direction to the indicated point to the site's east, as shown on the TIP. In turn, it is understood that the installation of the drainage pipeline is required to alleviate drainage and ground water issues to the adjacent properties on Barley Close to the south of the site.
- 5.2 Consequently, from information provided by the client it is understood that the necessary works will include access along the length of the pipeline by a 13-ton excavator to dig a channel of a sufficient, although unspecified, width and depth, within which the drainage pipe is to be installed.

Projected Arboricultural Losses Relating to the Development Proposals

- 5.3 From the information provided to date it is projected that, as detailed in Table B, below, installation of the pipeline as proposed will require the removal of three moderate quality (i.e. 'B' category) trees and one moderate quality group, and three trees and part of one group categorised as low quality (i.e. 'C' category). Additionally, as also detailed in Table B, five trees and two groups are considered unsuitable for retention as they have relatively short projected remaining life expectancies of less than ten years due to various reasons (see TSS).

Table B: Projected Arboricultural Impacts of Proposed Development & Other Tree Removal Proposals

	Ret. Cats.	Removals necessary to implement development	Removals recommended regardless of development	Total no. of removals
Those of a high quality that should be afforded appropriate consideration in the context of development	'A'	-	-	-
Those of a moderate quality that should be afforded appropriate consideration in the context of development	'B'	T6, T7, T10 G2	-	3 Trees 1 Group
Those of a low quality that should be afforded appropriate consideration in the context of development	'C'	T1, T9, T15 G4 (Part)	-	3 Trees 1 Part Group
Those that should be removed for sound management reasons regardless of plans	'U'	-	T2, T12, T13, T16, T17 G3, G9	5 Trees 2 Groups
Totals		6 Trees 1 Group 1 Part Group	5 Trees 2 Groups	= 11 Trees, 3 Groups & 1 Part Group in Total

Special Protection Measures for Retained Trees

- 5.4 The proposed drainage run is projected to pass adjacent to and partially through the edges of the RPAs of retained trees T8 and T11, and both trees should subsequently be protected, as far as is practicable, through the use of temporary ground protection measures installed immediately

adjacent to the pipeline route where within their RPAs and retained throughout the course of the works. In turn, trees T8 and T11 should subsequently be reviewed by the project arboriculturist at roughly 12 and 24 month intervals following completion of the works in order to appraise their physiological and structural condition and make subsequent management recommendations if considered necessary.

Compensation for Projected Arboricultural Losses

- 5.5 As detailed on the TIP the wider Co-Op owned site to the north evidently has sufficient space for extensive new tree planting and, in turn, a suggested area has been indicated for the implementation of compensatory new tree planting. In this respect it is recommended that new tree planting takes place to the north of the proposed drainage run to enable future access for repairs and maintenance of the pipeline whilst avoiding potential related tree impacts.
- 5.6 In consideration of the wider landscape character of the site it is recommended that the new tree planting comprises of a mix of native woodland species, with trees planted in wetter areas of ground to be of species that are tolerant of such ground conditions.
- 5.7 Consequently, specific details regarding replacement tree planting should be prepared by a suitably qualified and experienced landscape architect in accordance with the guidance listed herein at paragraphs 7.5 and 7.6. Accordingly, the provision of and adherence to a detailed landscape proposal plan can be assured through the imposition of a suitably worded condition attached to a planning approval. In turn, the landscape proposal plan should be prepared in strict accordance with any relevant government guidance, specifically BS8545:2014 - Trees: From Nursery to Independence in the Landscape – Recommendations, and section 5.6 and Table A.1 of BS5837:2012.

6.0 RECOMMENDATIONS FOR SUCCESSFUL TREE RETENTION IN THE CONTEXT OF DEVELOPMENT

Root Protection Areas and Construction Exclusion Zones

- 6.1 Adequate protection of the Root Protection Areas (RPAs) of retained trees during construction is essential if their long-term viability is to be assured. RPAs, which are calculated through a method provided in BS5837:2012, are ground areas that should be protected by temporary protective fencing as Construction Exclusion Zones (CEZs) throughout the development process, thereby keeping the trees' root zones free from disturbance. Consequently, the RPA distances, as detailed in the TSS (see 6.2) and on the TIP, give an idea of the on-site below-ground constraints in respect of tree roots and assist in planning for appropriate tree retention in relation to feasible development.
- 6.2 The TSS includes two columns listing the RPAs of the individually surveyed trees and, where applicable, the largest of the trees in any surveyed groups as overall areas in square metres and as radial distances. The RPAs are indicated as magenta coloured circles on the TIP.
- 6.3 With regard to CEZs the design, materials and construction of the fencing should be appropriate for the intensity and type of site construction works, should conform to at least section 6.2 of BS5837:2012, and should be secured by the imposition of a suitably worded planning condition. A default Temporary Protective Fencing Specification is included at Appendix Two.

Underground Utilities and Drainage

- 6.4 The installation of underground utilities in close proximity to trees can cause serious damage to their roots. As such, it is essential that utilities be routed outside RPAs unless there is no other

available option. Where RPAs cannot be avoided then guidelines set out in the National Joint Utilities Group publication 'Volume 4: NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2) – Operatives Handbook' should be followed (e.g. trenches of a very limited width to be hand dug or the use of directional drilling).

- 6.5 As previously mentioned, installation of the proposed drainage pipe route is projected to require the removal of a number of trees due to projected root damage from the excavation works and to enable access for the installation of the pipeline to take place. That said, as detailed at paragraph 5.4, the proposed route passes adjacent to and marginally within the RPAs of trees T8 and T11. As such, the guidance detailed at paragraph 6.4 and the recommendations made at paragraph 5.4, should be followed in order to minimise any potential impacts on those trees.

Arboricultural Method Statement and Tree Protection Plan

- 6.6 Government guidance recommends that, where considered expedient by the LPA, an Arboricultural Method Statement (AMS) and a Tree Protection Plan (TPP) be prepared detailing special mitigation construction issues in relation to the development under consideration. Essentially, the AMS and TPP describe and detail the procedures, working methods and protective measures to be used in relation to retained trees in order to ensure that they are adequately protected during the construction process.
- 6.7 In order to ensure that any such special working methods are followed, and that the retained trees are adequately protected throughout the development process, the production of and adherence to an AMS and a TPP in support of a subsequent reserved matters application, can be conditioned to a planning approval.

7.0 OTHER RECOMMENDATIONS

Non-Development Related Tree Works and Recommendations

- 7.1 Any general management pruning works for retained trees that are stated to be non-development related, as detailed in the TSS, are recommended in accordance with prudent arboricultural management and should therefore be carried out regardless of any site development proposals and potential changes in land usage. All tree works should be carried out in accordance with BS3998:2010 - Tree Work – Recommendations.

Tree Work Related Consents

- 7.2 No tree pruning or removal works should commence on site until necessary consents have been obtained from the LPA as part of a planning approval or in respect of any statutory tree protection.

Arboricultural Contractors

- 7.3 All tree works should be carried out by suitably qualified and experienced arboricultural contractors carrying appropriate public liability insurance cover and be implemented to the minimum current CE and UK industry standards and in accordance with industry codes of practice. Only certificated personnel should, in accordance with The Control of Pesticides Regulations, apply any pesticides.

Contractors and Subsequently Identified Tree Defects

- 7.4 Tree contractors should be made aware that, should any significant tree defects become apparent during operations that would not have been immediately obvious to the surveyor, then

such defects should be notified immediately to the client and subsequently confirmed to the consultant within five working days.

New Tree Planting

- 7.5 All tree planting at the site should be carried out in accordance with BS8545:2014 Trees: from nursery to independence in the landscape – Recommendations, and in accordance with the guidance detailed in section 5.6 and Table A.1 of BS5837:2012.

Landscaping Within and Close to Retained Trees' RPAs

- 7.6 Any landscaping carried out within and close to retained trees' RPAs should be carried out in strict accordance with the guidance detailed in section 8 of BS5837:2012. As is the case with 7.5, above, a requirement for these works to conform with the current guidance detailed in BS5837:2012 can be conditioned to a planning approval.

Retained Tree Management

- 7.7 Any tree risk management recommendations made in this report were based on observations and site circumstances at the time of the survey. Trees are dynamic living organisms whose structure is constantly changing and even those evidently in good condition can succumb to damage and/or stress. In this respect, it should be noted that, under the Occupiers' Liability Act (1957 & 1984), site occupants have a duty of care to take reasonable steps to prevent or minimise the risk of personal injury and/or damage to property from any tree located within the curtilage of the land they occupy. In turn, it is accepted that these steps should normally include commissioning a qualified and experienced arboriculturist to survey their trees in order to identify any risk of harm to persons or damage to property that they may present and, where unacceptable risks are identified, taking suitable remedial action to negate those risks.

8.0 SUMMARY AND CONCLUSIONS

- 8.1 Eleven individual trees and nine groups of trees were surveyed at the site under consideration in respect of a proposed drainage pipeline.
- 8.2 One tree was categorised as high quality, seven trees and two groups were categorised as moderate quality, eight trees and three groups were categorised as low quality, and five trees and four groups were classed as unsuitable for retention regardless of the development proposals.
- 8.3 An appraisal of the documentation provided to date identified that installation of the pipeline as proposed will require the removal of three moderate quality trees and one moderate quality group, and three trees and part of one group categorised as low quality.
- 8.4 Additionally, five trees and two groups are considered unsuitable for retention as they have relatively short projected remaining life expectancies of less than ten years due to various reasons.
- 8.5 Nonetheless, the wider site evidently has sufficient space for extensive compensatory new native tree planting, as indicated on the TIP, the delivery of which be guaranteed through the imposition of a suitably worded condition attached to a planning approval.
- 8.6 With regard to tree impacts several sections of the proposed pipeline were noted to partially encroach into the RPAs of two trees proposed for retention, and both trees should subsequently be protected, as far as is practicable, through the use of temporary ground protection measures

as detailed herein. In turn, the applicable trees should be monitored at 12 and 24 month intervals following completion of works to evaluate for impacts upon their physiological and structural health.

- 8.7 In order to ensure that the retained trees throughout the site are adequately protected throughout the development process and any special working methods are adhered to, in strict accordance with current Government guidance and the recommendations included herein, the production of and adherence to a suitably detailed Arboricultural Method Statement and Tree Protection Plan can be conditioned to a planning approval.

REFERENCES

- BS42020:2013 - Biodiversity – Code of Practice for Planning and Development. BSI British Standards, London.
- BS8596:2015 - Surveying for Bats in Trees and Woodlands. BSI British Standards, London.
- BS8545:2014 - Trees: From Nursery to Independence in the Landscape – Recommendations. BSI British Standards, London.
- BS3998:2010 - Tree Work - Recommendations. BSI British Standards, London.
- BS5837:2012 - Trees in Relation to Design, Demolition and Construction – Recommendations. BSI British Standards, London.
- National House Building Council (2017). NHBC Standards Chapter 4.2 - Building Near Trees. NHBC, Amersham.
- National Joint Utilities Group (2007). Volume 4: NJUG Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2) – Operatives Handbook.

TREE SURVEY SCHEDULE FOR ARBORICULTURAL CONSTRAINTS APPRAISAL

Site: Land off Barley Close, Whalley, Lancashire, BB7 9XY

Client: Co-Op Property

Surveyor: Joseph Lambert BSc(Hons) F-6Sc MArborA

Survey Date: 13 August 2020

Job Reference: BTC2044

No.	Species	Height	Stem Diam.	Branch Spread	Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cal. Grade	RPA (m²)	RPA Radius (m)
T1	Sycamore	17	680	N 7.5 E 5.5 S 6 W 6	2-SE 2	M	G	- Large basal stem cavity with opening of approximately 200mm diameter to east at ground level, which was probed to approximately 600mm depth. - Pronounced adaptive growth visible around buttresses indicating growth response to area of decay. - Extensive basal stem decay to north from ground level to a height of approximately 200mm, which was probed to a depth of approximately 450mm. - Significant hollowing evident to lower main stem when sounded nylon mallet.	Remove tree in order to install drainage pipe as proposed.	10+	C1	209	8.16
T2	Common Beech	15	470	N 3 E 5 S 5 W 3	6 5	EM	G	- Fungal decay fruiting body internal to roof of cavity, possibly of basal decay fungi <i>Ganoderma</i> sp., however unable to accurately identify due to restricted visibility. - Tree stands adjacent to outbuilding in residential garden to south, which is evidently under moderate usage by persons occupying the property.	Remove tree due to evident increased likelihood of failure as a result of significant basal decay, and subsequent risk of harm posed to persons and damage to property.	<10	U	100	5.64
T3	Common Hazel	6	5x150 (ms)#	N 4 E 4 S 4 W 4	0 1.5	SM	G	- Located on neighbouring land and, as such, not accessed to inspect in detail. - Multiple stems arising from ground level. - RPA offset to west due to remnants of boundary wall in ground and old ditch to east side of fence which are projected to have restricted root growth and development to east. - Not projected to be impacted by proposed works.		10+	C1	51	4.02
T4	Wych Elm	10	1x220 1x110 (ts)#	N 3 E 3 S 3 W 3	0 0	SM	G	- Located on neighbouring land and, as such, not accessed to inspect in detail. - Not projected to be impacted by proposed works.		10+	C1	27	2.95

Headings and Abbreviations:

No. - Common name
Species: - Tree (T), Group (G), Woodland (W) or Hedge (H) reference number - refer to plan and to numbered tags where applicable
Height: - In metres, to half nearest metre - where possible approximately 80% are measured using an electronic clinometer and the remainder estimated against the measured trees. In the case of Groups and Woodlands the measurement listed is that of the highest tree
Stem Diam.: - In millimetres, to nearest 10mm - measured and calculated as per Annex C of BS5837:2012. MS = multi-stemmed, TS = twin-stemmed
Branch Spread: - Crown radius measured (or estimated where considered appropriate) from the four cardinal points (north, east, south and west) to give an accurate visual representation of the crown
Branch & Canopy Clearances: - Existing height above ground level, in metres, of first significant branch and direction of growth (e.g. 2.5-N) and of canopy at lowest point - to inform on crown to height ratio, potential for shading, etc.
Life Stage: - Estimated age class - Y = young, SM = semi-mature, EM = early-mature, M = mature, PM = post-mature
PC: - Physiological Condition - a measure of the tree's overall vitality. Le. D = Dead, MD = Moderately, P = Poor, M = Moderate, G = Good
General Observations and Comments: - Comments relating to the tree's overall condition and any other pertinent factors including structural defects, current and potential direct structural damage, physiological decline, poor form, etc.
Management Recommendations: - Either Preliminary or In Consideration of the Proposal - in the case of Arboricultural Constraints Surveys the recommended management works only take existing site and tree circumstances and conditions into account and not proposed developments. Arboricultural Impact Assessment and Method Statement related
ERC: - Surveys take the proposed development into consideration with recommendations made accordingly. More than one option may be given if considered appropriate
RPA m²: - Estimated Remaining Contribution - in years as per BS5837:2012 (i.e. <10, 10+, 20+, 40+)
RPA Radius (m): - Category Grading - tree retention value listed as U, A, B or C - in accordance with BS5837:2012 Table 1
(Estimated Dimensions): - Root Protection Area in m² - calculated area around the tree that must be appropriately protected throughout the development process in order to avoid root damage
Where trees are located off-site, or are inaccessible for any other reason, and accurate measurements or other information cannot be taken then the information provided is estimated and is duly suffixed with a '#' symbol

TREE SURVEY SCHEDULE FOR ARBORICULTURAL CONSTRAINTS APPRAISAL

Site: Land off Barley Close, Whalley, Lancashire, BB7 9XY

Client: Co-Op Property

Surveyor: Joseph Lambert BSc(Hons) FdSc MArborA

Survey Date: 13 August 2020

Job Reference: BTC2044

Page: 2 of 6

No.	Species	Height	Stem Diam.	Branch Spread	Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cal. Grade	RPA (m²)	RPA Radius (m)
T5	Common Ash	20#	2x450 (ts)#	N 8 E 8 S 8 W 8	0 10	M	M	■ Located on neighbouring land and, as such, not accessed to inspect in detail. ■ Evidently twin stemmed from ground level. ■ Canopy showing a moderate reduction in vitality with moderate twig dieback likely due to early stages of colonisation by Ash Dieback Disease. ■ Not projected to be impacted by proposed works.	■	10+	C1	183	7.64
T6	Sycamore	17	430	N 3.5 E 6.5 S 5.5 W 3	4-E 4	EM	G	■ Burr formation on south of stem at a height of approximately 300mm. ■ Slight lean in main stem to north-east to a height of approximately 2m before correcting. ■ Canopy moderately biased to south-east.	■ Remove tree in order to install drainage pipe as proposed.	20+	B1	84	5.16
T7	Common Oak	18	530	N 4 E 4 S 5.5 W 6	8 6	M	G	■ Canopy evidently pruned to raise with several wounds up to approximately 100mm diameter to main stem. ■ Canopy moderately biased to south.	■ Remove tree in order to install drainage pipe as proposed.	20+	B1	127	6.36
T8	Common Oak	18	570	N 0.5 E 6 S 6.5 W 6	6-E 8	M		■ Located in patio area within neighbouring residential garden, with hard surfacing extending up to main stem. ■ Outdoor electrical power point installed on north-east side of stem at a height of approximately 300mm. ■ Canopy raised with number of pruning wounds between heights of approximately 2m and 6m. ■ Moderately small canopy to height ratio. ■ Canopy highly biased to south. ■ Multiple pruning wounds up to approximately 75mm diameter indicating previous works to thin and clean canopy.	■ Protect tree's RPA, as far as is practicable, through use of temporary ground protection and by ensuring pipeline is installed in accordance with recommendations at paragraphs 5.4 and 6.4 of AIA. ■ Tree consultant to review tree's structural and physiological condition at 12 and 24 months intervals following completion of works and make management recommendations if applicable.	10+	C1	147	6.84

TREE SURVEY SCHEDULE FOR ARBORICULTURAL CONSTRAINTS APPRAISAL

Site: Land off Barley Close, Whalley, Lancashire, BB7 9XY

Client: Co-Op Property

Surveyor: Joseph Lambert BS&I(Hons) F&S&M&A&R&A

Survey Date: 13 August 2020

Job Reference: BTC2044

No.	Species	Height	Stem Diam.	Branch Spread	Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cal. Grade	RPA (m ²)	RPA Radius (m)
T9	Common Beech	17	640	N 4.5 E 5.5 S 6 W 5.5	3 4.5	M	M	- Staining on buttress root on east side at ground level consistent with colonisation by bacterial pathogen <i>Phytophthora</i> sp. - Bacterial canker of approximately 350mm diameter on south-east side of stem at a height of approximately 1.6m, which was probed to a depth of approximately 250mm. - Canopy pruned to raise with approximately six wounds up to approximately 250mm diameter between approximately 2m and 5m. - Stem bifurcates into two primary branches of approximately 380mm diameter at a height of approximately 3.5m. - Both have significant tear out wounds up to 200mm width between approximately 1.5m and 3m in length and with evident decay cavities and occluding tissues. - Canopy suppressed by larger Oak tree to north.	Remove tree in order to install drainage pipe as proposed.	10+	C1/3	185	7.68
T10	Common Oak	25	850	N 6 E 9.5 S 9.5 W 9.5	5 4	M	M	Canopy slightly sparse and showing a minor to moderate reduction in vitality.	Remove tree in order to install drainage pipe as proposed.	20+	B1	327	10.2
T11	Common Oak	25	850	N 9 E 9.5 S 9 W 9	4-E 4	M	G	- Branch of approximately 200mm diameter arising to south-east at a height of approximately 5m is snapped at a distance of approximately 1m from main stem. - Branch of approximately 250mm diameter arising to north-east at a height of approximately 5m snapped at a distance of approximately 2m from main stem. - Moderate deadwood throughout up to approximately 150mm diameter.	- Protect tree's RPA, as far as is practicable, through use of temporary ground protection and by ensuring pipeline is installed in accordance with recommendations at paragraphs 5.4 and 6.4 of AIA. - Tree consultant to review tree's structural and physiological condition at 12 and 24 months intervals following completion of works and make management recommendations if applicable.	20+	B1	327	10.2
T12	Common Beech	21	590	N 6 E 7 S 6 W 1	2.5 2	M	MD	- Ground around tree evidently partially waterlogged at time of survey. - Large area of basal decay around entire circumference of main stem at ground level with significant areas bark necrosis. - Canopy moribund and showing a severe reduction in vitality. - Large number of dead branches up to approximately 120mm diameter throughout canopy. - Very short projected remaining life expectancy.	Prune tree to reduce to a stem of a height of approximately 8m for habitat value.	<10	U	157	7.08

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Client: Co-Op Property

Surveyor: Joseph Lambert BSc(Hons) FdSc MA(EnvA)

Survey Date: 13 August 2020

Job Reference: BTC2044

No.	Species	Height	Stem Diam.	Branch Spread	Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA (m ²)	RPA Radius (m)
T13	Common Beech	14	400#	N 5 E 5 S 5 W 5	2 1	EM	D	Tree is evidently dead.	Prune tree to reduce to a stem of a height of approximately 8m for habitat value.	<10	U	72	4.8
T14	Common Beech	18	620	N 7.5 E 7.5 S 6 W 5	2.5-NE 1	M	G	- Largely occluded stem wound of approximately 400mm height and 75mm width to north-west. - Staining consistent with colonisation by bacterial pathogen <i>Phytophthora</i> sp. at ground level on west side. - Canopy low to ground on north side. - Not projected to be impacted by proposed works.		20+	B1	174	7.44
T15	Sycamore	14	260	N 0 E 4 S 4.5 W 4	4 4	EM	M	- Partially occluded pruning wound of approximately 100mm diameter to south of main stem with significant stem hollowing visible within stem above. - Canopy slightly sparse and showing a moderate reduction in vitality. - Canopy highly biased to south due to suppression by trees in neighbouring group G2.	Remove tree in order to install drainage pipe as proposed.	10+	C1	31	3.12
T16	Common Ash	19	400	N 4 E 4 S 4 W 4	4 4.5	EM	MD	Canopy is moribund and largely dead due to severe dieback extending into primary branches as a result of colonisation by Ash Dieback Disease.	Remove tree in accordance with prudent arboricultural management due to colonisation by Ash Dieback Disease.	<10	U	72	4.8
T17	Sycamore	10	290	N 1 E 1 S 1 W 1	N/A 2	EM	P	- Upper canopy largely dead. - Short projected remaining life expectancy.	Remove tree due to short remaining projected life expectancy.	<10	U	38	3.48
T18	Common Oak	18	960	N 10 E 10 S 10 W 10	3 0.5	M	G	- Open grown hedgerow tree. - Two branch tear-outs on south side of stem at heights of approximately 2m and 2.5m, with branch stubs of approximately 1m in length and up to approximately 400mm diameter. - Basal bark wound of approximately 250mm diameter on south-west side at ground level. - Small hole of stem approximately 25mm diameter, 300mm height and 300mm depth to north-west indicating area of internal hollowing around historic occluded wound. - Not projected to be impacted by proposed works.		40+	A1	417	11.52
T19	Norway Maple 'Crimson King'	11	280#	N 4 E 4 S 4 W 4	2 1	SM	G	- Located in neighbouring residential garden to south and, as such, not accessed to inspect in detail. - No significant visible defects at time of survey. - Not projected to be impacted by proposed works.		20+	B1	35	3.36

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Surveyor: Joseph Lambert BSc(Hons) FdSc MA ArborA

Survey Date: 13 August 2020

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Page: 5 of 6

No.	Species	Height	Stem Diam.	Branch Spread	Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cal. Grade	RPA (m ²)	RPA Radius (m)
T20	Common Ash	11	300#	N 5 E 5 S 5 W 5	N/A 2	SM	M	- Located in neighbouring residential garden to south and, as such, not accessed to inspect in detail. - Canopy showing minor twig dieback possibly indicating early stages of colonisation by Ash Dieback Disease. - Not projected to be impacted by proposed works.		10+	C1	41	3.6
T21	Common Horse Chestnut	14	750	N 7 E 7 S 7 W 7	1.8-S 0	M	M	- Located on neighbouring land and, as such, not accessed to inspect in detail. - Low canopy and fencing further restricted detailed inspection. - Not projected to be impacted by proposed works.		20+	B1	254	9
G1	approx. 6no. Common Ash	≤ 10	≤ 150#	N ≤ 2 E ≤ 1 S ≤ 2 W ≤ 2	N/A ≥ 0	Y-SM	P	- Group located on neighbouring land and, as such, not accessed to inspect in detail. - Two semi-mature Ash with closely spaced young Ash trees around. - Canopies showing moderate to severe reductions in vitality due to colonisation by Ash Dieback Disease. - Not projected to be impacted by proposed works.		<10	U	≤ 10	≤ 1.8
G2	2no. Common Beech, 2no. Sycamore	≤ 21	≤ 610	N ≤ 6 E ≤ 6 S ≤ 5.5 W ≤ 6	3 ≥ 2	EM-M	G	- Moderately-closely spaced group. - Beech to east has large historic basal decay cavity to north with opening of approximately 300mm width and 400mm depth. - Large occluding tissues and evident adaptive growth to buttresses around area of decay. - Canopy has evidently partially retrenched.	Remove group in order to install drainage pipe as proposed.	20+	B1/2	≤ 168	≤ 7.32
G3	5no. Common Ash, 1no. Elm, 1no. Sycamore	≤ 19	≤ 750	N ≤ 7 E ≤ 6 S ≤ 7 W ≤ 7	N/A ≥ 2	M	MD-D	- Elm and Sycamore to centre of group are dead. - Ash with group are all moribund with severe dieback extending into primary branches due to colonisation by Ash Dieback Disease. - Group has very short remaining safe life expectancy.	Remove group in accordance with prudent arboricultural management due to colonisation by Ash Dieback Disease.	<10	U	≤ 254	≤ 9
G4	Common Hawthorn, Elder	≤ 8	≤ 300	N ≤ 2 E ≤ 2 S ≤ 2 W ≤ 2	N/A ≥ 0	M	M-P	- Linear group of predominantly Hawthorn. - Evidently a lapsed hedgerow. - Several canopies showing moderate to significant reductions in vitality.	Remove approximately 5m length of group in order to install drainage pipe as proposed.	10+	C1	≤ 41	≤ 3.6
G5	3no. Birch, 2no. Common Oak, 1no. Poplar	≤ 15	≤ 350#	N ≤ 6.5 E ≤ 6.5 S ≤ 6.5 W ≤ 6.5	N/A ≥ 2	EM	G	- Located in neighbouring residential garden to south and, as such, not accessed to inspect in detail. - Not projected to be impacted by proposed works.		20+	B1	≤ 55	≤ 4.2
G6	Blackthorn, Damson	≤ 7	≤ 80#	N ≤ 2 E ≤ 2 S ≤ 2 W ≤ 2	N/A ≥ 0	Y-SM	G	- Area of dense shrub cover located in neighbouring residential garden to south and, as such, not accessed to inspect in detail. - Not projected to be impacted by proposed works.		10+	C1	≤ 3	≤ 0.96

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Page: 6 of 6

No.	Species	Height	Stem Diam.	Branch Spread	Branch & Canopy Clearances	Life Stage	PC	General Observations and Comments	Management Recommendations	ERC	Cat. Grade	RPA Radius (m ²)	RPA Radius (m)
G7	3no. Common Ash	≤ 12	300#	N ≤ 5 E ≤ 5 S ≤ 5 W ≤ 5	N/A 2	EM	M-P	- Located in neighbouring residential garden to south and, as such, not accessed to inspect in detail. - Canopies showing moderate to severe reductions in vitality with moderate to severe twig and branch dieback due to colonisation by Ash Dieback Disease. - Not projected to be impacted by proposed works.		<10	U	≤ 41	≤ 3.6
G8	Leyland Cypress	≤ 9	≤ 200	N ≤ 3 E ≤ 3 S ≤ 3 W ≤ 3	N/A ≥ 0	SM	G	- Located on neighbouring land and, as such, not accessed to inspect in detail. - Unmanaged linear boundary feature of very closely spaced stems. - Not projected to be impacted by proposed works.		10+	C1/2	≤ 18	≤ 2.4
G9	1no. Common Horse Chestnut, 1no. Norway Maple	≤ 17	≤ 660	N ≤ 7 E ≤ 5 S ≤ 5 W ≤ 7	N/A ≥ 0	PM	P- MD	- Both canopies showing significant to severe reductions vitality. - Horse chestnut to north has sustained several branch failures up to 150mm diameter throughout canopy and has significant areas of dysfunctional and necrotic bark throughout main stem and primary branches. - Both trees are projected to have a short remaining life expectancies.	Recommended group be removed due to evident condition and location adjacent to neighbouring residential garden.	<10	U	≤ 197	≤ 7.92

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 unsuitable 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 BS5837:2012 paragraph 4.5.7.</i>			Red
	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)	Green
Category B Those of moderate quality and value: those in such a condition as to make a significant contribution. A minimum of 20 years is suggested.	Trees that might be included in the high category, but are downgraded because of impaired condition. Examples include the presence of remediable defects including unsympathetic past management and minor storm damage	Trees present in numbers, usually as groups or woodlands, so they form distinct landscape features which attract a higher collective rating than they might as individuals. But which are not, individually, essential components of formal or semi-formal arboricultural features. For example, trees of moderate quality within an avenue that includes better, A category specimens. Or trees which are internal to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits	Blue
Category C Those trees of low quality and value: currently in adequate condition to remain until new planting could be established - a minimum of 10 years is suggested - or young trees with a stem diameter below 150 mm	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits	Grey
	<i>Note – Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation</i>			

- TEMPORARY PROTECTIVE FENCING SPECIFICATION -

Construction Exclusion Zones (CEZs), enclosed by Temporary Protective Fencing, as detailed below and to be agreed with the Local Planning Authority (LPA), shall:

1. be retained in place throughout the development process, as specified in the 'Temporary Protective Fencing Construction' section below and detailed in BS5837:2012 Figure 2 (overleaf);
2. be sited in the area(s) defined by the Root Protection Areas or, if applicable, the Construction Exclusion Zones, as detailed on the associated Tree Plan;
3. be erected prior to any construction, demolition or excavation works and remain in place for the duration of the project;
4. preclude any delivery of site accommodation and/or materials and/or plant machinery;
5. preclude all construction related activity, with the sole exception of specified arboricultural works and any other works to be carried out under supervision that have been agreed by all parties; and
6. preclude the storage of all development related materials and substances including fuels, oils, additives, cement and/or any other deleterious substance.

Any incursion into CEZs must be by prior arrangement, following consultation with the LPA.

Temporary Protective Fencing Construction

1. Temporary protective fencing panels shall be weldmesh "Heras" panels of at least 2.0 metres in height.
2. The panels shall butt together and be securely fixed to a scaffold framework, as per 3 to 5 below.
3. The scaffold framework shall comprise of upright poles of at least 3.0 metres in length driven no less than 0.6 metres into the ground at maximum 3.0 metre centres with horizontal and diagonal poles fixed to the uprights, as per 4 to 5 below.
4. The two horizontal rail poles shall be attached to the uprights at heights of 0.6 and 1.8 metres with 3 no. clamps to each joint.
5. The diagonal scaffold pole struts be clamped to the top rail of the scaffold framework at a 45° angle and extend back into the CEZ and clamped to a 0.7 metre length of scaffold tube that shall be driven no less than 0.5m into the ground.
6. No fixing shall be made to any tree and all possible precautions shall be taken to prevent damage to tree roots when locating posts.
7. A 600mm x 300mm warning sign reading "TREE PROTECTION AREA KEEP OUT" (see Figure 1, below) shall be fixed to every 10.0 metre length of protective fencing.
8. On completion and prior to any demolition or construction works, site preparation, excavation or delivery of plant and materials, the LPA shall inspect and approve the Temporary Protective Fencing.

Figure 1: CEZ Warning Sign

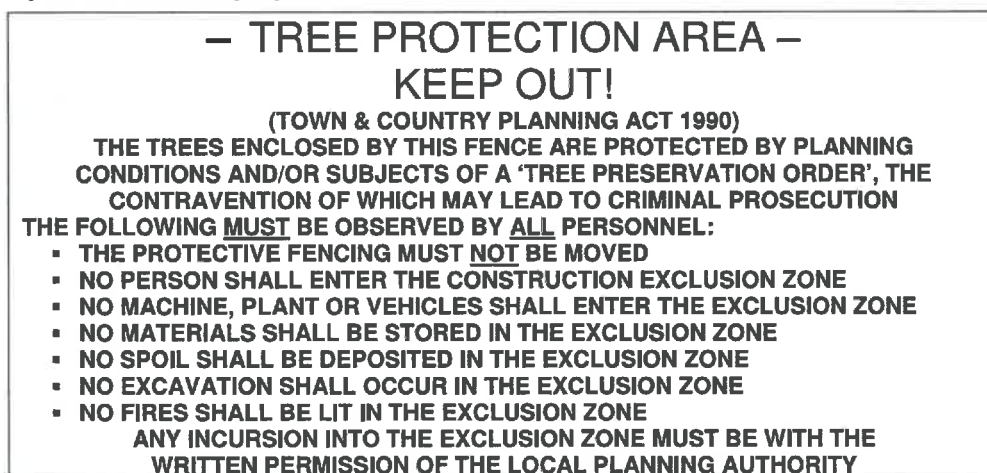
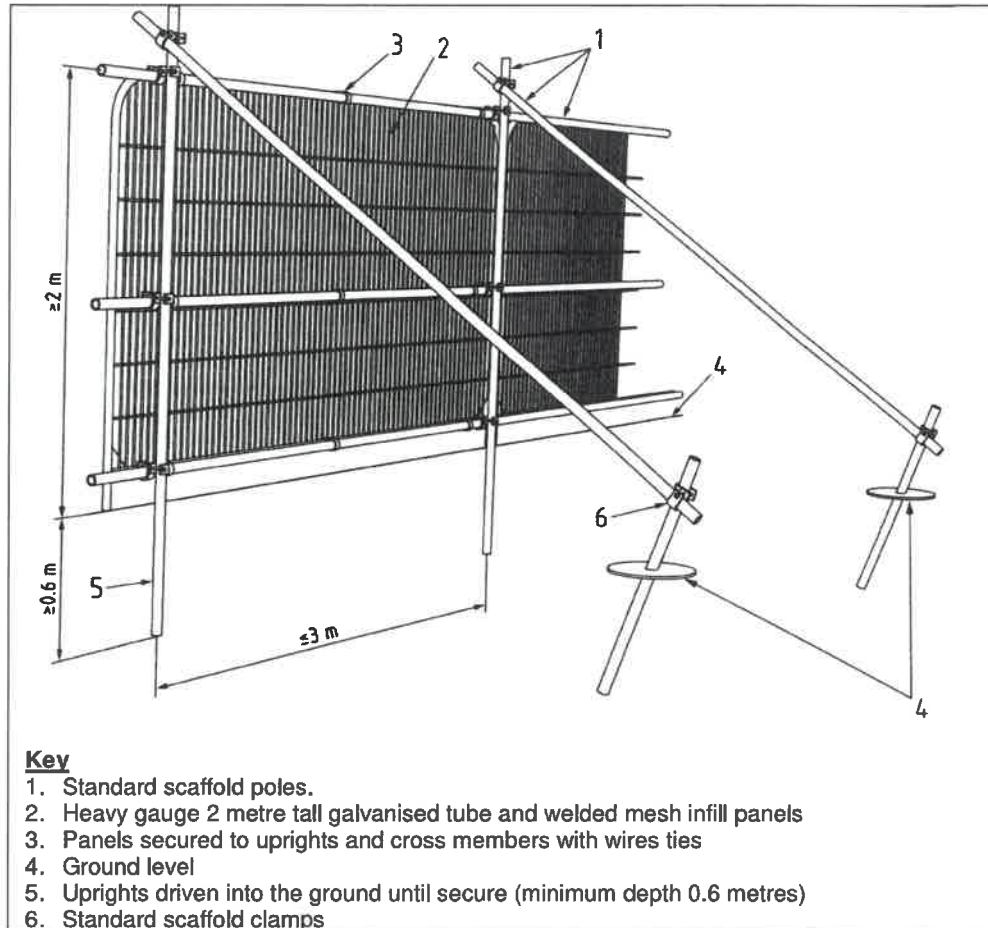


Figure 2: BS5837:2012 Default specification for protective barrier



Temporary Ground Protection

1. Any necessary Temporary Ground Protection areas shall conform to Figure 3, below, unless otherwise agreed with the LPA.
2. The Ground Protection Area shall be left undisturbed and covered by a semi-permeable geotextile membrane which shall, in turn, be covered by a compressible layer consisting of a material such as woodchip.
3. Side-butting scaffold boards shall then be fitted to cover the Ground Protection Area.
4. On completion of installation, and prior to any demolition or construction works, site preparation, excavation or delivery of plant and materials, the Consulting Arboriculturist or the LPA Tree Officer, as agreed, shall inspect the Temporary Ground Protection.
5. The Temporary Ground Protection shall remain in place until completion of the project and only removed following receipt of written permission from the LPA.

Figure 3: Temporary Ground Protection – Recommended Construction

