

CANMOOR

GRIMSHAW LANE, MANCHESTER

ARBORICULTURAL IMPACT ASSESSMENT
TO BS 5837:2012



our ref: 2093 / EH / AIA001A
date: 11th February 2021
prepared by: E.C.H
checked by: T.G-W

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<u>Rev:</u>	<u>Date:</u>	<u>Description:</u>	<u>By:</u>
A	11/02/21	Site area extended	E.H

arboricultural impact assessment



1.0 INTRODUCTION:

1.1 This Arboricultural Impact Assessment has been prepared by Bea Landscape Design Limited on behalf of Canmoor for the proposed development at Grimshaw Lane, Manchester in accordance with BS 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations'

1.2 The assessment has been prepared to accompany a detailed planning application based on the housing layout prepared by the project architects Hale.

2.0 SUMMARY OF TREE SURVEY:

2.1 Tree Survey:

2.1.0 The tree survey for the above site was carried out by Bea Landscape Design (refer to Appendix A) on behalf of Canmoor on the 1st October 2020 and extended on the 5th February 2021 in accordance with BS 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations'.

2.1.1 The following trees are scheduled to be felled, or removed due to their poor condition, being dead or structurally dangerous T03, T04, T06, G08, T13, T16, T25, G28, T29, T32, T31, T41 and T44 & T77.

2.2 Tree Constraints:

2.2.0 As part of the survey a Tree Constraints Plan 20-93-02 has been prepared to inform future development proposals identifying the root protection areas and shadow patterns in accordance with BS 5837:2012 for those A to C Category trees.

2.2.1 The tree survey also identifies the constraints provided by tree species with particular characteristics that may affect any proposed development and schedules the ultimate predicted tree height and canopy spread.

2.3 Regulatory Protection

2.3.0 It is our understanding that none of the surveyed trees are protected by a Tree Preservation Order and the site is not within a Conservation Area.

3.0 IMPACTS OF THE PROPOSED DEVELOPMENT

3.1 Site Layout

3.1.0 A site layout has been prepared for the development area including for nine industrial units with associated service yards and car parking. In order to assess the impact of the development of the site and the existing trees the proposed site layout was superimposed into the Tree Constraints Plan as per the drawing below.

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Tree Retention & Removal Plan

3.2 Tree removal

3.2.0 The assessment highlighted a number of trees that would need to be removed as a result of the development of the site as listed within Table 1 below and as identified within the Tree Retention & Removal Plan 20-93-03.

Table 1: Trees to be removed:			
No.	Common Name	Cat.	Reasons for Removal
T01	Aspen poplar	B2	To facilitate the proposed development.
G02	Silver birch	B2	To facilitate the proposed development.
T03	Sycamore	U	Unsuitable for retention.
T04	Norway maple	U	Unsuitable for retention.
T06	Norway maple	U	Unsuitable for retention.
G07	Hawthorn, Dogwood, Norway maple, Whitebeam	C2	To facilitate the proposed development.
G08	Norway maple	U	Unsuitable for retention.
T09	Poplar	C1	To facilitate the proposed development.
T10	Poplar	C1	To facilitate the proposed development.
T11	Poplar	C1	To facilitate the proposed development.
T12	Poplar	C1	To facilitate the proposed development.
T13	Poplar	U	Unsuitable for retention.
T14	Poplar	B2	To facilitate the proposed development.
T15	Poplar	C1	To facilitate the proposed development.
T16	Goat willow	U	Unsuitable for retention.
T17	Poplar	C1	To facilitate the proposed development.
T18	Poplar	C1	To facilitate the proposed development.
T19	Poplar	C1	To facilitate the proposed development.
T20	Poplar	C1	To facilitate the proposed development.
T21	Poplar	C1	To facilitate the proposed development.
T22	Poplar	C1	To facilitate the proposed development.
T23	Poplar	C1	To facilitate the proposed development.
T24	Poplar	C1	To facilitate the proposed development.
T25	Poplar	U	Unsuitable for retention.
T26	Ash	C1	To facilitate the proposed development.
G27	Cherry	C2	To facilitate the proposed development.
G28	Cherry	U	Unsuitable for retention.
T29	Cherry	U	Unsuitable for retention.
T30	Cherry	C1	To facilitate the proposed development.
T31	Cherry	U	Unsuitable for retention.
T32	Cherry	U	Unsuitable for retention.
T33	Cherry	C1	To facilitate the proposed development.
T34	Cherry	C1	To facilitate the proposed development.
T35	Cherry	B2	To facilitate the proposed development.
G36	Goat willow	C1	To facilitate the proposed development.
G37	Poplar	B2	To facilitate the proposed development.
T38	Poplar	C1	To facilitate the proposed development.
T39	Poplar	C1	To facilitate the proposed development.
T40	Poplar	C1	To facilitate the proposed development.
T41	Poplar	U	Unsuitable for retention.
T42	Sycamore	B2	To facilitate the proposed development.

Table 1: Trees to be removed:			
T43	Cherry	B2	To facilitate the proposed development.
T44	Poplar	U	Unsuitable for retention.
T45	Poplar	C1	To facilitate the proposed development.
G46	Goat willow, Birch, Cherry, Sycamore	C1	To facilitate the proposed development.
T47	Sycamore	B2	To facilitate the proposed development.
G48	Laburnum, Cherry, Dogwood, Elder, Sycamore	C2	To facilitate the proposed development.
T49	Sycamore, Cherry	C2	To facilitate the proposed development.
T50	Goat willow	C2	To facilitate the proposed development.
G51	Sycamore	B2	To facilitate the proposed development.
G54	Birch , Goat willow, Sycamore	C1	To facilitate the proposed development.
W63	Ash, Birch, Alder, Cherry, Hawthorn, Elder, Dogwood, Goat willow & Oak	C2	To facilitate the proposed development.
T64	Sycamore	B2	To facilitated the proposed development.
T70	Poplar	B2	To facilitated the proposed development.
G71*	Hazel, Holly, Dogwood , Goat willow, Guelder rose, Blackthorn with occasional Silver Birch, Ash, Sycamore & Cherry trees.	C2	Part removal to facilitated the proposed development.
G73	Poplar	C2	To facilitated the proposed development.
G74	Ash & Sycamore	C2	To facilitated the proposed development.
G75	Goat willow, Hawthorn, Dogwood with occasional Silver birch,	C2	To facilitated the proposed development.
T76	Poplar	B2	To facilitated the proposed development.
T77	Silver birch, Ash Sycamore	U	Unsuitable for retention.
G78*	Oak, Field maple, Cherry, Rowan, Silver birch, Alder, Ash, Hazel, Black Pine with Goat willow.	C1	To facilitated the proposed development.

**Partial removal of trees within group*

3.2.1 In summary the proposed development will mean the removal of 44 individual trees, 16 groups of trees and the scrub woodland.

- 3.2.2 It should be noted that trees T03, T04, T06, G08, T13, T16, T25, G28, T29, T32, T31, T41, T44 & T77 were deemed unsuitable for long term retention in the Tree Survey 2093/EH/TR001 and the removal of these trees would be required due to their poor condition and their loss should not be considered as a material consideration in the planning process.
- 3.2.3 Trees T09 to T25, T72 & G73 are a number of mature Poplar trees to the boundary of the site with Ten Acre Lane which for the most part are considered to be of low quality and value. Close to a busy road the trees have been subject to past management including being topped at 6 metres. The resulting regrowth is now of a size and age where the limbs are failing at the junction with the original pruning wounds with a number of the branches decaying and breaking off requiring further tree surgery and 're-pollarding' to reduce the hazard to the adjoining road. The re-pollarding of these mature trees will further reduce their remaining contribution and it is considered preferable in the context of the development proposals to remove the trees and mitigate their loss with replacement street trees such as Norway maple, London Plane or Lime.
- 3.2.4 Similarly G37 & 70 are a number of mature Poplar trees that line part of Grimshaw Lane and the access road to the site from Grimshaw Lane and have also been subject to past management including being topped at 6 metres. These trees have been identified as being of moderate quality and value due to their collective value as an arboricultural feature. Due to levels constraints the proposed development will mean the loss of a significant number of trees with G37 removing the collective value, with those remaining being considered individually to be of low quality and value.
- 3.2.5 The remaining trees, groups and woodlands that will require removal are considered to be of low to moderate quality and value within the tree survey and are situated to make little visual contribution to the wider locality with a number of the trees located internally site limiting the effect their removal will have on the surrounding landscape. The removal of these trees is therefore not considered to be a constraint to the proposed development of the site.

3.3 Tree retention & pruning:

- 3.3.0 The assessment also identified a number of trees that should be retained as part of the development proposals as identified within Table 2. below and as identified within the Tree Retention & Removal Plan 20-93-03.
- 3.3.1 The trees identified for retention are primarily located to the perimeter of the development along the boundary with the Rochdale canal and are of low and moderate quality and value.
- 3.3.2 As part of the proposed development it will be necessary to undertake the preliminary management surgery as identified within the tree survey including works to trees to reduce the risk of hazards to the existing or proposed change in land use.
- 3.3.3 It will also be necessary to undertake access facilitation pruning to G60 and T67 to minimise the potential for damage to branches during access and construction.
- 3.3.4 The tree pruning required is likely to be of a minor extent and is not considered to have a significant impact on the long term health and visual quality of the retained trees or groups of trees.

Table 2: Trees to be retained:

No.	Common Name	Cat.	Pruning Works Required
G05	Sycamore	B1	Remove self set tree to South.
G37	Poplar	B2	Remove deadwood (offsite trees).
T52	Crack willow	B2	No works required.
T53	Sycamore	B2	Prune lower limbs to Northeast from fenceline (offsite tree).
T55	Norway maple	B2	No works required.
T56	Norway maple	C2	No works required.
G57	Goat willow, Birch, Sycamore, Dogwood, Willow	C2	Trees within 1 metre of the existing fence line to be coppiced.
G58	Norway maple	B2	Remove deadwood. Remove smaller tree to Southeast of group.
G59	London plane	B2	Remove deadwood.
G60	Birch, Goat willow	C2	Cut back overhanging branches to facilitate access for footpath construction.
G62	Poplar & Sycamore	B2	No works required (offsite trees).
T65	Sycamore	B2	No works required.
T66	Ash	B2	No works required.
T67	Sycamore	B2	Access facilitation pruning, reduce canopy by 2 metres to Northeast.
T68	Ash	B2	No works required.
T69	Sycamore	B2	No works required.
G71	Hazel, Holly, Dogwood, Goat willow, Guelder rose, Blackthorn with occasional Silver Birch, Ash, Sycamore & Cherry trees.	C2	No works required.
G78	Oak, Field maple, Cherry, Rowan, Silver birch, Alder, Ash, Hazel, Black Pine with Goat willow.	C1	No works required.

4.0 IMPACTS OF CONSTRUCTION - DEMOLITION OPERATIONS

4.0.1 The proposed development requires the demolition remains of the existing foundry buildings including associated retaining walls, the removal of the existing tarmac and concrete hard surfacing and underground services.

4.1 Demolition of Buildings

4.1.0 The proposed development requires the demolition of a brick retaining walls in close proximity to or within the root protection (RPA) of the retained trees G57, T55, T56, G58, G59. The location of the trees means that provided that tree protection and appropriate working practices are adopted the demolition works should not have a significant impact on the long term health of the retained trees.

4.1.1 It is recommended if possible for the existing retaining wall on the Western boundary to the rear of the building to be retained insitu to prevent the risk of soil collapse and disturbance of existing tree roots.

4.2 Removal of Hard Surfaces

4.2.0 The proposed development requires the removal of the existing stone retaining walls and paved surface in close proximity to or within the root protection (RPA) of the retained trees T52. The works are to be undertaken from outside of the RPA of the tree using ground protection and appropriate working practices where required to protect the tree roots.

5.0 IMPACTS OF CONSTRUCTION – DIRECT

5.0.1 The construction of the proposed development directly impacts on the retained trees G05, T52, G59, G60 and T67 including works within the root protection area (see Table 3 below) and under the canopy of the retained trees.

5.1 Root Protection Area

5.1.0 The proposed development has been designed to avoid the need for major works within the root protection area (RPA) of the trees to be retained. However as listed below there are a small number of trees affected by some elements of the proposed development which require work to be undertaken within close proximity to or within their root protection areas.

Table 3: Work within the Root Protection Area:			
No.	Common Name	Cat.	Works Required
G05	Sycamore	B1	Retaining wall to Southwest, replacement fencing to North and soft landscaping.
T52	Crack willow	B2	Replacement fencing, Reinforced slope. Soft landscaping.
G59	London plane	B2	Porous no dig footpath.
G60	Birch, Goat willow	C2	Porous no dig footpath.
T67	Sycamore	B2	Building foundations and paving.

Retaining walls:

- 5.1.1 The proposed development necessitates the construction of a 2.6 – 3.4 metre high retaining wall at the edge of the root protection areas of trees G60 & G05. The retaining wall is to be designed by the project engineers to the minimum required width and depth of foundations taking into account not only the changes in level but also to allow for future pressure from trees roots within this protected area. Alternative retaining solutions such as piling or anchored wall systems are to be considered if suitable based on a geotechnical survey to limit excavations into the RPA of the retained trees.

Reinforced slope:

- 5.1.2 The proposed levels within the development require a level change of approximately 1 metre to the rear of Unit 1. For the most part these can be accommodated with a graded slope down to the existing levels. In proximity to the offsite Willow tree T52 the slope is to be made up of Cellweb TRP layers to reduce compaction and damage to the root protection area.

No dig, porous hard surfacing.

- 5.1.3 Trees G59 & G60 have new hard surfacing proposed within their root protection area (RPA). The affected area of the RPA is less than the 20% in accordance with the maximum new permanent hard surfacing area as stipulated within BS 5837:2012 guidance.
- 5.1.5 In accordance with the BS5837:2012 guidance the new hard surfacing is to be both no dig and porous and as such the new hard surfacing is not considered to be of significant detriment to the health of the trees and the proposed works are not considered to adversely affect the trees.

Boundary fence & Enclosures

- 5.1.6 The existing boundary fence is to be replaced where it crosses the root protection area of trees G05, G37, T47, T52, T53 & G57, T65, T66, T67, T68 & T69. To minimise potential root damage the location of fence posts is to be determined by site investigations with hand held tools to avoid large diameter roots considered important for the stability of the trees.

Soft Landscaping:

- 5.1.7 Areas of soft landscaping are proposed within the RPA of trees G05, T47, T52, T53 T65, T66, T67, T68 and T69. To minimise potential root damage limited cultivation of topsoil is to be carried out within the RPA with shrubs and transplants to be pit planted by hand.

Building Foundation & Paving:

- 5.1.8 The construction of the foundations and paved apron to Unit E will necessitate the loss of 9% of the root protection area of the Sycamore T67 with clay soil conditions requiring a root barrier to be installed at the edge of the paved area to prevent soil shrinkage.

6.0 IMPACTS OF CONSTRUCTION – INDIRECT

6.1 Site Construction Access

6.1.0 Access to the site for all visitors and construction traffic is to be from the existing access road from Grimshaw Lane. With haul roads into the site for materials and construction access post demolition are to be created along the line of the proposed internal access roads within the development.

6.2 Site Compound

6.2.0 The site compound, including porta cabins and portable toilet facilities is to be located in an area outside of the Construction Exclusion Zones of the retained trees as identified on the Tree Protection Plan 20-93-04.

6.3 Delivery & Storage of materials

6.3.0 The delivery and storage of materials will be undertaken using the haul roads as described above with materials being delivered locally to the buildings under construction. All materials are to be stored outside of the Construction Exclusion Zones as identified on the Tree Protection Plan 20-93-04.

6.4 Contractors Parking

6.4.0 A contractors and visitors parking area is to be located adjacent to the site compound on an area of existing / proposed hard standing.

7.0 IMPACTS POST DEVELOPMENT

7.1 Shading of buildings / open space

7.1.0 The shading from the retained trees will not effect the proposed industrial unit development

7.2 Privacy & Screening

7.2.0 The removal of the existing trees and woodland to the boundary with Ten Acre Lane and Grimshaw Lane will open up views into the proposed development from the road and adjacent properties. This is to be mitigated through the soft landscape proposals including the planting of a line of semi mature replacement street trees.

7.3 Direct damage

7.3.0 The semi mature Sycamore trees G05 to the Northwest and the Sycamore and Ash trees T65, T66, T68 & T69 Southeast of the site have the potential to conflict with the proposed units if they attain the species typical mature height and crown spread however this is considered unlikely given the site conditions.

7.4 Seasonal nuisance

7.4.0 Sycamore trees are medium to large leaved deciduous tree species that are attractive to aphids that produce honeydew. When the tree is in leaf the honeydew can be damaging to surfaces increasing maintenance requirements.

7.4.1 Sycamore, Norway maple and London Plane are all large leaved deciduous tree species that drop their leaves in autumn. This will result in increased maintenance requirements to Unit 4 and Unit E and to a lesser extent Unit 1 including the removal of leaf litter from both the guttering and from the hard paving.

7.5 Species characteristics

7.5.0 Trees are living organisms and exhibit structural and seasonal characteristics that may give rise to conflicts in proximity to buildings, footpaths and hard standing areas.

7.5.1 G62 are avenues of offsite 'pollarded' Poplar trees that will require regular tree surgery and management. The species have a propensity for branch drop or failure particular in high winds which combined with leaf drop will increase the maintenance requirements of the Grimshaw Lane access.

7.6 Future pressure for removal

7.6.0 The proposed development will increase the pressure for removal of the G05 Sycamore, Norway maples T55, T56, G58, T65, T67 & T69 and London plane G59 due to the honeydew and leaf litter, however as an industrial unit (rather than a residential property) there will be regular maintenance of the building and hard surfacing carried out as part of the upkeep of the units.

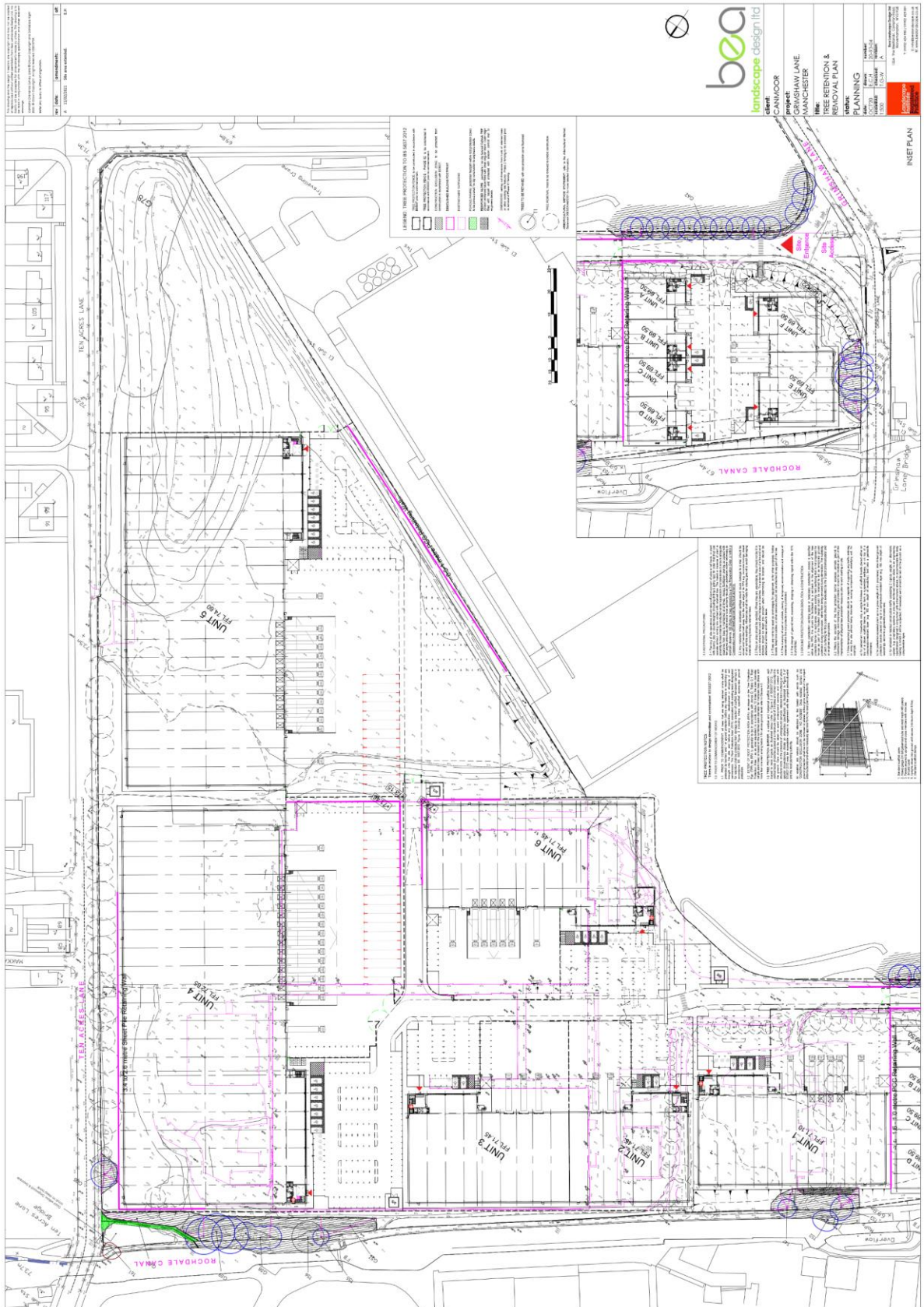
7.6.1 Similarly the Poplar trees will create both leaf litter and debris on the main site access however as off site trees they cannot be removed without the adjacent landowners permission and there will be regular maintenance of the buildings and hard surfacing carried out as part of the upkeep of the units.

8.0 MITIGATION OF DEVELOPMENT:

8.0.1 As detailed above the proposed development will entail the loss of a number of the existing trees within the site with the retention of a number of trees to the Northern and Western site perimeters. The loss of the existing trees is to be mitigated where possible with replacement tree planting with special construction techniques and tree protection to provide mitigation where the proposed development and construction works are in close proximity to the retained trees.

8.1 Replacement Tree Planting

8.1.0 Mitigation for the trees required to be removed to facilitate the development are to be provided in the form of replacement tree planting within the soft landscape areas notably including a line of semi mature trees to the Ten Acre Lane boundary and Grimshaw Lane site entrance. Tree species are to in keeping with the character of the surrounding area including Norway maple, London plane and native species such as Downy birch, Field maple, Alder, Hornbeam, Rowan, Whitebeam and Wild cherry.



Tree Protection Plan

8.2 Special construction techniques

8.2.0 The retaining features in close proximity to the retained trees are to be designed by the engineers using sheet piles to limit tree root damage and to take into account the level changes and to allow for future pressure from trees roots within this protected area.

8.2.1 The creation of the reinforced slope within the RPA of the offsite Willow tree T52 is to be mitigated through the use of 'no dig' and permeable Cellweb TRP system to prevent soil compaction and root damage.

8.3 Tree Protection:

8.3.0 The trees are to be protected from damage during the course of the works in accordance with the guidance of BS5837:2012.

8.3.1 The protection of those trees to be retained has been detailed within the Tree Protection Plan 20-93-04 which both identifies Construction Exclusion Zones, the locations of protective barriers as well as other restrictions outlined in the above.

8.3.2 Where construction access for the development requires encroachment within the root protection area special care is to be taken during construction and demolition, in accordance with section 6.2.3 of BS 5837:2012 'Ground protection during demolition and construction' and detailed within the Arboricultural Method Statement.

9.0 ARBORICULTURAL METHOD STATEMENT:

9.1.0 In order to inform the carrying out of the proposed works in proximity to the retained existing trees a detailed method statement (2093/EH/AMS001) has been prepared to specify the working practices to be followed by the contractor to comply with BS5837:2012 and mitigate for the proposed works.

9.1.1 An Arboricultural Method Statement is therefore to be prepared that addresses the following;

- a) tree protection fencing
- b) site construction access;
- c) contractors' car parking;
- e) the space needed for foundation excavations and construction works;
- f) working space for cranes, plant, scaffolding and access during works;
- g) space for site huts, temporary toilet facilities (including their drainage) and their temporary structures;
- h) the type and extent of landscape works which will be needed within the protected areas, and the effects these will have on the root system;
- i) space for storing (whether temporary or long-term) materials, spoil and fuel and the mixing of cement and concrete;
- j) no dig, porous paving;

k) reinforced slope

l) all changes in ground level, including the location of retaining walls and making adequate allowance for foundations of such walls and backfilling;

m) security fencing installation

n) soft landscape implantation.

APPENDIX A

TREE SURVEY

CANMOOR

GRIMSHAW LANE, MANCHESTER

TREE SURVEY TO BS 5837:2012



our ref: 2093 / EH / TR001A
date: 6th February 2021
prepared by: E.C.H
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Rev:

Date:

Description:

By:

A

06/02/2021

Survey area extended

E.H

GRIMSHAW LANE, MANCHESTER

1.0 Introduction:

- 1.1 The tree survey for the site at Grimshaw Lane, Manchester was carried out by Bea Landscape Design on behalf of Canmoor on the 1st October 2020 and extended on the 5th February 2021 for submission to the local planning authority Manchester City Council.
- 1.2 The tree survey inspection was carried out from ground level only and no invasive diagnostic tools were used. This is a pre-development site inspection prepared in accordance with BS5837: 2012 'Trees in relation to design, demolition and construction – Recommendations' and the report is valid and relevant only as part of the planning process.
- 1.3 It should be noted that tree surveys carried out at specific times of year are subject to seasonal limitations. For example; in spring leaves are not present or are just emerging and fungi are generally not visible (depending on species) which limits the assessment of a trees physiological condition, in summer trees are in leaf which reduces the visibility of the crown and can limit the ability to assess the structural condition with fungi not generally visible (depending on species), in autumn there is a decline in leaf quality / cover affording an improved view of the crown and fungal fruiting bodies can be present, in winter the structure of the crown can be easily assessed however assessment of physiological condition is limited and fungi are generally not visible.
- 1.4 Trees are dynamic natural structures and require frequent monitoring if predictable failures are to be identified. As such the trees should be re-inspected within at least a two year period from the date of this report or when changes occur to the trees (such as appearance of fungal growths, splits in branches etc.) or changes in their immediate environment occur. Any recommendations for action should also be carried out within this period unless identified in the report as requiring immediate action.
- 1.5 Some tree failures are not predictable such as those occurring during 'freak weather' conditions and those without external symptoms, these types of failure are not covered by this report.
- 1.6 The tree survey schedules document 2093/EH/TS001 and survey drawing 20-93-01 are included within this report. The tree survey is based on the topographical survey carried out by Greenhatch Ltd in August 2020 and January 2021. It should also be noted that a number trees surveyed (T04, T15 through to T26, G37, G62, T53) are on or just outside of the application boundary or within dense undergrowth and as such were not identified on the original topographical survey. The location of these trees has been estimated using triangulation or based on aerial photography and their location should not be relied on for the construction purposes.
- 1.7 In accordance with British Standard 5837: 2012 the survey records the tree common names (refer to Appendix A for a key to scientific names), height, stem diameter and branch spread and existing height above ground level of the canopy or first significant branch including life stage, general observations (such as structural, physiological condition and/or preliminary management recommendations) and the estimated remaining contribution in years.

1.8 Each tree is also awarded a category grading based on Table 1 'Cascade Chart for Tree Quality Assessment' of the British Standard as included within Appendix C.

The following are an explanation of the terms used to describe the life stage, physiological condition and sizes referred to within the tree survey schedule.

Life Stage

<i>Young</i>	A tree in the first third of its expected life span.
<i>Semi-mature</i>	A tree within the second third of its expected life span.
<i>Mature</i>	A tree within the final third of its expected life span.
<i>Over mature</i>	A tree in natural decline.
<i>Veteran</i>	A tree with habitat features such as wounds, decay in the branches, root or hollowing in the trunk with cavities or rot holes where limbs have broken off or bark is damaged. Wood decay fungal fruiting bodies and often evident. The trees have significant amount of deadwood with many dead limbs or branches (larger than 200mm in diameter) in the crown or fallen. A veteran tree is a survivor that has developed some of the features found on an ancient tree but not necessarily as a consequence of time, but of its life or environment.
<i>Ancient</i>	An ancient tree has great aesthetic appeal and is defined by the following characteristics; a small canopy exhibiting stag headedness following crown retrenchment, (gradual dieback and branch loss in which the area of foliage and root system are rebalanced with each other through the aging process); with a very wide hollowing trunk relative to other trees of the same species and one or more openings to the outside exhibiting the fruiting bodies of heart rot fungi.

Physiological condition

<i>Good</i>	The tree appears to have no obvious defects.
<i>Fair</i>	The trees condition is slightly compromised and considered to be remediable.
<i>Poor</i>	The trees condition is significantly compromised and considered non-remediable. Significant defects.

Sizes:

<i>Minor</i>	A diameter of less than 25 millimetres.
<i>Moderate</i>	A diameter of between 25 to 50 millimetres.
<i>Major</i>	A diameter of greater than 50 millimetres.

1.9 This report does not consider any potential influence that trees may have upon load bearing soils beneath existing or proposed structures through abstraction of water by their roots (i.e. soil shrinkage and expansion and subsequent building subsidence and heave). The advice of a structural engineer should be sought with regard to appropriate foundation depths for new buildings with reference to NHBC standards Chapter 4.2 (NHBC, 2011).

2.0 Context:

2.1 The site is located off Grimshaw Lane in the Newton Heath area of the city of Manchester as identified in Figure 01. Location Plan.

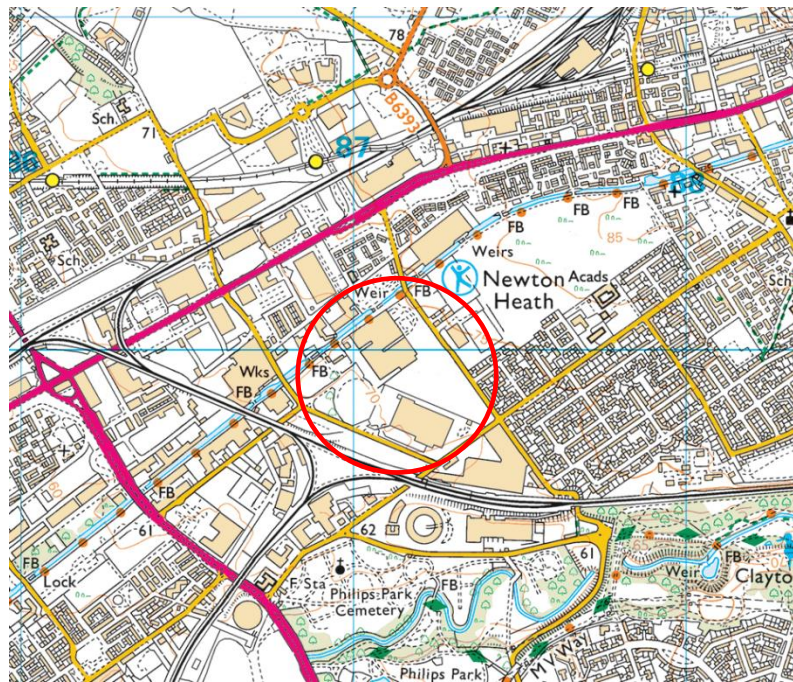


Figure 01. Location Plan

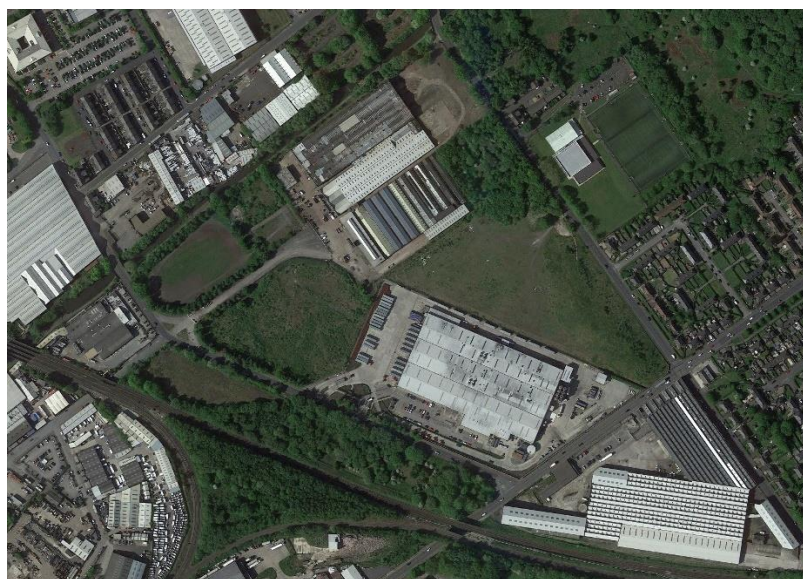


Figure 02. Aerial Photograph

- 2.2 The area surveyed is the site of the former Mathers Foundry and social club and is currently occupied by derelict buildings, hard standings and areas overgrown with self set trees (refer to Figure 02. Aerial Photograph). Since the original survey visit in October 2020 the buildings have been demolished. To the Northwestern boundary of the site is the Rochdale Canal and towpath.
- 2.3 The topography of the site is gradually sloping from Northeast to Southwest with the changes in levels taken up with retaining walls and localised embankments. To the East the ground rises towards the junction with Ten Acres Lane and Briscoe Lane with a large screen mound some 5 metres tall in the southeast corner.
- 2.4 In order to inform the design of any future development taking account retained, removed and proposed trees; it is recommended that a soil assessment or geotechnical survey is undertaken to determine the soils shrinkability. This can affect the extent of the root protection area, tree protection and ultimately foundation design.

3.0 Tree Survey Summary:

- 3.1 The majority of the trees surveyed are to the perimeter of the former foundry site along the boundaries with Ten Acres Lane to the East, Rochdale Canal to the West and Grimshaw Lane to the Southwest. Outside of the fenced site perimeter to the West is the site of the former Sports & Social Club (which has been demolished) with the principle site access off Grimshaw Lane further West.
- 3.2 To the rear of the former Foundry buildings are a number of trees including Aspen poplar, Silver birch and Sycamore (T01, G02 & G05) of moderate quality and value with an avenue of mature Poplar (T09, T10, T11, T12, T14). to the site side of the perimeter fence to Ten Acre Lane (refer to Figure 3 below) of low to moderate quality and value having undergone past crown reductions and maintained as pollards with the land to the rear having been tipped over with building debris.
- 3.3 The Poplar avenue continues to the Southeast along Ten Acre Lane (T15, T17, T18, T19, T20, T21, T22, T23, T24, T72, G73) where it becomes engulfed by W63 a self set scrub woodland (refer to Figure 4 below) comprising of predominantly Silver Birch, Alder, Goat willow and Sycamore and G75 self set Goat willow scrub both considered of low quality and value. It should be noted that there are two areas of Japanese Knotweed within the Northeastern half of the W63 woodland.
- 3.4 To the Southeast of G75 is a single large Poplar of moderate quality and value that would have originally extended the row of Poplar to Ten Acres Lane along the former works entrance. Further South is a large area of scattered young trees G78 (refer to Figure 5) including self set Goat willow with standard Oak, Field maple, Alder, Pine, Rowan, Cherry, Silver birch and Ash planted on a substantial mound.
- 3.5 To the West of the survey area surrounding the former Sports & Social Club are a number of more ornamental tree species including two avenues of Cherries in generally poor condition having been subject to inappropriate past pruning. To the canalside boundary there are a number of Sycamore trees of moderate quality and value (G51, T47 and T53) with a more mature Sycamore to the West T42.



Figure 3. View looking North towards T13 to G05



Figure 4. View looking North towards W63 & trees T24 to T15



Figure 5. View looking Northwest towards G78



Figure 6. View looking Northeast towards T42 to T52



Figure 7. Looking West towards G37



Figure 8. Looking NorthWest towards G37, T65 to T70



Figure 9. Looking East towards T55 to G59

- 3.5 To the Western corner of the Sports & Social Club are the remains of two large overmature Poplar (T45 & T44) of low quality and value with a Cherry (T43) and an offsite Willow (T52) to the canal edge of moderate quality and value (refer to Figure 6).
- 3.6 Either side of the entrance road are avenues of Poplars G37, G62 that form a distinctive arboricultural feature warranting a moderate value grading (refer to Figure 7 below). However as with the trees to the Eastern boundary with Ten Acre Lane the trees have been subject to past surgery and as individual trees they would be considered to be of low quality and value as per T38, T39 & T40.
- 3.7 Where the Poplar avenue meets Grimshaw Lane the Poplars are replaced by a number of Ash and Sycamore T65 to T69 of moderate quality and value n (refer to Figure 8). G71 is an area of young tree and shrub screen planting to the edge of the site that extends down to the edge of the Rochdale Canal including Hazel, Holly, Dogwood with occasional Silver birch, Ash, Sycamore and Cherry trees considered of low quality and value.
- 3.8 To the Northwestern edge of the Rochdale Canal are a number of groups of self set trees of low quality and value Birch, Willow, Goat willow and Sycamore (G54, G57, G60) with a number of planted ornamental Norway Maple and London plane trees (T55, T56, G58 & G59) to the edge of the lock of low to moderate quality and value as illustrated in Figure 9.

4.0 Tree Preservation Orders & Conservation Areas

- 4.1 It is our understanding that trees there are currently no Tree Preservation Orders designated within the survey area and the site is not within a Conservation Area. For the avoidance of doubt we would recommend that the local authority tree officer is contacted and confirmation obtained.

- 4.2 The Town and Country Planning (Tree Preservation) (England) Regulations 2012 empowers local planning authorities to protect trees in the interests of amenity by making Tree Preservation Orders (TPO). Subject to certain specified exemptions, an application must be made to the local planning authority to carry out works upon or to remove trees that are subject to a TPO. However in certain situations where detailed planning permission has been granted and protected trees are directly affected by the implementation of the approved development, then it is possible to carry out the works necessary to said trees in order to implement the said development.
- 4.3 Under the Regulations any damage caused to, or the felling of those trees protected by an order will be considered an illegal act and subject to prosecution as set out in the TPO regulations.
- 4.4 Section 211 of the Town & Country Planning Act 1990 (the Act) affords protection for the trees of over 75mm diameter (measured at 1.5 metres above ground level) within a Conservation Area. Subject to certain specified exemptions six weeks notice of intention (a 'Section 211 notice') must be given to the local planning authority to carry out works upon, or for the removal of the protected trees.

5.0 Protected Species

- 5.1 The Wildlife & Countryside Act 1981 forms the legislative basis for protecting Britain's flora and fauna, together with its 1985 and 1991 amendments, the subsequent variations to the schedule of orders, and strengthening amendments made within the Countryside & Rights of Way Act 2000.
- 5.2 Nesting birds are afforded statutory protection by the Wildlife & countryside Act 1981. The bird nesting season is officially from February until August with the busiest time for nesting birds from the 1st March until the 31st July according to species.
- 5.3 As such, consideration should be given to the presence of nesting birds when clipping hedges, pruning or removing trees or removing ivy or other climbing plants during the bird nesting season. 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. Hedges provide valuable nesting sites for a wide range of birds and clipping should therefore be avoided during the months of March to July.
- 5.3 In Britain all bats are protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and under Schedule 2 of the Conservation (Natural Habitats) Regulations 1994 (as amended). In England, under current legislation, it is an offence to:
- Deliberately capture, injure or kill a bat;
 - Deliberately disturb in a way that would significantly affect their local distribution or abundance, or affect their ability to survive, breed or rear young;
 - Damage or destroy a bat roost (note – this is an 'absolute' offence whereby intent or recklessness does not have to be proved).
 - Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat;
 - Intentionally or recklessly disturb at bat roost; and
 - Intentionally or recklessly obstruct access to a roost.

5.4 In this respect it should be noted that bats utilise tree cavities, cracks and dense ivy as roosts. It is also possible that unidentified bat habitat features may be located high up in the tree crowns and all personnel subsequently carrying out tree works at the site should therefore be vigilant and mindful of the possibility that roosting bats may be present. If any bats roosts are identified during tree works then it is essential that the works are halted immediately and an ecologist investigate them prior to works continuing.

6.0 Tree Surgery & Removal:

6.1 The following trees are scheduled to be felled, or removed due to their poor condition, being dead or structurally dangerous and unsuitable for retention; T03, T04, T06, G08, T13, T16, T25, G28, T29, T31, T32, T41, T44 & T77.

6.2 The preliminary tree management works and tree removal are to be carried out by an Arboricultural Association accredited tree surgeon in accordance with BS 3998: 2010 'Tree Work - Recommendations' with particular care to be taken where trees are in confined spaces or adjacent to highways.

7.0 Root Protection Area

7.1 In order to inform the future retention of existing trees the root protection area has been calculated for each tree in accordance with BS 5837:2012 Annex D, Table D.1 – Root Protection Area and using the two calculation methods as detailed within clause 4.6.1. The root protection areas are illustrated on the Tree Constraints Plan 20-93-02.

7.2 Where Veteran trees have been identified within the tree survey the root protection area has been based on a minimum of 15 times the diameter of the trunk in accordance with the standing advice from Natural England and the Forestry Commission.

7.3 Where pre-existing site conditions (i.e the presence of retaining walls) or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area had been illustrated

7.4 All trees that are being retained on site should be protected by barriers and/or ground protection before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. These 'Construction Exclusion Zones' are to be protected by barriers and ground protection in accordance with section 6.2 of BS 5837:2012 and as specified and indicated on an approved Tree Protection Plan to be prepared by the project arboriculturalist.

7.5 Of particular importance on sites where there are significant level changes it should be noted that existing ground levels are to be retained within the RPA. Intrusion into soil (other than for piling) within the RPA is generally not acceptable, and topsoil within it should be retained in situ and any re-grading works or the location of retaining features should take this into account. The advice of an arborist should be sought where underground structures are present within the RPA are, or will become, redundant. In general it is preferable to leave such structures in situ, as their removal could damage adjacent tree roots.

7.6 Where construction operations are proposed and permitted within the Root Protection Area precautions should be taken and specified within an Arboricultural Method Statement prepared by the project arboriculturalist to maintain the condition and health of the root system in accordance with Section 7 'Demolition and construction in proximity to existing trees' of BS 5837:2012.

7.7 Where permanent hard surfacing within the RPA is considered unavoidable, site-specific and specialist arboricultural and construction design advice should be sought to determine whether it is achievable without significant adverse impact on trees to be retained. As a general guide new permanent hard surfacing should not exceed 20% of any existing unsurfaced ground within the RPA.

8.0 Above Ground Constraints

8.1 In addition to the condition of the tree the probable impact on proposed buildings or development of trees considered for retention should be assessed to take into account the root protection areas, shadow patterns, species characteristics, maintenance requirements and allowances for space and future tree growth.

Shading:

8.2 In order to assess any unreasonable obstruction of sunlight or daylight to any proposed development tree shadow patterns are also illustrated on the Tree Constraints Plan 20-93-02.

8.3 The orientation of the site on a Northeast, Southwest axis means that the shadows from the more significant and larger trees to the Eastern boundaries shade areas of the site.

8.4 The survey includes species that have typically have dense canopies] or large foliage such as London plane, Sycamore and Norway maple and further consideration should be given in respect of these shading characteristics. The ultimate height and spread of the tree (as noted below) will also affect the shading of the site in the future.

Species Characteristics:

8.5 Trees are living organisms and exhibit structural and seasonal characteristics that may give rise to conflicts in proximity to buildings, footpaths and hard standing areas.

8.6 Silver birch are short lived trees intolerant of hard pruning. They are prone to branch failures on dense branch ends and stem and branch failures due to wood decay and weak wood. Sensitive to fungal pathogens and storm damage from snow, ice and wind.

8.7 Sycamore are trees that are susceptible to aphids that secrete honeydew which can be damaging to surfaces and vehicles.

8.8 London plane, Sycamore and Norway maple are large leaved deciduous species that drop their leaves in the autumn. This can result in increased maintenance requirements to structures or surfaces located in the vicinity.

8.9 Willow and Poplar are large spreading deciduous tree species that have a propensity for branch drop or failure particularly in high winds. This can result in increased maintenance requirements to surfaces and possible damage to structures located in the immediate vicinity. Pollarded Willow and Poplar species will require regular tree surgery and management.

8.10 The following trees species are identified within the NHBC Standards Chapter 4.2 as of high water demand and therefore impacting significantly on foundation design on high shrinkability soils; Cypress, Elm, Eucalyptus Hawthorn, Oak, Poplar and Willow.

Ultimate Height and Spread:

8.11 Where surveyed trees are classified as young to semi mature their future growth in terms of predicted height and canopy spread at maturity (refer to Appendix B) should be considered to prevent direct potential damage to structures or buildings, minimise future pressure for removal and increase the effect of shading as described above.

Appendix A: Scientific Names

<i>Common names:</i>	<i>Scientific Name</i>
Common alder	<i>Alnus glutinosa</i>
Crab apple	<i>Malus sylvestris</i>
Common ash	<i>Fraxinus excelsior</i>
False acacia	<i>Robinia pseudacacia</i>
Silver birch	<i>Betula pendula</i>
Downy birch	<i>Betula pubescens</i>
Common beech	<i>Fagus sylvatica</i>
Wild cherry	<i>Prunus avium</i>
Bird cherry	<i>Prunus padus</i>
Cherry plum	<i>Prunus cerasifera</i>
Horse chestnut	<i>Aesculus hippocastanum</i>
Sweet chestnut	<i>Castanea sativa</i>
Cypress	<i>Chamaecyparis cultivar</i>
Leyland cypress	<i>Cupressus x leylandii</i>
Lawson cypress	<i>Chamaecyparis lawsoniana</i>
Douglas fir	<i>Pseudotsuga menziesii</i>
Common hawthorn	<i>Crataegus monogyna</i>
Common hornbeam	<i>Carpinus betulus</i>
Holly	<i>Ilex aquifolium</i>
Laburnum	<i>Laburnum anagyroides</i>
Small leaved lime	<i>Tilia cordata</i>
Common lime	<i>Tilia x europaea</i>
Large leaved lime	<i>Tilia platyphyllos</i>
European larch	<i>Larix decidua</i>
Field maple	<i>Acer campestre</i>
Norway maple	<i>Acer platanoides</i>
Sycamore	<i>Acer pseudoplatanus</i>
Common oak	<i>Quercus robur</i>
Sessile oak	<i>Quercus petraea</i>
Holm oak	<i>Quercus ilex</i>
Pear	<i>Pyrus communis</i>
Scots pine	<i>Pinus sylvestris</i>
Aspen poplar	<i>Populus tremula</i>
Lombardy poplar	<i>Populus italica</i>
Hybrid black poplar	<i>Populus x canadensis</i>
London plane	<i>Platanus x hispanica</i>
Norway spruce	<i>Picea abies</i>
Rowan	<i>Sorbus aucuparia</i>
Whitebeam	<i>Sorbus aria</i>
Wild service tree	<i>Sorbus torminalis</i>
Crack willow	<i>Salix fragilis</i>
Goat willow	<i>Salix caprea</i>
White willow	<i>Salix alba</i>
Weeping willow	<i>Salix babylonica</i>
Yew	<i>Taxus baccata</i>

Appendix B: Predicted Tree Height & Canopy Spread

<i>Common name</i>	<i>Height (m)</i>	<i>Canopy Spread (m)</i>
Common alder	25	10
Crab apple	9	7
Common ash	30	20
False acacia	25	15
Silver birch	25	10
Downy birch	20	10
Common beech	25	15
Wild cherry	20	10
Bird cherry	15	10
Cherry plum	10	10
Horse chestnut	25	20
Sweet chestnut	30	15
Cypress	15-40	2-5
Leyland cypress	35	5
Lawson cypress	15-40	2-5
Douglas fir	25-50	6-10
Common hawthorn	10	8
Common hornbeam	25	20
Holly	25	8
Laburnum	8	8
Small leaved lime	25	15
Common lime	35	15
Large leaved lime	30	20
European larch	30	4-6
Field maple	10	8
Norway maple	25	15
Sycamore	30	25
Common oak	35	25
Sessile oak	30	25
Holm oak	25	20
Pear	15	10
Scots pine	15-30	6-9
Aspen poplar	20	10
Lombardy poplar	30	5
Hybrid black poplar	35	20
London plane	30	20
Norway spruce	20-40	6
Rowan	15	7
Whitebeam	10-25	10
Wild service tree	20	12
Crack willow	15	15
Goat willow	10	8
White willow	25	10
Weeping willow	12	12
Yew	10-20	8-10

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
TREES UNSUITABLE FOR RETENTION				
<p>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.</p>	<ul style="list-style-type: none"> 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 U category trees (i.e. 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. <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve.</i></p>			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation	
<p>Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years.</p>	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)	LIGHT GREEN
<p>Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.</p>	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	MID BLUE
<p>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.</p>	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	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	GREY

Appendix D: Root Protection Area

Single stem diameter <i>mm</i>	Radius of nominal circle <i>m</i>	Root Protection Area (RPA) <i>m²</i>
75	0.90	3
100	1.20	5
125	1.50	7
150	1.80	10
175	2.10	14
200	2.40	18
225	2.70	23
250	3.00	28
275	3.30	34
300	3.60	41
325	3.90	48
350	4.20	55
375	4.50	64
400	4.80	72
425	5.10	81
450	5.40	92
475	5.70	102
500	6.00	113
525	6.30	124
550	6.60	137
575	6.90	150
600	7.20	163
625	7.50	177
650	7.80	191
675	8.10	206
700	8.40	222
725	8.70	238
750	9.00	255
775	9.30	272
800	9.60	290
825	9.90	308
850	10.20	327
875	10.50	346
900	10.80	366
925	11.10	387
950	11.40	408
975	11.70	430
1000	12.00	452
1025	12.30	475
1050	12.60	499
1075	12.90	519
1100	13.20	547
1125	13.50	573
1150	13.80	598
1175	14.10	625
1200	14.40	652
1225	14.70	679
1250	15.00	707

Appendix E: Technical Definitions

Access Facilitation Pruning:	One off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary to provide access for operations on site.
Arboricultural Impact Assessment	An evaluation of the direct and indirect effects of the proposed design on the trees identified within the Tree Survey, where necessary recommending mitigation or amendments to the design.
Arboricultural Method Statement	Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.
Construction Exclusion Zone	An area based on the root protection area from which access is prohibited for the duration of a project
Root Protection Area (RPA)	The minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is considered a priority
Tree Protection Plan	A scale drawing informed by descriptive text where necessary, based upon finalised proposals, showing trees for retention and illustrating the tree and landscape protection measures.

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Any recommendation, opinion or finding stated in this report is based on circumstances and facts as they existed at the time that Bea Landscape Design performed the work. The content of this report has been provided in accordance with the provisions of the BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.

Nothing in this report constitutes legal opinion. If legal opinion is required the advice of a qualified legal professional should be secured. Observations relating to ecology and the condition of built structures have been made from an arboricultural point of view and, unless stated otherwise, do not constitute structural or ecological advice.

Tree Survey in accordance with BS5837:2012

Estimated dimensions (for offsite or otherwise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m)				Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m ²)
				N	E	S	W								
T01	Aspen poplar	17	340	6	6	8.5	6	3	Semi mature	Good	Major deadwood. Major bark wounds. Corrected lean. Roots covered / tipped over with spoil and rubble.	No action required.	20+	B2	52
G02	Silver birch (x2)	17	220, 190 & 240, 250, 200, 210	4.5	4.5	4.5	4.5	2	Semi mature	Fair	Major bark wounds. Multi stem. Roots covered / tipped over with spoil and rubble.	No action required.	20+	B2	92
T03	Sycamore	10	130, 100, 100, 70	3	4	3	3	/	Young	Poor	Multi stem. Growing through palisade fence.	Remove to ground level and treat stump.	<10	U	18
T04	Norway maple	9	140, 150	4	3	4	4	2	Young	Poor	Major bark wounds. Twin stemmed. Growing through palisade fence.	Remove to ground level and treat stump.	<10	U	19
G05	Sycamore (x2)	15	390 & 240	6	6	6	5.5	2	Semi mature	Good	Restricted root environment with road to East. Growing on localised embankment. Ground to West tipped over. Twin stemmed from 2m. Second tree self set to West at base of larger tree.	Remove smaller tree to benefit parent.	20+	B1	68

Tree Survey in accordance with BS5837:2012

Estimated dimensions (for offsite or otherwise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m)				Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m ²)
				N	E	S	W								
T06	Norway maple	10	290	3	5	5	4	2	Young	Fair	Restricted root environment. Road to East. Growing @ top of localised embankment on fence line/through fence. Major bark wounds.	Remove to ground level and kill stump.	<10	U	38
G07	Hawthorn, Dogwood, Norway maple, Whitebeam	5-8	<150	2	2	2	3	/	Young	Fair	Restricted root environment with road to East. Growing at edge of footpath on fence line.	Remove damaged Whitebeam. Prune to clear pavement on roadside of fence.	10+	C2	10
G08	Norway maple	10	140, 100 & 100, 100	4.5	4.5	4.5	4.5	/	Young	Fair	Restricted root environment with road to East. Growing at edge of footpath on/around fence & barbed wire. Crossing limbs. Multi stem.	Remove to ground level and kill stump.	<10	U	13
T09	Poplar	18	850	6.5	8	8	7	2	Mature	Fair	Restricted root environment with road to East. Ground to West tipped over/raised levels with debris/rubble. Growing at base of localised slope. Random past pruning / surgery. - topped at 6m. Major pruning wounds. Major deadwood/snags. Major branch socket cavities forming. Decay entry points present	Remove/reduce by deadwood. Re-pollard due to proximity to road.	10+	C1	327

Tree Survey in accordance with BS5837:2012

Estimated dimensions (for offsite or otherwise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m)				Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m ²)
				N	E	S	W								
T10	Poplar	17	650	4	7	5	7	3	Mature	Fair	Restricted root environment with road to East, ground to West, tipped over. Random past pruning / surgery topped at 6m. Major pruning wounds. Major deadwood/snags. Major branch socket cavities. Decay entry points present.	Remove/reduce by deadwood. Re-pollard due to proximity to road.	10+	C1	191
T11	Poplar	17	760	6	6	5	6.5	3	Mature	Fair	Restricted root environment with road to East, ground to West tipped over. Random past pruning / surgery - topped at 6m. Major pruning wounds. Major deadwood / snags. Major branch socket cavities forming. Decay entry points present.	Remove/reduce by deadwood. Re-pollard due to proximity to road.	10+	C1	261
T12	Poplar	15	600	5	3	6	5	3	Mature	Fair	Restricted root environment with road to East, ground to West tipped over. Random past pruning / surgery - topped at 6m. Major pruning wounds. Major deadwood / snags. Major branch socket cavities forming. Decay entry points present.	Remove/reduce by deadwood. Re-pollard due to proximity to road.	10+	C1	163

Tree Survey in accordance with BS5837:2012

Estimated dimensions (for offsite or otherwise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m)				Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m ²)
				N	E	S	W								
T13	Poplar	15	630	5	7	5	4	3	Mature	Fair	Restricted root environment with road to East, ground to West tipped over. Random past pruning / surgery - topped at 6m. Major pruning wounds. Major deadwood / snags. Major branch socket cavities. Crown dieback. Internal decay present. Large old branch cavity to South.	Remove to ground level and treat stump.	<10	U	180
T14	Poplar	23	870	9	7	9	9	3	Mature	Good	Restricted root environment with road to East, substation to South, ground to West tipped over. Random past pruning/surgery - topped at 4m. Large branch tear out wound to East. Major deadwood snags. Major branch socket cavities. Decay entry points present.	Crown reduce to 10m due to proximity to road.	20+	B2	342

Tree Survey in accordance with BS5837:2012

Estimated dimensions (for offsite or otherwise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m)				Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m ²)
				N	E	S	W								
T15	Poplar	15	660	7	6	5	5	1	Mature	Fair	Restricted root environment with road to East and substation Northwest. Random past pruning / surgery - topped at 6m. Major pruning wounds. Major deadwood/snags. Major branch socket cavities forming. Decay entry points present.	Remove/reduce by deadwood. Re-pollard due to proximity of road.	10+	C1	197
T16	Goat willow	9	170, 200	3	4	5	5	2	Young	Fair	Growing through palisade fence.	Remove to ground level and treat stem.	<10	U	31
T17	Poplar	15	640	4	7	5	5.5	2	Mature	Fair	Restricted root environment with road to East. Random past pruning / surgery - topped at 6m. Major deadwood/snags.	Remove/reduce by deadwood. Re-pollard due to proximity of road.	10+	C1	185
T18	Poplar	15	550	3	7	5	6	2	Mature	Fair	Restricted root environment with road to East. Random past pruning / surgery - topped at 6m. Major deadwood/snags.	Remove suspended or broken limbs to North. Remove/reduce by deadwood. Re-pollard due to proximity of road.	10+	C1	137
T19	Poplar	15	640	3	7	5	6	2	Mature	Fair	Restricted root environment with road to East. Random past pruning / surgery - topped at 6m. Major deadwood/snags.	Remove/reduce by deadwood. Re-pollard due to proximity of road.	10+	C1	185

Tree Survey in accordance with BS5837:2012

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Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m)				Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m ²)
				N	E	S	W								
T20	Poplar	15	600	4	7	5	7	2	Mature	Fair	Restricted root environment with road to East. Random past pruning / surgery - topped at 6m. Major deadwood/snags.	Remove/reduce by deadwood. Re-pollard due to proximity of road.	10+	C1	163
T21	Poplar	15	660	3.5	7	5	6	2	Mature	Fair	Restricted root environment with road to East. Random past pruning / surgery - topped at 6m. Major deadwood/snags.	Remove/reduce by deadwood. Re-pollard due to proximity of road.	10+	C1	197
T22	Poplar	15	660	3	7	5	5	2	Mature	Fair	Restricted root environment with road to East. Random past pruning / surgery - topped at 6m. Major deadwood/snags.	Remove/reduce by deadwood. Re-pollard due to proximity of road.	10+	C1	197
T23	Poplar	15	580	4	7	5.5	5	2	Mature	Fair	Restricted root environment with road to East, derelict small brick building to West. Random past pruning/surgery - topped at 6m. Storm damage to South. Major deadwood / snags.	Remove/reduce by deadwood. Re-pollard due to proximity of road..	10+	C1	152
T24	Poplar	15	700	3.5	7	4.5	5	2	Mature	Fair	Restricted root environment with road to East. Random past pruning / surgery - topped at 6m. Major deadwood /snags.	Remove/reduce by deadwood. Re-pollard due to proximity of road.	10+	C1	222

Tree Survey in accordance with BS5837:2012

Estimated dimensions (for offsite or otherwise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m)				Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m ²)
				N	E	S	W								
T25	Poplar	15	550	3	7	7	4	2	Mature	Poor	Restricted root environment, with road to East. Random past pruning/surgery - topped at 6m. Major pruning wounds. Major deadwood/snags. Major branch socket cavity to East. . Internal decay suspected.	Remove to ground level and treat stump.	<10	U	137
T26	Ash	10	250#	4	1	5	4#	2	Young	Poor	Unbalanced/supressed Crown.	No action required.	10+	C1	28
G27	Cherry	10	160 & 200,120,120,130,100,100	5	5	5	5	3	Young	Good	Restricted root environment, growing in and around rubble /concrete. Multi stem.	No action required.	20+	C2	44
G28	Cherry	5-8	<250	3	3	3	3	1.5	Semi mature	Fair / Poor	Restricted root environment with retaining wall to North, tarmac car park to South. Random past pruning/surgery - topped at 3m. Decay entry points present.	Remove to ground level.	<10	U	28
T29	Cherry	6	270	2	2	2	2	1.5	Young	Dead		Remove to ground level.	<10	U	33
T30	Cherry	6	380	4	4	4	4	1.5	Semi mature	Fair	Restricted root environment with retaining wall to South, tarmac to North.	No action required.	10+	C1	65

Tree Survey in accordance with BS5837:2012

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Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m)				Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m ²)
				N	E	S	W								
T31	Cherry	5	180	3	3	3	3	1.5	Young	Poor	Restricted root environment with retaining wall to South, tarmac to North.	Remove to ground level.	<10	U	15
T32	Cherry	5	230	3	3	3	3	1.5	Young	Poor	Restricted root environment with retaining wall to South, tarmac to North.	Remove to ground level.	<10	U	24
T33	Cherry	6	300	3	3	3	3	2	Semi mature	Fair	Restricted root environment with retaining wall to South, tarmac to North. Compression forks / included bark.	No action required.	10+	C1	41
T34	Cherry	5	150	3	3	3	3	2	Young	Fair	Restricted root environment with retaining wall to South, tarmac to North.	No action required.	20+	C1	10
T35	Cherry	10	330	6	6	6	6	2	Mature	Fair	Restricted root environment with retaining wall to South and West. Low hanging canopy.	No action required.	20+	B2	49
G36	Goat willow	5-8	<150					/	Young	Good	Self set trees growing from tarmac.	No action required.	20+	C1	10
G37	Poplar	10	500-760	5	5	5	5	2	Mature	Fair	Avenue of Poplar trees. Random past pruning/surgery. - topped at 6m and maintained as pollards. Major pruning wounds. Major deadwood snags. Major bark wounds. Trunk lean to East.	Remove/reduce by deadwood. Remove suspended / broken limb.	20+	B2	113

Tree Survey in accordance with BS5837:2012

Estimated dimensions (for offsite or otherwise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m)				Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m ²)
				N	E	S	W								
T38	Poplar	11	630	2	5	4	4	3	Mature	Fair	Random past pruning/surgery - topped at 6m. Major pruning wounds. Major deadwood /snags. Major bark wounds. Decay entry points present.	Remove/reduce by deadwood.	10+	C1	180
T39	Poplar	11	620	5	5	4	6	2.5	Mature	Fair	Random past pruning/surgery - topped at 6m. Major deadwood/snags. Major bark wounds. Major branch socket cavities. Decay entry points present.	Remove/reduce by deadwood.	10+	C1	174
T40	Poplar	10	600	3	3	5	4	2	Mature	Fair	Random past pruning/surgery - topped at 6m. Major deadwood snags. Major branch socket cavity and decay.	Remove/reduce by deadwood.	10+	C1	163
T41	Poplar	11	670	4	4	4	5.5	2	Mature	Poor	Random past pruning /surgery - topped at 6m. Major deadwood/snags. Internal decay suspected. Fungal fruiting bodies evident.	Remove to ground level and treat stump.	<10	U	203
T42	Sycamore	21	730	7.5	9	9	5.5	2	Mature	Fair	Major bark wounds. Physical damage/vandalism. Past fire damage to West. Low hanging canopy.	No action required.	20+	B2	241

Tree Survey in accordance with BS5837:2012

Estimated dimensions (for offsite or otherwise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m)				Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m ²)
				N	E	S	W								
T43	Cherry	11	300	5	5	5	5	2	Mature	Good	Restricted root environment to edge of demolished buildings. Corrected/trunk lean.	No action required.	20+	B2	41
T44	Poplar	20	820	3	8	4	5	2	Mature	Poor	Past storm damage. Large branch loss from canopy. Significant wound/cavity from loss of main stem to South 2m x 750mm. Internal decay present.	Remove to ground level and treat stump.	<10	U	304
T45	Poplar	22	680	5	10	4.5	6	3	Mature	Fair	Restricted root environment with canal to North. Random past pruning/surgery - topped at 6m. Major pruning wounds. Major deadwood snags.	Re-pollard to 6m.	10+	C1	209
G46	Goat willow, Birch, Cherry & occasional Sycamore	3-5	<150					/	Young	Good	Self set trees.	No action required.	C1	20+	10
T47	Sycamore	10	340	4	4	4	4	3	Semi mature	Good	Restricted root environment with retaining wall to North and South West.	No action required.	20+	B2	52
G48	Laburnum, Cherry, Dogwood, Elder with occasional Sycamore	5-10	<250					/	Young	Good	Restricted root environment with retaining wall to North, hard standing to South.	No action required.	20+	C2	28

Tree Survey in accordance with BS5837:2012

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Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m)				Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m ²)
				N	E	S	W								
G49	Sycamore (x1), Cherry (x2)	10-12	<300	3	3	3	3	2	Semi mature / mature	Fair	Restricted root environment with retaining wall North. Cherry damaging wall. Unbalanced/supressed Crown.	Remove Cherry to repair retaining wall.	20+	C2	41
T50	Goat willow	8	350	3	5	5	3	1	Semi mature	Good		No action required.	20+	C2	55
G51	Sycamore (x3)	15-17	240 - 460	6.5	6.5	6.5	6.5	2	Semi mature / mature	Good	Restricted root environment with low retaining wall to East, canal to North. Major deadwood snags.	Remove/reduce by deadwood. Remove smaller tree of group to benefit the larger trees.	20+	B2	96
T52	Crack willow	18	850	5#	6.5	4	4.5	2	Mature	Fair	Major bark wound at base to South. Random past pruning / surgery - topped at 6m.	No action required.	20+	B2	327
T53	Sycamore	16	230, 180, 240	5.5	4	5.5	5.5	2	Young	Good	Multi stem (x 3).	No action required.	20+	B2	65
G54	Birch, Goat willow, Sycamore	3-5	<150					/	Young	Fair	Scattered self set trees between canal retaining wall and footpath.	No action required. Consider removal to protect retaining wall.	20+	C1	10
T55	Norway maple	10	320	3.5	3.5	3.5	3.5	3	Young	Good	Restricted root environment with canal to North, ditch to South.	No action required.	20+	B2	46
T56	Norway maple	10	350	7	7	7	7	3	Young	Fair	Restricted root environment with canal to North, ditch to South. Crown dieback.	No action required.	10+	C2	55

Tree Survey in accordance with BS5837:2012

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Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m)				Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m ²)
				N	E	S	W								
G57	Goat willow, Birch, Sycamore, Dogwood, Willow	5-8	<150						Young	Fair	Scattered self set scrub.	No action required.	10+	C2	10
G58	Norway maple	10	180 - 300	5	5	5	5	2	Young	Good	Restricted root environment with canal to North. Moderate deadwood snags. Random past pruning/surgery.	Remove/reduce deadwood. Remove smaller vandalised tree to South East of group.	20+	B2	41
G59	London plane	15-17	370 - 480	8	8	8	8	3	Semi mature	Good	Restricted root environment with canal to North. Moderate deadwood snags. Storm damage.	Remove/reduce by deadwood.	40+	B2	104
G60	Birch, Goat willow	10-15	<200					/	Young	Fair		No action required.	20+	C2	18
T61	Goat willow	6	300	5	3	2	5	0.5	Mature	Poor	Growing at base of canal bridge wall. Major pruning wounds. Unbalanced / suppressed crown. Random past pruning / surgery. Internal decay present.	Remove to ground level and treat stump.	<10	U	41
G62	Poplar & Sycamore (x1)	13-15	500 Av	5	5	5	5	2	Mature	Fair	Avenue trees. Random past pruning/surgery - topped at 10m.	No action required.	10+	B2	113

Tree Survey in accordance with BS5837:2012

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Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m)				Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m ²)
				N	E	S	W								
W63	Ash, Birch, Alder, Cherry, Hawthorn, Elder, Dogwood with occasional large multistem Goat willow & Oak saplings	5-12	<300						Young	Fair	Scattered self set trees in and around derelict building and hard standing.	Clear vegetation growing through boundary fence to provide a minimum 2.4m clearance to pavement.	20+	C2	41
T64	Sycamore	15	400	7	4.5	6.5	4.5	2	Semi mature	Good	Growing at top of grass bank retaining wall at base restricting root growth. Major bark wound at base of trunk to South.	No action required.	40+	B2	72
T65	Sycamore	12	260	6	5	5	4	2	Young	Fair	Growing at top of grass bank with road at base restricting root growth. Random past pruning / surgery with major pruning wounds. Poor habit.	No action required.	40+	B2	31
T66	Ash	15	390	6.5	5	8	2	4	Young	Good	Growing at top of grass bank with road at base restricting root growth. Random past pruning / surgery	No action required.	40+	B2	69
T67	Sycamore	18	860	8.5	8.5	8	6	2	Mature	Good	Growing at top of grass bank with road at base restricting root growth.	No action required.	40+	B2	335

Tree Survey in accordance with BS5837:2012

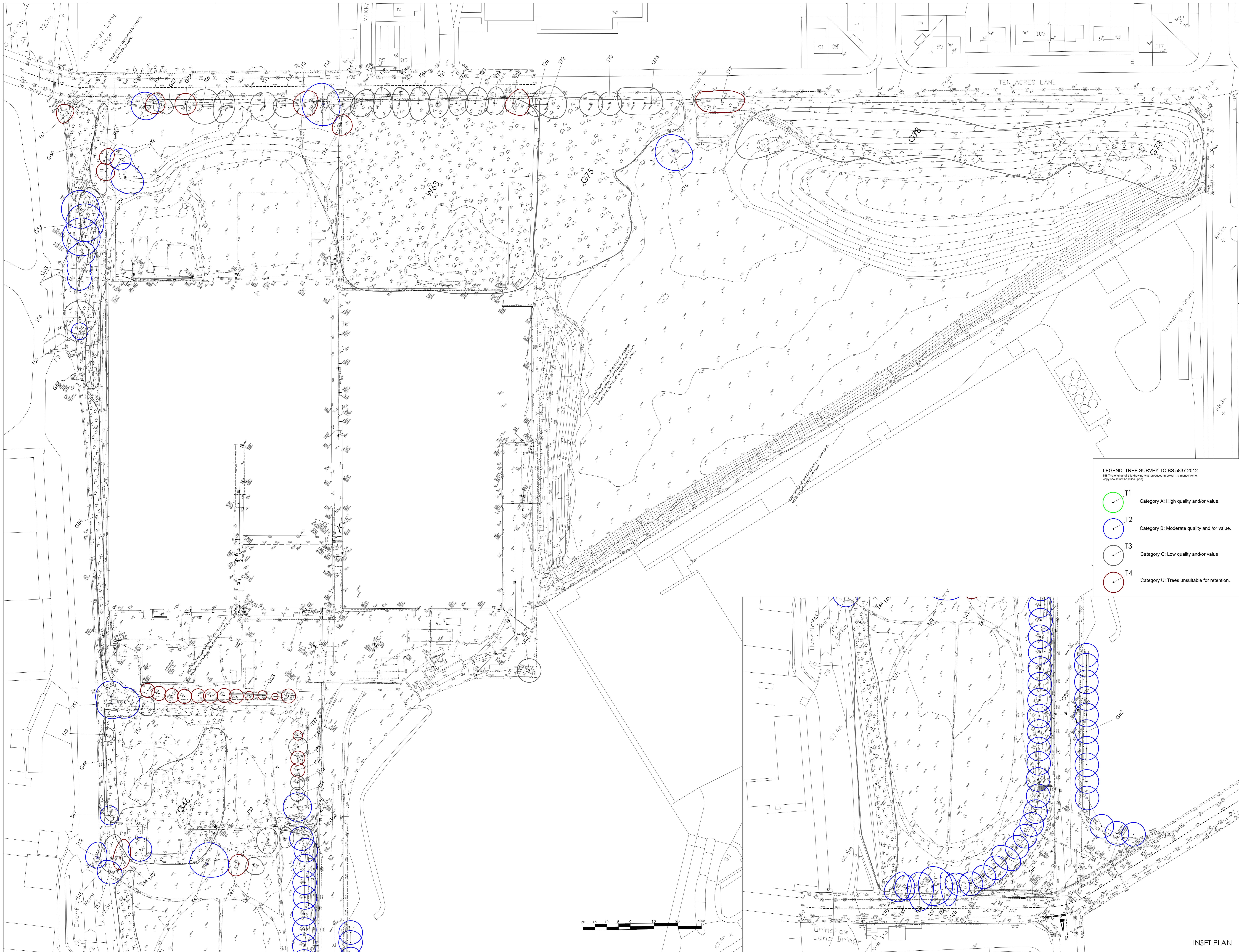
Estimated dimensions (for offsite or otherwise inaccessible trees where accurate data cannot be recovered).

Tree / Group Number	Common Name	Height (m)	Stem(s) Diameter (mm)	Branch Spread (m)				Canopy Height (m) / First Significant Branch	Life Stage	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Remaining Contribution (years)	Category Grading	Root Protection Area (m ²)
				N	E	S	W								
T68	Ash	23	480	6.5	6	10	5	3	Young	Good	Growing at top of grass bank with road at base restricting root growth. Random past pruning / surgery with major pruning wounds.	Remove deadwood.	20+	B2	104
T69	Sycamore	18	460	5.5	3.5	5	5	2	Semi mature	Good	Restricted root environment with road to South.	No action required.	40+	B2	96
T70	Poplar	12	800	3.5	8	7	5	2	Mature	Fair	Restricted root environment with road to South. Random past pruning / surgery topped and maintained as pollard. Major pruning wounds. Major deadwood / snags. Major branch socket cavities. Decay entry points present.	Reduce deadwood.	10+	B2	290
G71	Hazel, Holly, Dogwood, Goat willow, Guelder rose, Blackthorn with occasional Silver Birch, Ash, Sycamore & Cherry trees.	5-12	<300					/	Young	Good	Planting extending down bank to edge of canal.	Remove debris & litter.	40+	C2	41
T72	Poplar	15	580	7	8	8	5	2	Mature	Poor	Restricted root environment with road to East. Random past pruning / surgery - topped at 6m. Major deadwood / snags.	Remove/reduce by deadwood. Re-pollard due to proximity of road.	10+	C2	152

Tree Survey in accordance with BS5837:2012

Estimated dimensions (for offsite or otherwise inaccessible trees where accurate data cannot be recovered).

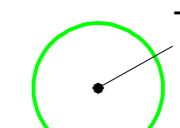
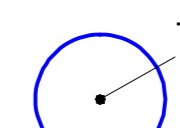
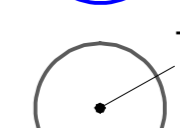
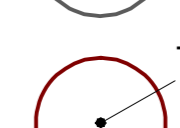
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				N	E	S	W								
G73	Poplar (x2)	13	560-650	5	5	5	5	1.5	Mature	Poor	Restricted root environment with road to East. Random past pruning / surgery - topped at 6m. Major deadwood / snags.	Remove/reduce by deadwood. Re-pollard due to proximity of road.	10+	C2	191
G74	Ash & Sycamore	10-12	220 - 340	7	5	5	2	2	Semi mature	Poor	Restricted root environment with road to East. Single and twin stemmed trees with poor habit. Unbalanced / supressed crowns.	No action required.	20+	C2	52
G75	Goat willow, Hawthorn, Dogwood with occasional Silver birch,	5-10	<300					/	Young	Good	Self set twin amd mutli stem trees growing from old tipped material.	No action reqreiod.	40+	C2	41
T76	Poplar	16	900	7.5	6.5	9	8	2	Mature	Fair	Random past pruning / surgery - topped at 6m and maintained as pollard.	No action required.	20+	B2	366
T77	Silver birch, Ash Sycamore	5-10	<150					/	Young	Poor	Multi stem self set trees to fenceline.	Remove to ground level.	20+	U	10
G78	Oak, Field maple, Cherry, Rowan, Silver birch, Alder, Ash, Hazel, Black Pine with Goat willow.	5-7	<150					/	Young	Good	Scattered planted and self set trees to side of embankment.	Remove stakes and ties from established trees.	40+	C1	10
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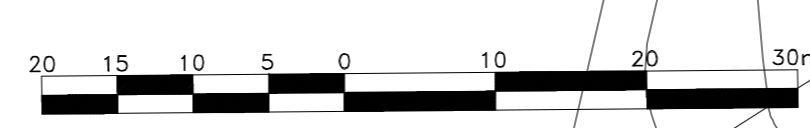


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rev	date	amendments	alt
A	05/02/2021	Survey area extended.	E.H
B	08/02/2021	Graphics amended.	E.H

LEGEND: TREE SURVEY TO BS 5837:2012
 NB: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

-  T1 Category A: High quality and/or value.
-  T2 Category B: Moderate quality and/or value.
-  T3 Category C: Low quality and/or value.
-  T4 Category U: Trees unsuitable for retention.



client:
CANMOOR

project:
GRIMSHAW LANE,
MANCHESTER

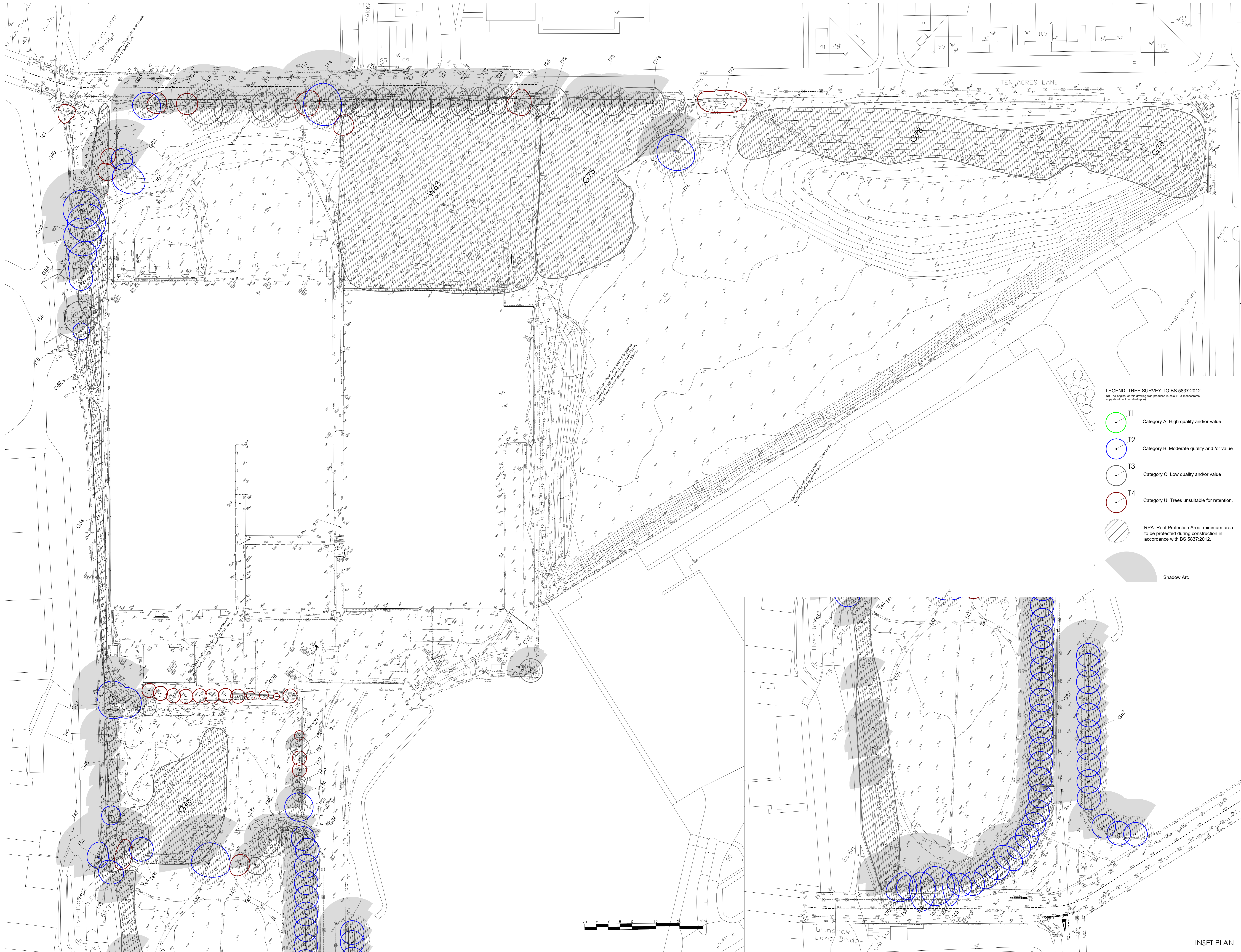
title:
TREE SURVEY PLAN

status:
PLANNING

date	drawn	number
OCT20	E.C.H	20-23-01
scale/9A6	checked	revision
1:500	T.G-W	B

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INSET PLAN

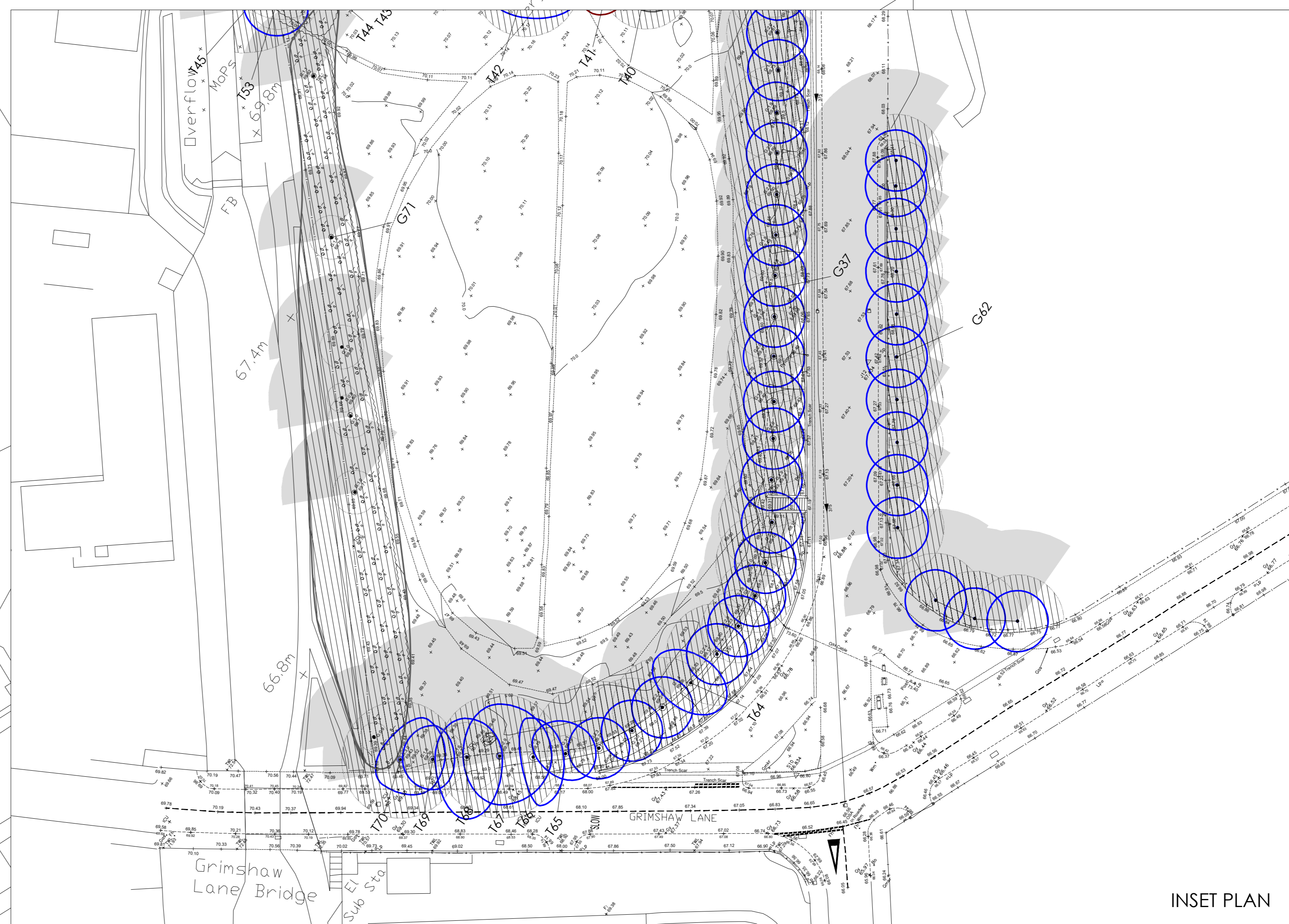


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- T2 Category B: Moderate quality and/or value.
- T3 Category C: Low quality and/or value
- T4 Category U: Trees unsuitable for retention.
- RPA: Root Protection Area: minimum area to be protected during construction in accordance with BS 5837:2012.
- Shadow Arc




client:
CANMOOR

project:
GRIMSHAW LANE,
MANCHESTER

title:
TREE CONSTRAINTS PLAN

status:
PLANNING

date: OCT20	drawn: E.C.H	number: 20-23-02
scale/9A6: 1:500	checked: T.G-W	revision: B

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