Claire Raw BSc (Hons) MArborA – Providing Arboricultural Surveys

Arboricultural Impact Assessment

30 East Street, Whitburn

February 2023

Contents

1.0 Introduction

1.1 Survey Scope

1.1.1 The survey has been conducted at 30 East Street, Whitburn to consider the impact on the trees in the neighbouring property garden of the proposed development layout and associated infrastructure.

1.1.2 Trees have been surveyed in accordance with BS5837:2012 Trees in Relation to design, demolition and construction – Recommendations.

1.1.3 The trees have been plotted using measurements taken on site and positions therefore are considered approximate. All measurements should be checked on site.

1.2 Site Details

1.2.1 A site visit was undertaken in January 2023.

1.2.2 There are no trees within the site boundary of the development area however there are four trees located close to the boundary in the neighbouring property garden. There are trees in the front garden of no. 30 but these are separated from the site by a close boarded fence.

1.2.3 The existing property is a two storey dwelling with a single story garage attached to the side.

1.2.4 Access is via the existing driveway.

1.3 Existing Protection of Trees

1.3.1 Trees can be protected by being located within a Conservation area or by virtue of a Tree Preservation Order. The Local Authority can advise as to whether either of these applies.

1.3.2 For a works to trees in a Conservation Area notice of 6 weeks of intent to carry out works needs to be made to the Local Authority. For trees protected by virtue of a Tree Preservation Order it is necessary to make an application to the Local Authority before any works can be undertaken.

1.3.3 It is an offence to undertake works on trees under protection without making the relevant applications.

2.0 Summary of Tree Information

2.1 Individuals and Groups

2.1.1 There were 4 individual trees surveyed. Two of the trees have been given a B category rating (B2) and two of the trees have been given a C category rating (C1). In addition to the individual trees 1 group was surveyed.

2.2 Root Protection Areas

2.2.1 The root protection area is indicated for each tree, group and hedge on each of the plans. The red circles around the trunks indicated the root protection areas as calculated in accordance with the British Standard (BS5837:2012). They are indicative only and do not take into account site specific condition such as topography and underground land forms, built structures and underground services.

2.2.2 There should be no level changes made or excavation within the root protection area of the retained trees.

2.2.3 The trees are located on the neighbouring property at a slightly raised level to the development area. The development area is currently covered with hard surfacing (figure 1) so root spreads may have been affected by this and the level change. Therefore before works commence and foundation design is finalised it would be prudent to undertake investigations to see if roots have spread into the area proposed for development.

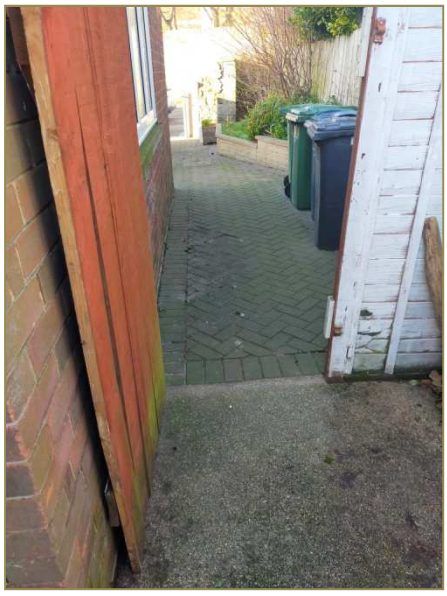


Figure 1. Surfacing within root protection areas.

2.2.4 Without investigations it should not be assumed that the roots are not beneath the hard surfaces and therefore they will need to be lifted in the appropriate way. This means by hand and any roots encountered must be treated in the appropriate way. When surfacing is lifted for any roots that have been exposed the guidance from the British Standard BS5837-2012 Trees in relation to design, demolition and construction – Recommendations is as follows. Any exposed roots should be wrapped or covered to avoid desiccation and protect them from environmental changes. The wrapping should be removed before new surface fill is installed; this should be as soon as possible. Roots requiring pruning (less than 25mm and not in clumps unless there has been consultation with a suitably

qualified arborist can be done with an appropriate sharp tool. The roots must be surrounded by topsoil, loose sand (not builders' sand due to high salt content) or another appropriate loose granular fill. When the time occurs to install the new permanent surfacing (either hard or soft landscaping) the temporary fill should be removed and good quality uncontaminated soil or other suitable material used. There must be no contamination from the building materials to the exposed wounds on any of the trees/roots. For this site if roots are encountered it will be necessary for a tree friendly foundation design to be agreed upon (further details in section 4.0).

2.3 **Trees to be Removed**

2.3.1 There are no trees to remove to facilitate the development

2.4 **Additional Tree Works Required**

2.4.1 It would be prudent to establish a clearance of 1.5m between the edge of the proposed extension and the edge of the canopies of the trees that overhang the site.

2.4.2 Any tree works carried out are to be in line with BS 3998 (2010) – Recommendations for Tree Work and the appropriate applications in place where required.

3.0 Tree Protection Measures During Development

3.1 Protective Barriers

3.1.1 As the trees are located within the neighbouring property garden behind a close boarded fence the trunks are already protected and Protective Barriers will not be required. However other protective measures will be necessary.

3.2 Ground Protection Measures

3.2.1 A portion of the existing surfacing will need to be lifted as described in section 2.2 to establish if roots have extended to the proposed development area. Where possible the existing surfacing should be retained to protect any underlying roots throughout the development (both demolition and construction).

3.2.2 If the existing surfacing is to be lifted in its entirety then Ground Protection will be required to provide a working space in the root protection area of trees during the demolition and construction of the development as indicated by the blue hatching on the tree protection plans should there be underlying roots.

3.2.3 The level of ground protection required will depend upon the weight of the load that will be travelling over it. BS 5837: 2012 provides the following recommendations:

- Where the movement will be pedestrian only there are two options. One it to use a single thickness of scaffold boards supported on a scaffold frame therefore creating a raised walkway. The second option is to place a single thickness of scaffold boards on a compression resistant layer (e.g. 100mm woodchips), laid on a geotextile membrane.

- Where movement will be a pedestrian operated plant up to a gross weight of 2 tonnes proprietary inter-linked ground protection boards could be placed on top of a compression resistant layer (e.g. 150mm woodchips), laid on a geotextile membrane.

- Where a wheeled or tracked machine/construction traffic greater than a gross weight of 2 tonnes an alternative system of an engineered specification will be required to accommodate the likely load.

4.0 Demolition/Construction Methods

4.1 Demolition of Existing Extension and Lifting of Surfacing

4.1.1 The garage section of the existing extension is to be demolished and some existing surfacing lifted. Surfacing within the root protection areas of the trees must be lifted with care and by hand. Any roots encountered must be treated as described in section 2.2 of this report. It is accepted that it may not be possible for all elements of the demolition of the garage to be undertaken by hand. Where it is necessary to use machinery it should be positioned outside of the root protection areas of the trees and care taken when using the arms/boom to not cause damage to any trees. There must be no level changes within the root protection areas of the trees.

4.2 Alternative Foundation Design

4.2.1 Following the site investigations if roots are encountered where the extension is proposed it will not be possible to use traditional foundations and an alternative such as pile foundations are required.

4.2.2 The foundation design can only be agreed upon following the results of site investigations to establish the presence of roots. If there are no roots then tradition methods can be used, if there are roots a tree friendly alternative will need to be sought.

4.3 New Surfacing

4.3.1 If any new surfacing is to be laid within root protection areas it will be necessary to use a no-dig tree friendly option.

4.3.2 Surface installation will be conducted in accordance with the guidance provided in BS5837: 2012 and as per the guidance provided by the supplier of the engineered solution.

4.3.3 Factors taken into consideration are as follows;

- The tolerance of the tree species.
- The design should not require excavation other than the removal of a turf layer or other surface vegetation using hand tools.
- Surfacing that is to be used by construction traffic should be suitable for purpose.
- Localised compaction should be avoided.
- The new permanent hard surface should not exceed 20% of the existing unsurfaced ground within the root protection area.
- Where there is the risk of waterlogging appropriate drainage must be included.
- Oxygen and water must be able to diffuse into the soil beneath the engineered surface.
- An appropriate sub-base must be used for a finished hard surface and can include three-dimensional cellular confinement systems or piles, pads and elevated beams to support bridging over roots (the use of two-dimensional load suspension systems is not recommended when the surface will be used by vehicles.

- The surface should be able to withstand deformation by tree roots and set away from the

4.4 **Installation of Services**

4.4.1 Where new services are required and pipe work is to be laid underground it will be necessary where possible to install them outside of the root protection areas of the trees. If it is not possible to avoid the root protection areas (indicated by the red circles on the tree protection plan) a trenchless method of installation must be used.

4.4.2 Trenchless methods such as thrust boring are the alternatives to digging a trench. ***Advice from the contractor to carry out the work should be taken and the method chosen approved within the planning application.***

4.4.3 For any parts of the drainage system construction where trenchless methods cannot be used these should be placed outside of root protection areas or tree removals may be required should the excavations be thought to encroach too far on the trees.

5.0 Future Site Management

5.1 On Completion of Development

5.1.1 Following completion of the development and all materials including tree protection have been removed from the site a 'walk over' survey of the site should be undertaken. This survey will be to ascertain whether there has been damage to any trees and so remedial works can be undertaken where necessary although it is unlikely provided that the tree protection measures are adhered to.

6.0 Conclusion

6.1 Provided that protective measures as described in this report are adhered to and any tree works undertaken are done in accordance with BS3998 (2010) – Recommendations for Tree Work, the tree cover on this site should remain in order.

Appendix 1

Tree & Group Details

Tree	Species	Height (m)	Crown Spread (m)				Trunk Diameter (mm)	Root Protection Area Radius (m)	No. of Stems	Crown Clearance (m)	Height & Direction of First Significant Branch (m)	Age	Physiological Condition	Structural Condition	Life Expectancy (Years)	BS5837 Category	Comments	Recommendations
			N	E	S	W												
Individual Trees																		
1	Whitebeam	6.5	3.5	3.5	4.0	3.0	550	6.6	1	2.5	2.0 W	Mature	Fair	Fair	10+	B2	Tree is located in the neighbouring property garden adjacent to the boundary with 30 East Street. Previous crown reductions have been undertaken. Multiple stems from 2.0m with included bark at the unions. There is a wound with decay present at 2.0m on the northern flank.	Ground investigations to be undertaken to establish if roots extend into the development area (see section 2.2). Prune to create a 1.5m clearance between the edge of the canopy and the edge of the proposed extension. The existing fencing provides protection for the tree trunk. Existing surfacing to be retained where possible to provide ground protection. Where surfacing is lifted (in a tree friendly way as described in the report) if there are roots ground protection as described in section 3 and indicated on the plans is required.
2	Cherry	5.0	3.5	3.5	3.5	4.5	324	3.9	4	1.5	1.7 E	Mature	Fair	Fair	10+	C1	Tree is located in the neighbouring property garden adjacent to the boundary with 30 East Street. 4x codominant stems from 1.2m. Trunk leans towards the south. Previous crown reductions have been undertaken.	Ground investigations to be undertaken to establish if roots extend into the development area (see section 2.2). Prune to create a 1.5m clearance between the edge of the canopy and the edge of the proposed

Tree	Species	Height (m)	Crown Spread (m)				Trunk Diameter (mm)	Root Protection Area Radius (m)	No. of Stems	Crown Clearance (m)	Height & Direction of First Significant Branch (m)	Age	Physiological Condition	Structural Condition	Life Expectancy (Years)	BS5837 Category	Comments	Recommendations
			N	E	S	W												
																		extension. The existing fencing provides protection for the tree trunk. Existing surfacing to be retained where possible to provide ground protection. Where surfacing is lifted (in a tree friendly way as described in the report) if there are roots ground protection as described in section 3 and indicated on the plans is required.
3	Silver Birch	8.5	3.0	3.0	3.5	2.5	300	3.6	1	2.0	2.5 N	Mature	Fair	Fair	10+	B2	Tree is located in the neighbouring property garden adjacent to the boundary with 30 East Street. Previous crown reductions have been undertaken.	The existing fencing provides protection for the tree trunk. Existing surfacing to be retained where possible to provide ground protection. Where surfacing is lifted (in a tree friendly way as described in the report) if there are roots ground protection as described in section 3 and indicated on the plans is required.
4	Apple	4.0	2.5	2.5	2.0	1.5	180	2.2	1	2.0	1.7 E	Early Mature	Fair	Fair	10+	C1	Tree is located in the neighbouring property garden adjacent to the boundary with 30 East Street. Previous pruning works have been undertaken. Trunk leans towards the	There is currently a garden shed within the root protection area of the tree, if this is retained then no protective measures are required. If the Garden shed

Tree	Species	Height (m)	Crown Spread (m)				Trunk Diameter (mm)	Root Protection Area Radius (m)	No. of Stems	Crown Clearance (m)	Height & Direction of First Significant Branch (m)	Age	Physiological Condition	Structural Condition	Life Expectancy (Years)	BS5837 Category	Comments	Recommendations
			N	E	S	W												
																	south east.	is removed and the surfacing lifted ground protection measures will be required in the area indicated by the blue hatching on the Tree Protection Plans.
Groups																		
1	Shrubs and garden planting (including Lawson and Leyland Cypress)	<5.0	-	-	-	-	<220	<2.6	-	0	-	Early Mature to Mature	Fair	Fair	20+	C1	Shrub and garden planting within the neighbouring property rear garden.	The group will not be affected by the proposed development.

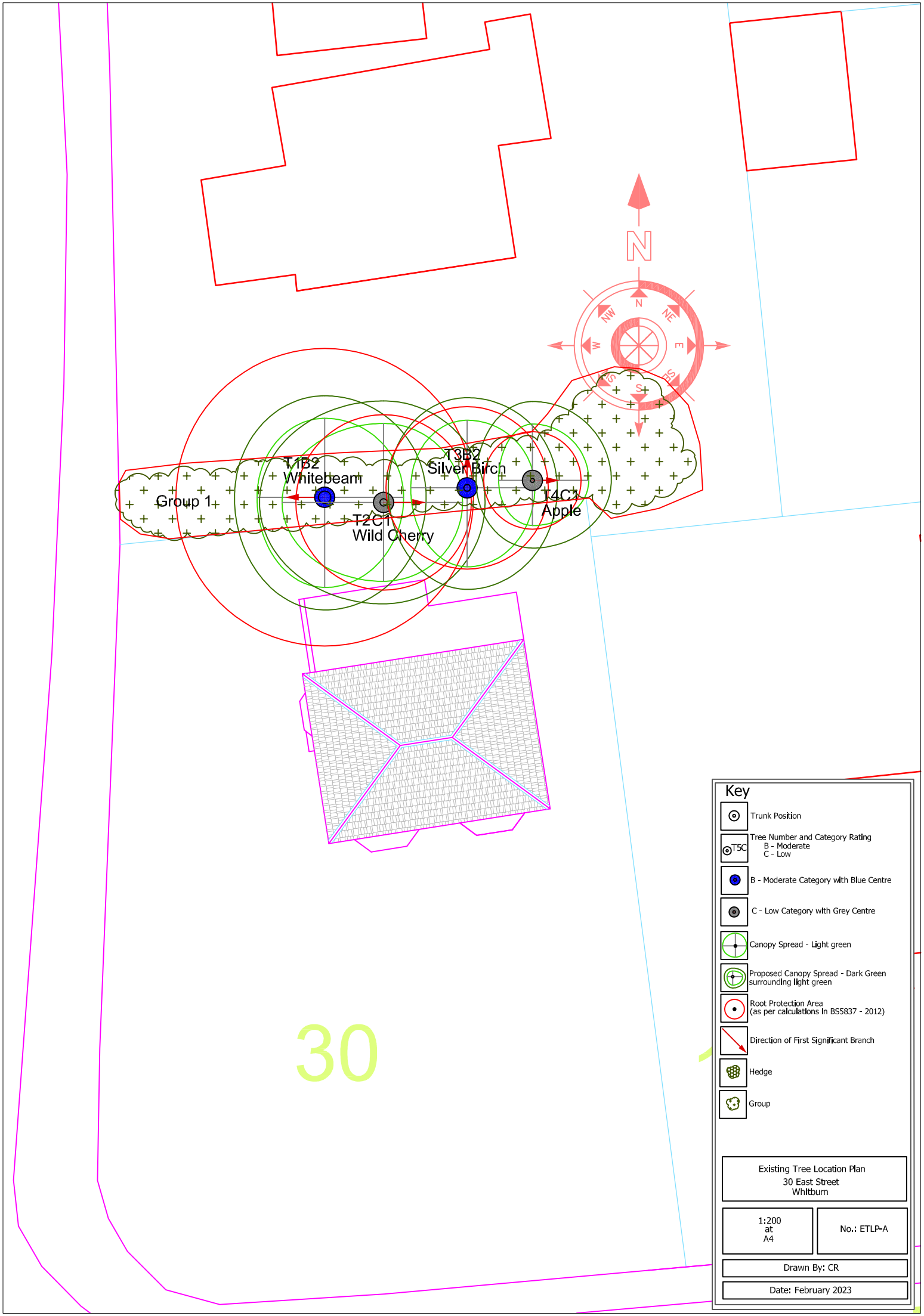
Appendix 2

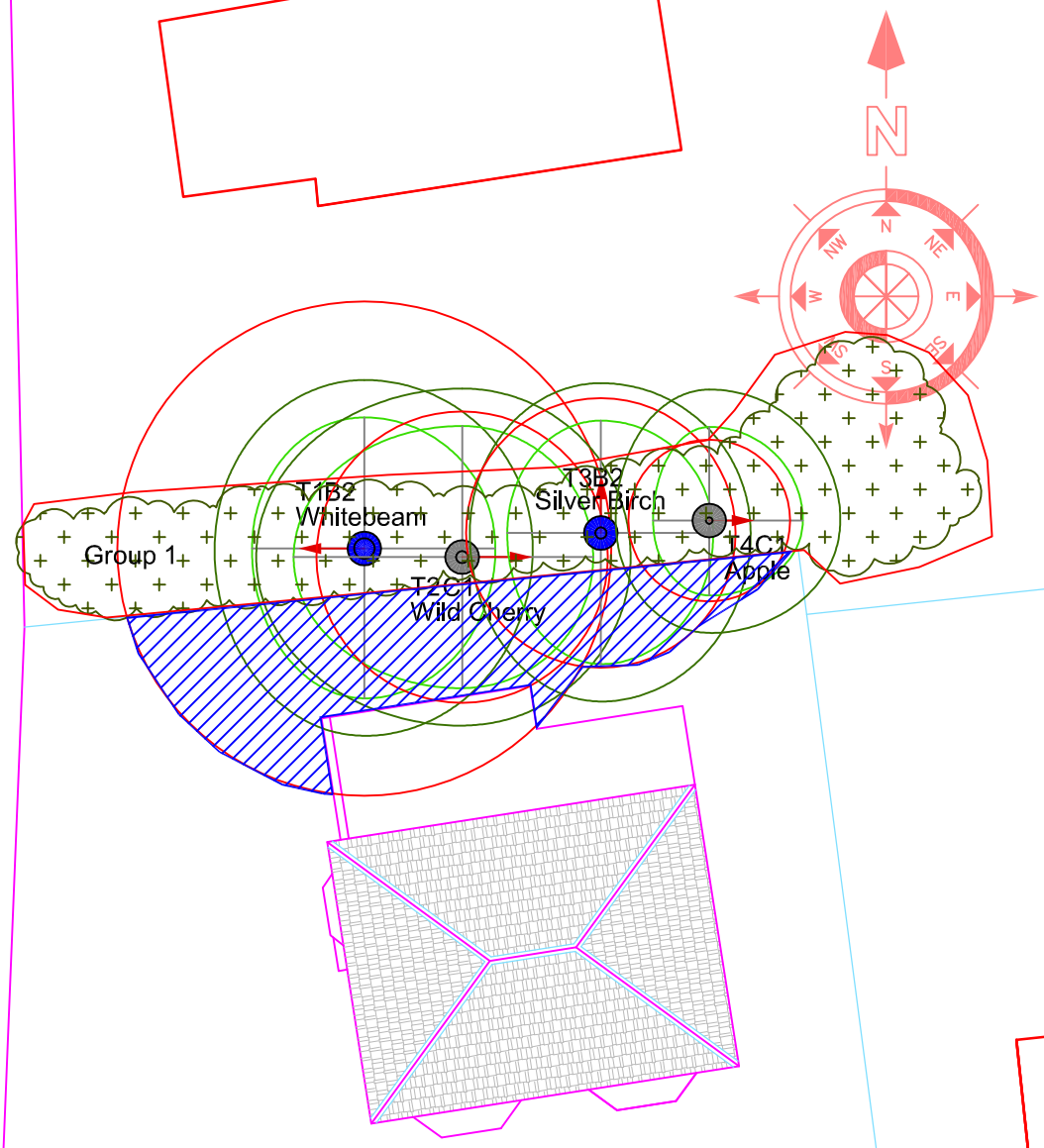
Plans

Existing Tree Location Plan (TLP – A)

Tree Protection Plan During Demolition (TPPD – A)

Tree Protection Plan During Construction (TPPC – A)


N
T1B2
Whitebeam
T3B2
Silver Birch
Group 1
T4C1
Apple
T2C1
Wild Cherry
30
Key
Trunk Position
T5C
Tree Number and Category Rating
B - Moderate
C - Low
B - Moderate Category with Blue Centre
C - Low Category with Grey Centre
Canopy Spread - Light green
Proposed Canopy Spread - Dark Green surrounding light green
Root Protection Area
(as per calculations in BS5837 - 2012)
Direction of First Significant Branch
Hedge
Group
Existing Tree Location Plan
30 East Street
Whitburn
1:200
at
A4
No.: ETLP-A
Drawn By: CR
Date: February 2023



Key

- Trunk Position
- T5C — Tree Number and Category Rating (B - Moderate, C - Low)
- B - Moderate Category with Blue Centre
- C - Low Category with Grey Centre
- Canopy Spread - Light green
- Proposed Canopy Spread - Dark Green surrounding light green
- Root Protection Area (as per calculations in BS5837 - 2012)
- Direction of First Significant Branch
- Group
- Ground Protection Measures required (Blue hatching)

Tree Protection Plan During Demolition
30 East Street
Whitburn

1:200 at A4	No.: TPPD-A

Drawn By: CR

Date: February 2023

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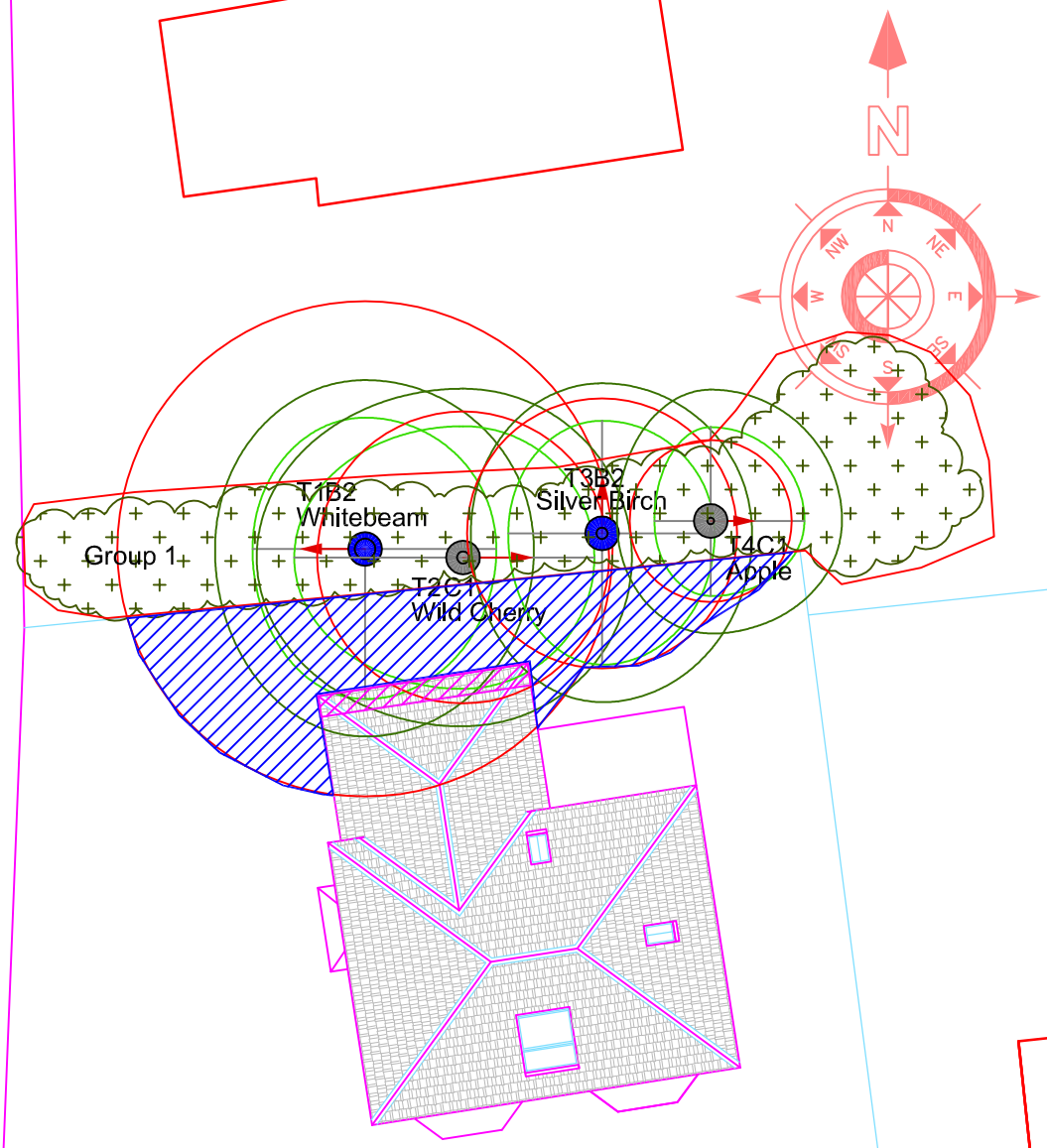

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1

Key

Trunk Position

T5C — Tree Number and Category Rating
B - Moderate
C - Low

B - Moderate Category with Blue Centre

C - Low Category with Grey Centre

Canopy Spread - Light green

Proposed Canopy Spread - Dark Green surrounding light green

Root Protection Area
(as per calculations In BS5837 - 2012)

Direction of First Significant Branch

Group

Ground Protection Measures required (Blue hatching)

Alternative Construction Methods required (Magenta hatching)

Tree Protection Plan During Construction
30 East Street
Whitburn

1:200 at A4

No.: TPPC-A

Drawn By: CR

Date: February 2023