



Waterlooville Telephone Exchange

BS5837 Arboricultural Survey

December 2021



Author: Megan Dalton

Date: 20/12/2021

Approved: Simon Humphreys

Date: 22/12/2021

Project No: J000252

Land & Heritage Ltd

01752 545710

www.landandheritage.com

White Cottage, Higher Metherell, Callington, Cornwall, PL17 8DB

Reg. Co. 10904089

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1. Summary

The proposed development includes a new access along the front of the property, loading area, cable compounds, pole bunds and skips.

35 trees were surveyed, 9 of which were category B, one cotoneaster hedge category U, and the rest category C.

The proposed development has been put forward with two design options, the second option will have the lower impact and require the removal of two category B trees and 10 category C trees. However, nine of the ten category C trees are Common Ash trees at the risk of ash die back. In contrast option one would result in the loss of five category B trees and 13 category C trees.

There is no scope to propose development on site, as such either option will result in an overall loss.

2. The Site

2.1. Grid Reference:

50.876655, -1.0359469

2.2. Address:

Waterlooville Telephone Exchange, London Road, Waterlooville, Havant, Hampshire, PO7 7AL.

2.3. Description:

This proposed site for development is already covered by two large buildings, two smaller rectangular buildings and a tarmac parking area. A concrete parking area in the east corner is currently being let out and will not be included in this development. The wider area consists of the borough of Waterloooville, with public parks and fields to the west.

2.4. Designations:

There are no RAMSAR, Special Areas of Conservation (SAC), Sites of Special Scientific Interest (SSSI), Special Protection Area (SPA), National Nature Reserves (NNR), Local Nature Reserves (LNR), or Conservation Areas within 1km of the site.

There are no Tree Preservation Orders (TPOs) on any of the trees to be impacted by the proposed development plans, however there is a mature Ash tree on the east corner of the property, at the entrance to the portion of the site being currently being leased.

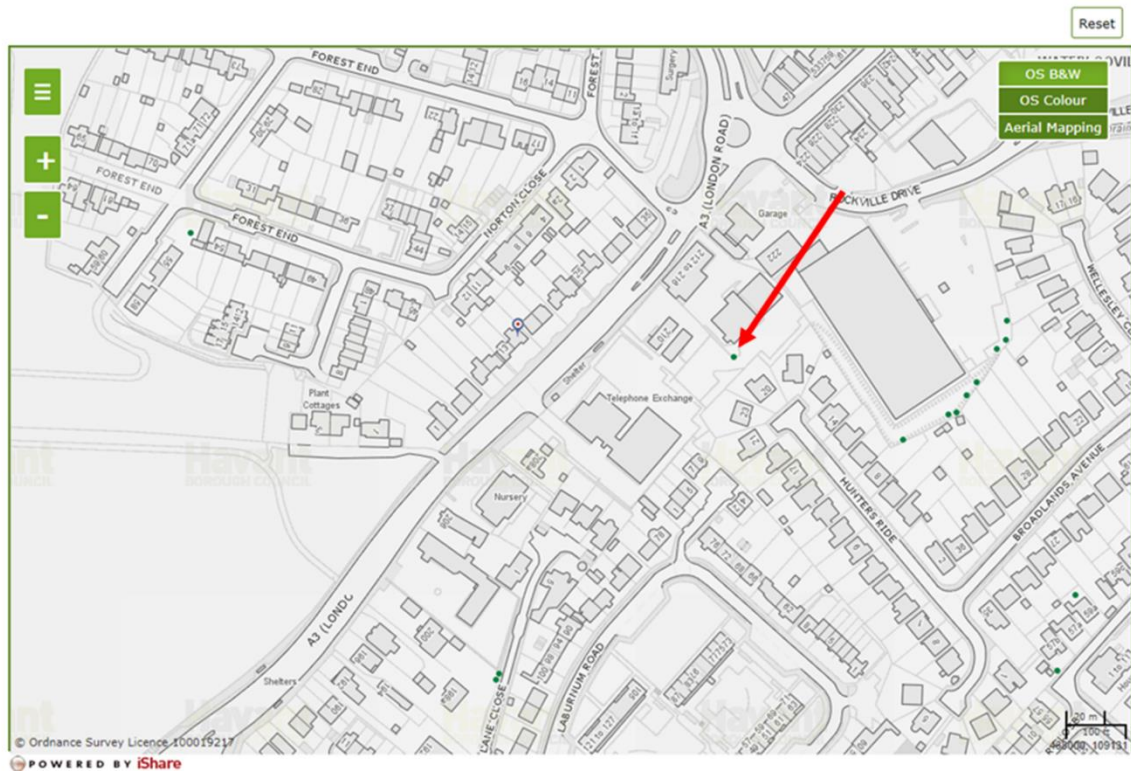


Figure 1: TPO on the edge of the ownership boundary though outside of the scope of works.

2.5. Site Plan



Figure 2: Ownership boundary (blue) and proposed development boundary (red)

3. Scope

The survey aims to assess the overall condition of all the trees on and adjacent to the development area, as shown in the site plan:

The trees' suitability for retention as categorised in accordance with BS 5837: 2012 'Trees in relation to design, demolition and construction – Recommendations; the constraints presented by the trees; outline considerations on development of site in relation to any retained trees; the Arboricultural Impacts Assessment; and recommendations for tree management where appropriate.

British Standard (BS) 5837: 2012 'Trees in relation to design, demolition and construction – Recommendations' requires that information on the constraints associated with retained trees be sent to the project designers. This information is detailed in the Tree Constraints Plan (figure 2). The information has been used to inform the layout design of the development proposals. The constraints, which are covered by BS 5837, are associated with issues relating to retained trees both above and below ground, and the necessary measures to ensure their safe retention.

4. Methodology

4.1. Survey Details:

The survey was undertaken by Megan Dalton on 06/12/2021. The weather was overcast with heavy showers.

4.2. Survey format/procedure:

The survey was a visual inspection to BS5837 guidelines, with the data recorded on site using PocketGIS software on a smartphone, and collated at the desk using PTMapper Pro.

4.3. Equipment Used:

A smartphone was used to capture data, GIS positions, images. Measurements were taken using a DBH tape. Binoculars were used to examine trees.

4.4. Climbing Inspection:

No climbing inspections were undertaken

4.5. Detailed survey methodology can be seen in appendix 8.4

5. Survey Data

5.1. Soil Type:

Soilscape 7: Freely draining slightly acid but base-rich soils¹

5.2. Constraints Summary:

Many of the trees onsite are young or semi-mature ash trees, due to the uncertainty with Ash die-back these are being classed as Category C, in their current state they do not pose a safety risk. Recommendations for Ash trees which may pose future safety risks are discussed in chapter 6.5 of this report. Future monitoring of any remaining Ash trees is strongly advised.

¹ <http://www.landis.org.uk/soilscapes/>

Nine Category B trees have been identified on site. Two Category B trees located near the North corner of the property - two mature Silver Birch trees, approximately 15m and 17m each. There is also a Category B Sycamore tree in the same location within the boundary line. The development plans can be adjusted to avoid the two Silver Birch trees.



Figure 3: Category B Silver Birch trees near the North corner.

The category B trees most likely to be impacted are two mature Common Beech trees approximately 12m tall, in the North-West hedge line near to the main entrance.



Figure 4: Two Category B beech trees (central two trees shown here) within the North-West hedge line.

The final Category B trees are three Whitebeam trees along the south-west boundary next to the existing entrance track.



Figure 5: Mature Ash tree on the right of the photo followed by three whitebeam trees in the South-west boundary.

In the eastern section of the site is a chain linked fence between the currently leased car park and the grassy area around two long sheds. This fence line is lined with self-seeded, semi-mature Ash trees and two mature Hawthorn trees, these are all classed as category C.



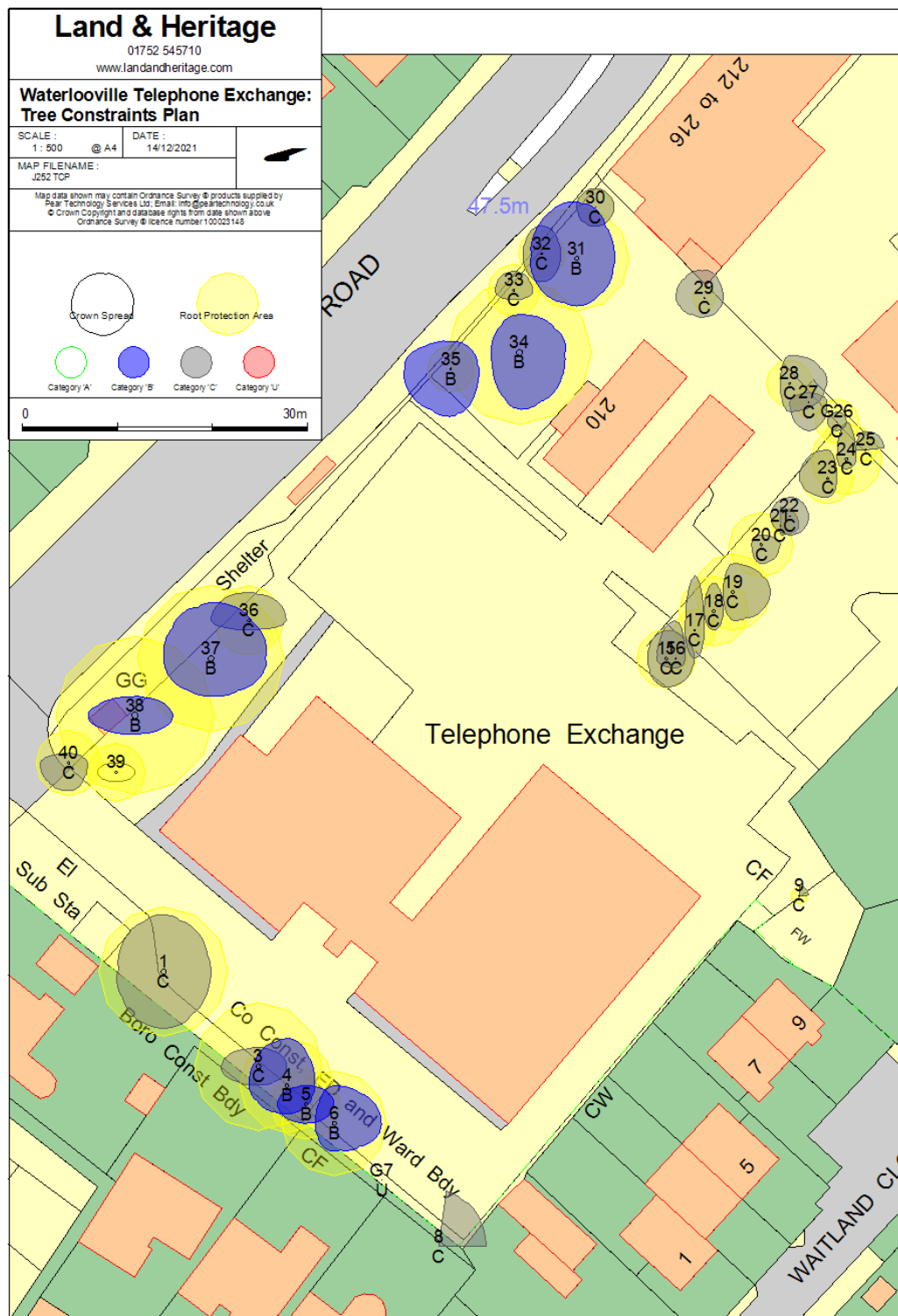
Figure 6: Ash and Hawthorn trees along a chain link fence separating the leased area from the rest of the property.

5.3. Tree Schedule:

Tree ID	Species	Maturity	Height (m)	Category
01	Ash	Mature	12	C
G02	Leylandii	Semi-mature	4	C
03	Hawthorn	Mature	8	C
04	Whitebeam	Mature	9	B
05	Whitebeam	Mature	9	B
06	Whitebeam	Mature	9	B
G07	Cotoneaster	Mature	3	U
08	Cherry	Mature	4	C
09	Ash	Young	8	C
15	Ash	Semi-Mature	7	C
16	Ash	Semi-Mature	9	C
17	Ash	Semi-Mature	9	C
18	Ash	Semi-Mature	9	C
19	Ash	Semi-Mature	10	C
20	Ash	Semi-Mature	10	C
21	Hawthorn	Mature	5	C
22	Hawthorn	Mature	6	C
23	Ash	Mature	12	C
24	Ash	Mature	12	C
25	Ash	Young	12	C
26	Ash	Sapling	6	C
27	Ash	Semi-Mature	10	C
28	Ash	Semi-Mature	10	C
29	Ash	Semi-Mature	10	C
30	Hawthorn	Mature	6	C
31	Silver Birch	Mature	15	B

32	Ash	Semi-Mature	8	C
33	Ash	Semi-Mature	8	C
34	Silver Birch	Mature	17	B
35	Sycamore	Mature	12	B
36	Ash	Mature	12	C
37	Beech	Mature	12	B
38	Beech	Mature	12	B
39	Rowan	Mature	8	B
40	Ash	Mature	8	C

5.4. Tree Constraints Plan

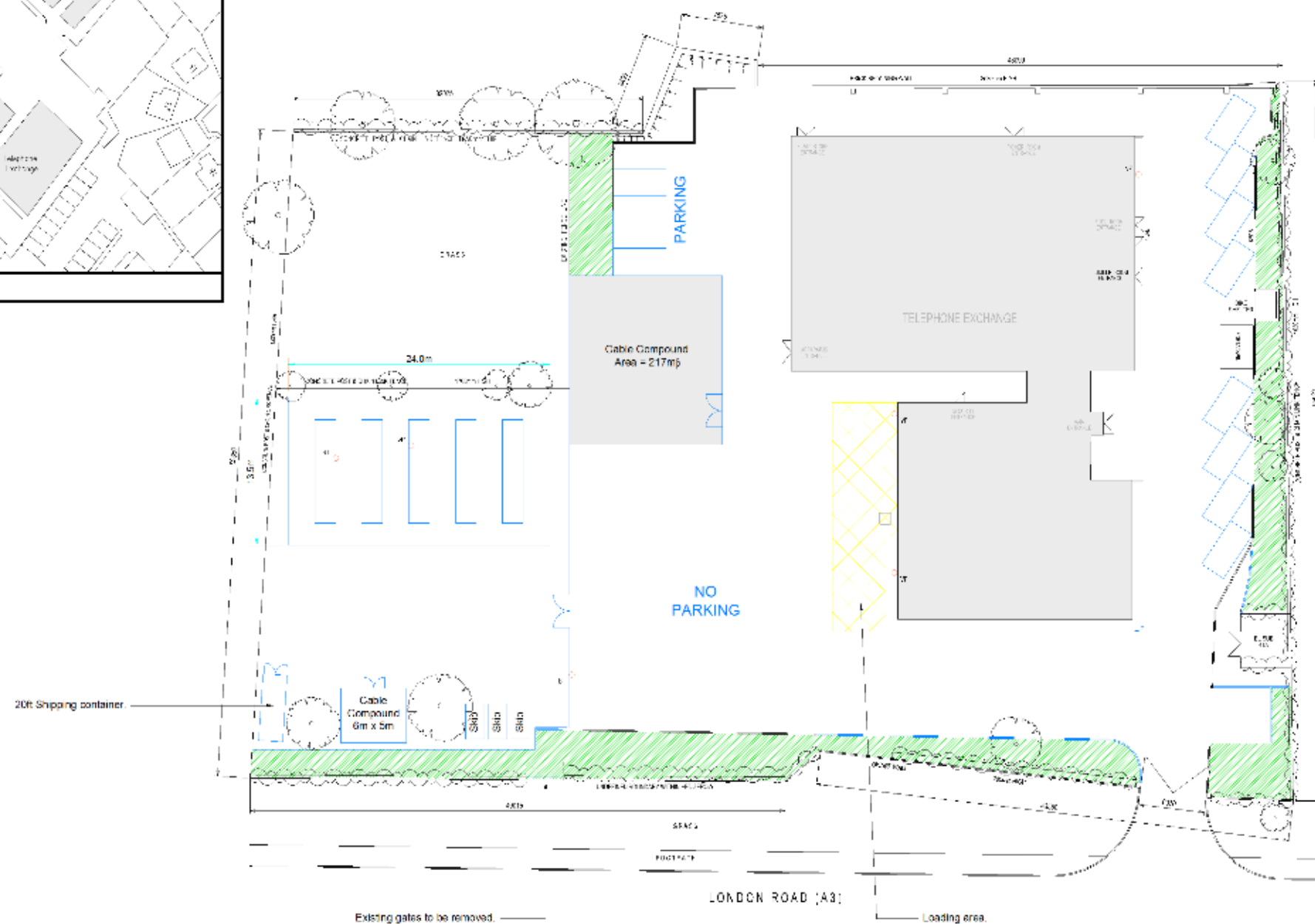
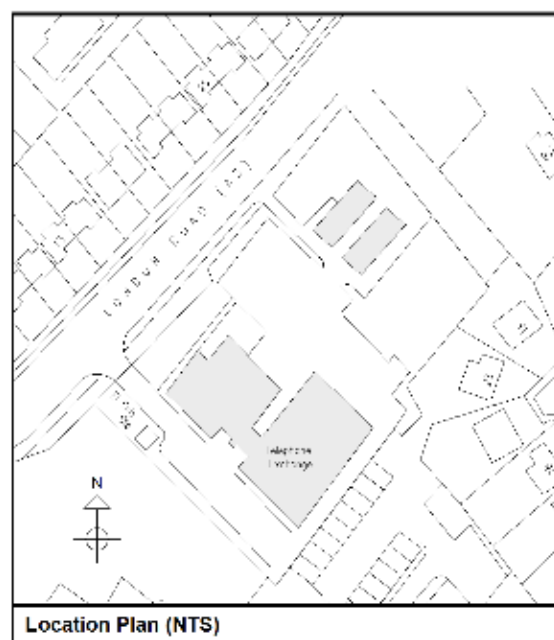




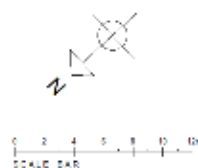
6. Project Design Development

The client has submitted two versions of the development, each with different levels of impacts. However, the full impacts of the development during the construction phase are not fully known, further details of the layout would be required.

Option Two.



Site Plan
As Proposed - Option 2



Notes

Revisions

**Lambert
Smith
Hampton**

Northampton Building Consultancy
Pyramus House
Roman Way
Grange Park
Northampton NN4 5PA
Telephone: 01604 664390
Fax: 01604 684387
www.sh.co.uk

Client

BT PLC

Project

Cosham TEC Vacation

Drawing

Waterlooville ATE
Site Plan
As Proposed - Option 2

Drawn

0166756-BC-0000 005

Date	Drawn	Check	Comments
A16/1/20	01/10/21	RS	DJC

6.2. Arboricultural Impact Assessment

We do not have the detailed plans for the construction phase of the development, for option one we are presuming that the northern corner would be covered in hard standing.

Option 1 would result in the loss of:

- eleven category C Ash trees
- one category C Hawthorn
- one category C Rowan
- two category B Silver Birch trees
- one category B Sycamore
- Two category B Beech trees

Option 2 would result in the loss of:

- nine category C Ash trees
- one category C Rowan
- Two category B Beech trees

The root protection zones for the two category B Beech trees, two category C Ash trees and a category C Rowan tree, will be unavoidably impacted by both proposed development plans. Due to the pavement on the opposite side of the hedge line this could severely impact the stability of the two beech trees, making it unlikely that they can practically be retained.

Running along a chain linked fence, separating the leased portion of the site, trees 18 to 25 on the Tree Constraints Plan may be in danger of sustaining damage to their root protection zones if hardstanding is going to be laid down in the Northern quarter for either design option.

6.3. Ecological Considerations

The trees surveyed and highlighted for removal were not considered to have a notable ecological value, or provide bat roosting opportunities. They may provide a location for nesting birds, and as such tree works must be undertaken outside of the nesting season (nesting season March to September) or following an inspection by a suitably qualified ecologist.

While onsite two invasive species, listed in Schedule 9 of the Wildlife and Countryside Act, were identified: part of the eastern boundary consists of a Cotoneaster hedge while a large patch of Winter Heliotrope was found in the Northern corner. The Cotoneaster is part of a shared boundary and thus removal may require the agreement of the neighbouring property. The Winter Heliotrope however should be controlled before works begins to avoid the illegal spread of a Schedule 9 species. A specific method statement should be sought for this work.



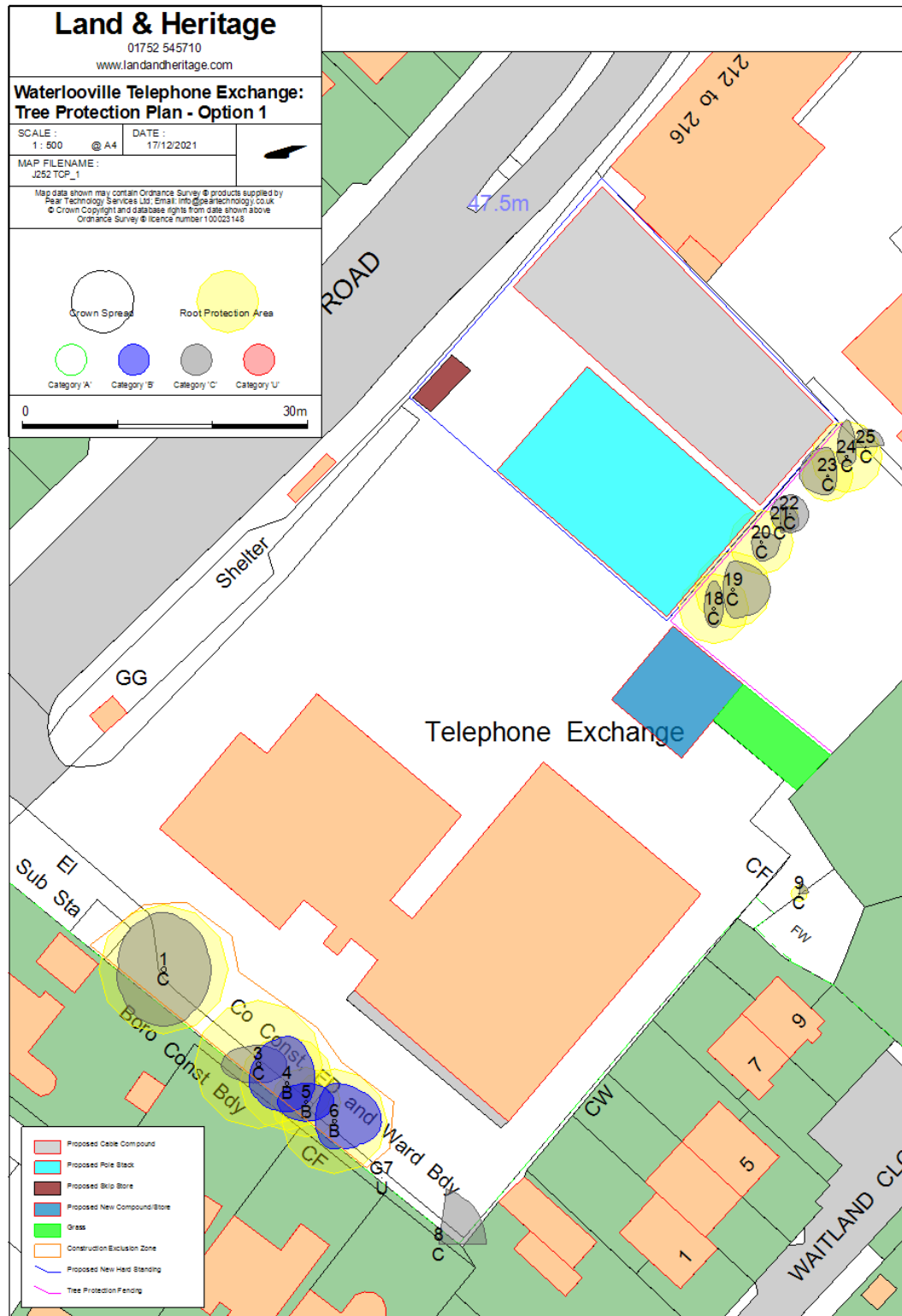
Figure 5: Cotoneaster in the South-West hedge line.



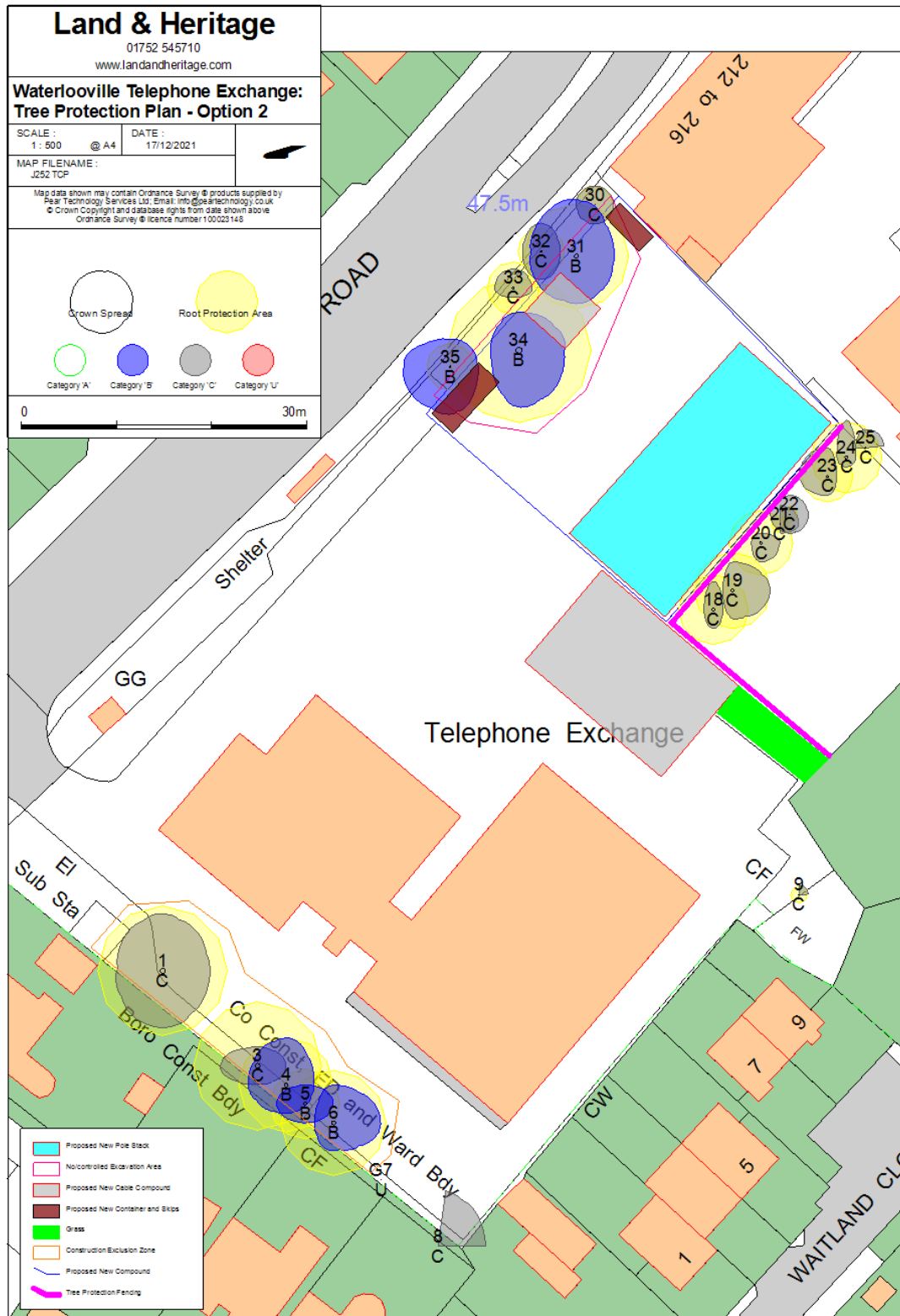
Figure 6: Winter Heliotrope in the Northern corner.

6.4. Draft Tree Protection Plans

Option One.



Option Two.



6.5. Recommendations

There is little to no scope for mitigation onsite. With the removal of the hedge line and trees near the entrance screening will need to be added as replacement – it has been proposed to erect a wooden palisade fence.

Of the two proposed development plans, option 2 may allow the trees in the Northern corner of the site to be retained: including the two mature Silver Birch trees, the category B Sycamore tree and two category C Ash trees. However detailed proposals must be drawn up to assess the impact upon the trees there. **To retain the trees, there must be no excavation within the RPA, and a permeable surface must be built up on top of the existing surface using gravel and modular geogrid above a permeable membrane. Post holes must be hand dug under the watching brief of an arboricultural consultant.**

The survey was undertaken in winter and thus it was uncertain whether the trees on site were affected by ash die back. However, Ash Die Back could kill off 80% of our common Ash trees, so while the Ash trees on site may not be showing signs of the disease currently, it is likely many of them will be in the future. It is recommended that if the trees would pose a safety threat to the new development in the event of becoming severely diseased, then these trees are coppiced during construction. The newly coppiced trees can then be managed as a hedge.

The draft tree protection plan shows the location of required tree protection fencing. This must be installed according to the guidelines in appendix 8.5, and prior to any demolition or construction work commencing. The purpose of the fencing is to prevent damaging access to the root protection areas of existing trees, and to protect the stems of the adjacent western trees.

Installing the fencing on the western boundary may be challenging given the



deep culvert, which means it may be required for a project arborist to consult on the appropriate protection measure prior to commencing work.

Further protection measures can be found in Appendix 8.5, in particular this should be referred to if the root protection areas of any trees to be retained will be crossed by machinery.



7. Limitations

The information reported is based only on the interpretation of data collected during the survey undertaken on site.

This report has been prepared by Land and Heritage Ltd. with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client.

This report does not seek to address the specific area of subsidence risk. Any discussion of soil characteristics are included only where they may affect tree or root growth. Queries regarding subsidence will require a separate specialist report to be commissioned.

This report has been prepared solely for the use of the client and their professional advisors and may not be relied upon by other parties without written consent from Land and Heritage Ltd. In addition, it must be understood that this report does not constitute legal advice.

Land and Heritage disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

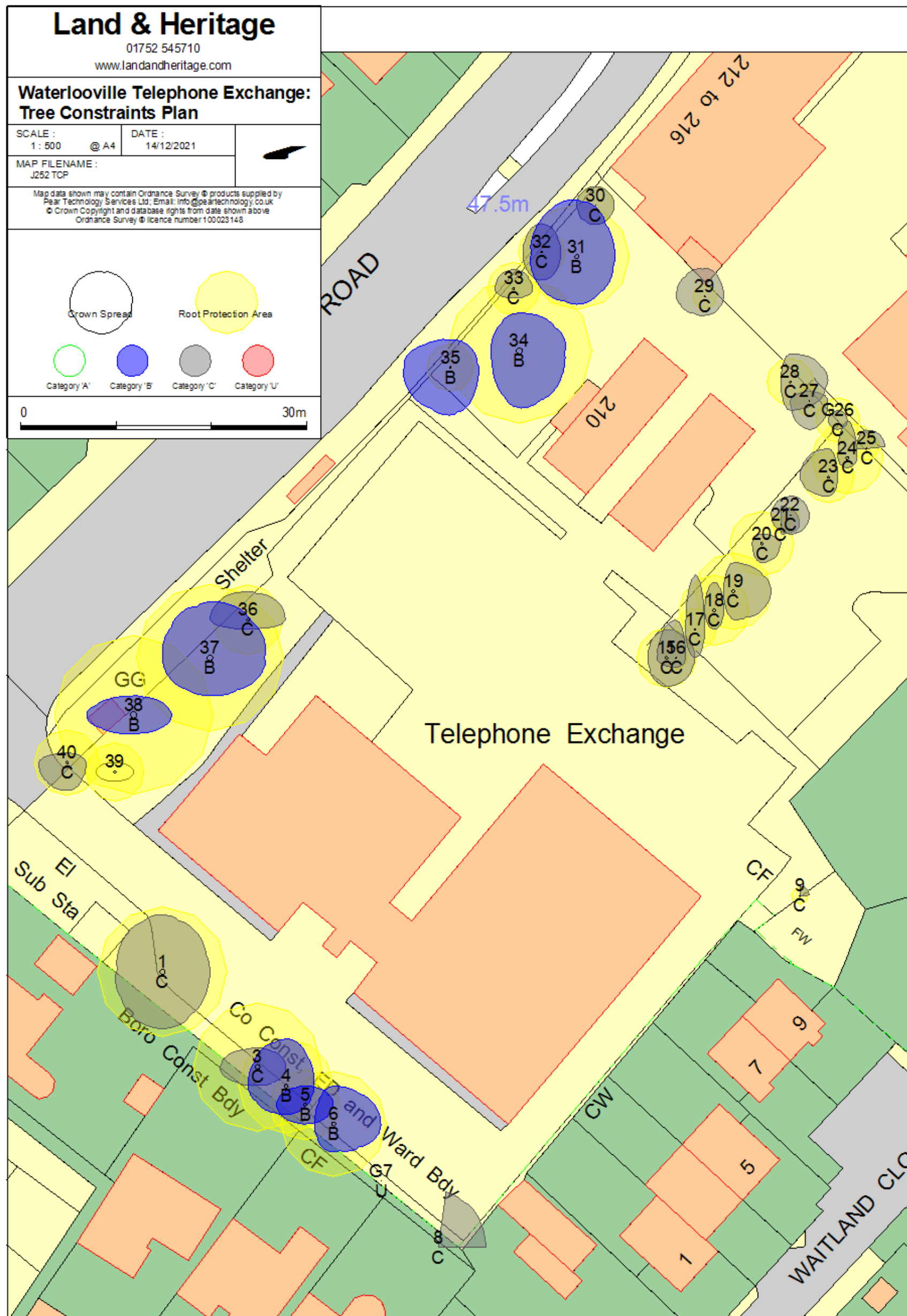
8. Appendices

8.1. Tree Schedule

Tree ID	Species	Maturity	Height (m)	Category
01	Ash	Mature	12	C
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G07	Cotoneaster	Mature	3	U
08	Cherry	Mature	4	C
09	Ash	Young	8	C
15	Ash	Semi-Mature	7	C
16	Ash	Semi-Mature	9	C
17	Ash	Semi-Mature	9	C
18	Ash	Semi-Mature	9	C
19	Ash	Semi-Mature	10	C
20	Ash	Semi-Mature	10	C
21	Hawthorn	Mature	5	C
22	Hawthorn	Mature	6	C
23	Ash	Mature	12	C
24	Ash	Mature	12	C
25	Ash	Young	12	C
26	Ash	Sapling	6	C
27	Ash	Semi-Mature	10	C
28	Ash	Semi-Mature	10	C
29	Ash	Semi-Mature	10	C
30	Hawthorn	Mature	6	C

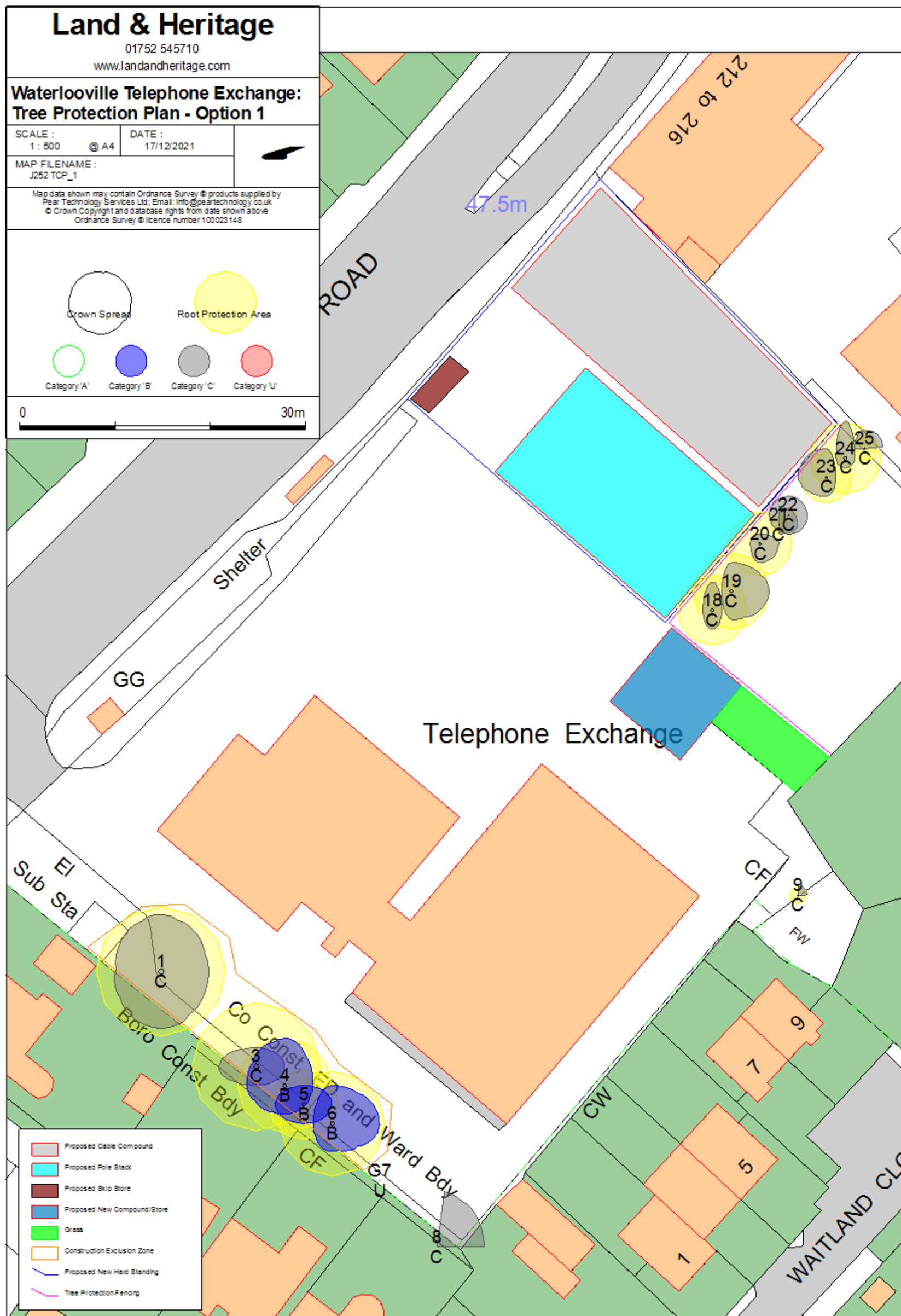
31	Silver Birch	Mature	15	B
32	Ash	Semi-Mature	8	C
33	Ash	Semi-Mature	8	C
34	Silver Birch	Mature	17	B
35	Sycamore	Mature	12	B
36	Ash	Mature	12	C
37	Beech	Mature	12	B
38	Beech	Mature	12	B
39	Rowan	Mature	8	B
40	Ash	Mature	8	C

8.2. Tree Constraints Plan

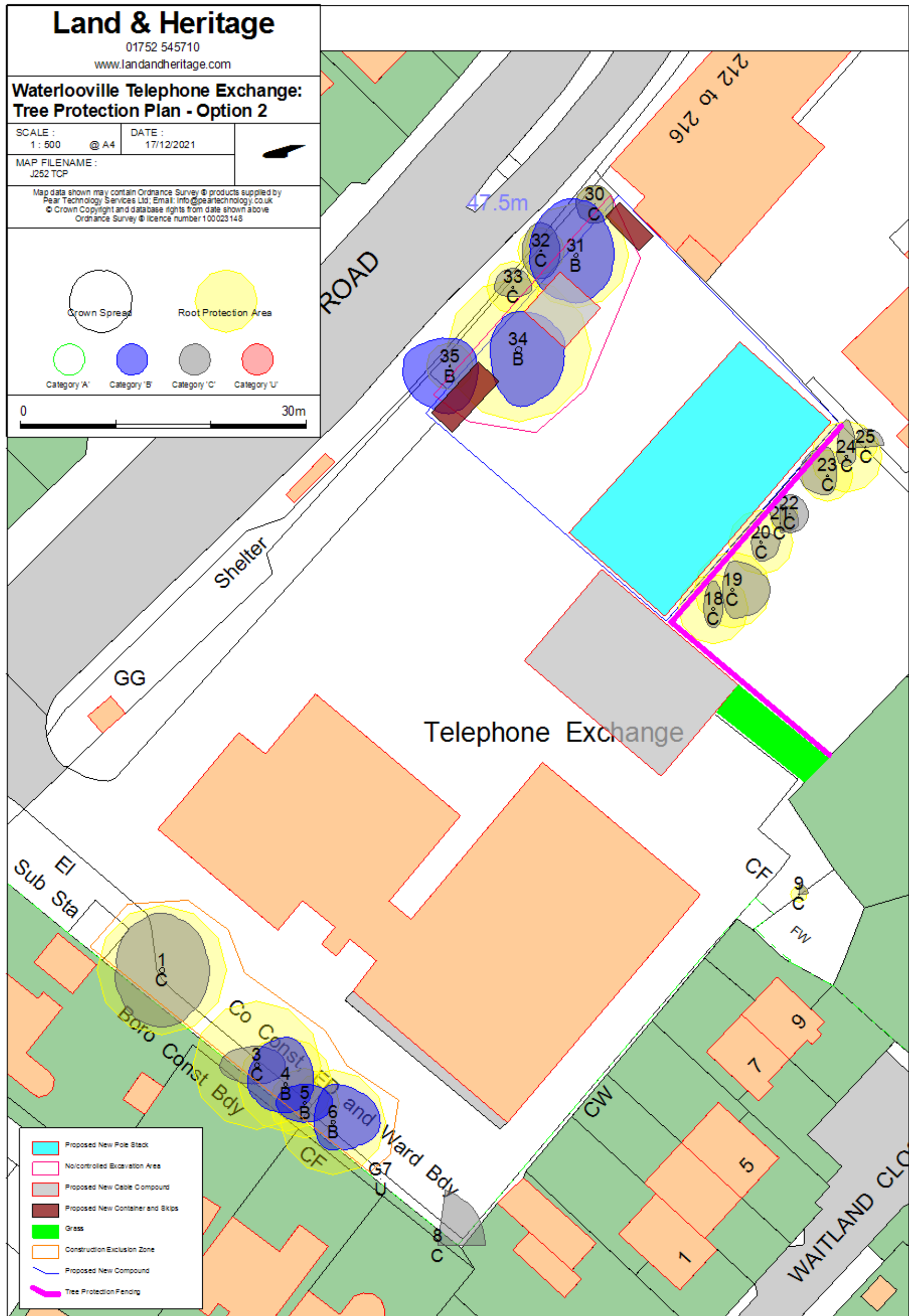


8.3. Tree Protection Plan

Option One



Option Two



8.4. Standard Survey Methodology

The following classification is employed:

Newly Planted: Saplings and young trees under 5 years of age

Young: Trees older than 5 years but still establishing (varies considerably depending upon species, but circa 20 to 30 years)

Semi-mature: Well established, but less than one third of the life expectancy of their species, normally making substantial extension growth.

Mature: Trees between one third and two thirds of the life expectancy of their species. More or less full height and large girth, increasing only slowly over time.

Over Mature: Trees beyond two thirds of the life expectancy of their species. No significant extension growth. Crown starting to break up and decrease in size.

Veteran Trees: Trees beyond the over mature stage but because of their size and age are significant features within the landscape and which can be rejuvenated and conserved by appropriate management.

The tree surveyor assessed the individual condition of all trees identified within the proposed development area. The assessment of condition is based on a visual and professional view.

Each tree was assessed by consideration of the following;

- a. the health, vigour and condition of the tree;
- b. any structural defects, and its life expectancy;
- c. the size and its form and the suitability of its position;
- d. The location as regards the position of other relevant features.

Categories for Tree Constraints Plan

For tree numbers please refer to the appended Tree Constraints Plan. Four categories of trees were recorded in the survey, which are defined as follows:

Category A (marked Light Green on the Tree Constraints Plans). Trees which are the most significant and which should be retained within the layout.

Category B (marked Mid Blue on the Tree Constraints Plans). These trees should be retained where possible within any development proposals.

Category C (marked in Grey on the Tree Constraints Plans). Trees which do not have sufficient Arboricultural merit to constrain development proposals (as long as proposals are included for landscape planting and mitigation).

Category U (marked in Dark Red on Tree Constraints Plans). Trees which will not remain safe features beyond the short term and should be removed as part of any development proposals.

BS5837 requires that trees are further identified according to tree quality with particular merits defined as:

- Arboricultural qualities – sub division 1
- Trees of landscape qualities – sub division 2
- Trees with ecological, historical or cultural value – sub division 3

The design layout should allow for the retention of A and B category trees where possible. C category should only be retained in locations where they will not over constrain development proposals or present additional amenity issues. Mitigation will be required for the loss of any trees particularly groups which have been classified as Category A or B.

During the site survey data was gathered using the PocketGIS arboricultural survey software, and PT Mapper Pro, which has been used to generate the attached observations and recommendations.

Tree Survey Schedule

As part of the assessment a tree survey schedule has been produced. A key of terms and definitions applied to the schedule are detailed in Table 1 below.

Species	Latin Genus and Species + common name
Height	Measured/estimated in metres
Stem diameter	Diameter measured at 1.5 m from ground level with tape in mm
Spread area (N,S,E,W)	Crown spread measured in metres at the points on the compass
Height of Crown Clearance	In metres to inform on ground clearance, shading and crown to stem ratio.
Age Class	Newly Planted, Young, Semi-mature, Mature, Veteran, Over Mature, Dead
Physiological Condition	Good, Fair, Poor Dead
Structural Condition	Detail of the presence of decay, physical defects or danger of collapse
Category Grading	A-Notable, B-Good, C-Moderate - Poor, U-Dead or dangerous

8.5. Tree Protection Guidelines

General Tree Protection Measures

Root Protection Areas have been calculated for each individual tree and each group. These are shown on the Tree Constraints Plan in Appendix B. These must be used in setting a Construction Exclusion Zone (CEZ) on the draft Tree Protection Plan (TPP). The TPP will be produced once the Scheme design has been finalised and it is possible to accurately locate the position for tree protection fencing in relation to the proposed building and access road.

BS 5837 specifies that a Tree Protection Plan (TPP) should be prepared to show the impact of the proposed development on existing trees at the site.

Information from the TPP should be incorporated into subsequent drawings and method statements to ensure that all interested parties are fully aware of the areas in which access and works may and may not take place. There may, for example, be impacts resulting from the provision of underground services or replacing existing security fences. These currently unforeseen impacts should be assessed and incorporated into the TPP before work commences.

Care must be taken to ensure that existing ground levels around trees are maintained as mature trees are sensitive to any changes in water level or factors which alter the aeration of the root system. Pile foundations have been advocated where construction takes place close to retained trees and to maintain existing ground levels.



As a general guide, the full root protection area (RPA) should be observed, and BS 5837 adhered to.

BS 5837 states that all retained trees or groups of trees should be protected by Root Protection Areas (RPAs) marked by the erection of a protective barrier. The Tree Protection Plan and the Tree Survey Schedule shows the RPA for each group of trees.

BS 5837 specifies the minimum RPA in square metres rather than a radial distance; the final barrier position will be shown on a Tree Protection Plan which will be produced once the final development layout has been finalised and approved.

BS 5837 gives the opportunity for the professional arborist to make small changes to the shape (but not the area) of the RPA to fit with local conditions. These alterations have been incorporated into the final Tree Protection Plan to ensure that retained trees are adequately protected.

The Tree Protection Plan will also need to detail routes for services and site facilities.

Retained trees will require ground protection around their Root Protection Area (RPA) using a combination of barriers and ground protection.

All barriers should conform to the standard specified in BS 5837:2012 and are shown in Figure 7.

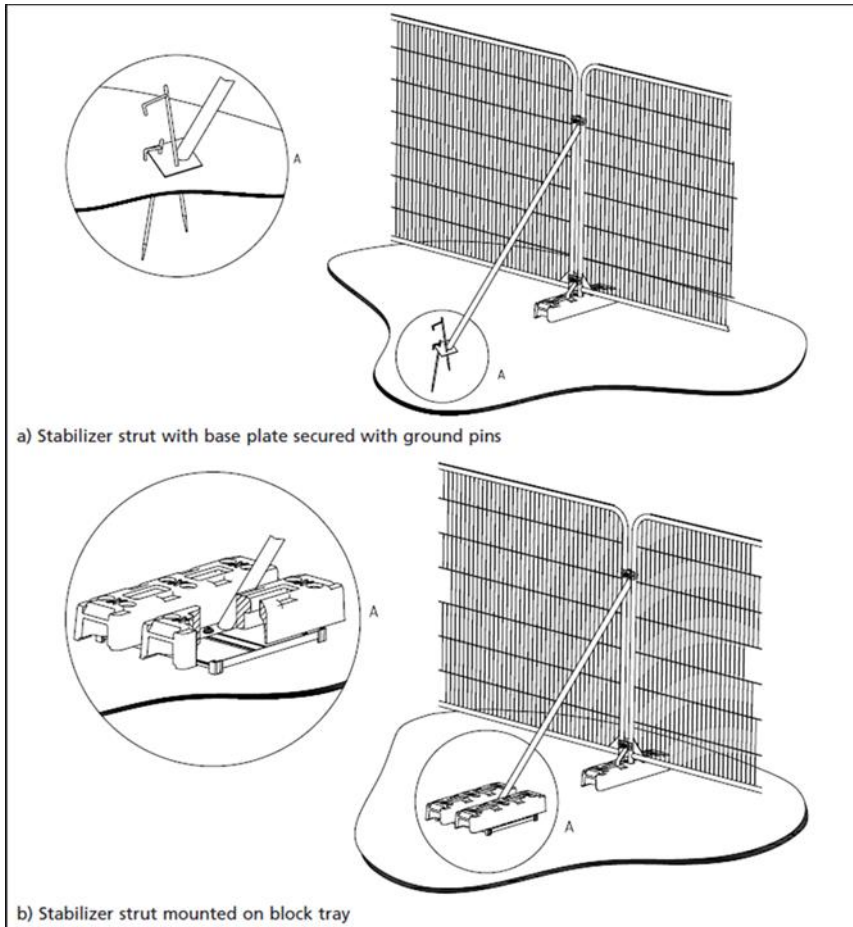


Figure 7: Protective Barrier

The protective barriers should comprise a scaffold frame from which “Heras” type fencing (or similar) should be firmly attached. The barrier must be strong enough to protect the trees from the expected level of construction activity and should be constructed so that it cannot be easily moved.

Once the exclusion zone has been protected by barriers and /or ground protection, construction work can commence. All weather notices must be erected on the barriers stating “Construction Exclusion Zone KEEP OUT” The Construction Exclusion Zone (CEZ) at this site is likely to be complex due to its



topography. It is recommended that the protective fencing is erected under the supervision of the project arborist to ensure that adequate protection is provided.

The location of protective barriers is shown on the draft TPP. Where there is steep topography barriers will need additional stakes to ensure they are secure. All fences must be carefully checked by the Project Arborist.

Compaction Protection Mats

Where RPAs must be crossed to provide access, or temporarily entered to gain access angles, suitable ground protection matting must be installed to protect the root area. The specification must be drawn up to suit each site and application and approved by the project arborist or tree officer. The design needs to consider type of compaction, paying particular attention to weight. An example of a suitable matting that provides temporary compaction protection rated to 45 tons follows:



Typical applications:

- Depending on the underlying ground conditions, they will support a 45 tonne lorry
- Made from recycled plastic material and is therefore recyclable again.
- Superb for covering and protecting tree roots, potentially sensitive archaeology and subterranean assets.
- A 'clean feet' solution for parties, events and sensitive job sites.
- Non metallic and resistant to electrical conduction. Useful where electricity is involved
- Tough enough to be used to stockpile spoil to be reloaded by an excavator or grab lorry
- Suitable for vehicle and pedestrian access.

- Can be bolted together with a clamp plate system or stapled to ground to improve security and load performance.
- Suitable for traversing with steel tracked plant up to a certain weight and rubber tracked and wheeled vehicles.
- NOT suitable for bridging open excavations or voids.
- Mass: 28 kgs each
- Mechanical handling: Forklift/HIAB for multiples. Personnel can move and position unaided if required

Other protection measures

- Material which will contaminate the soil, such as concrete mixings, diesel and vehicle washings, should not be discharged on site.
- Notice boards, telephone cables or other services should not be attached to any part of any tree.
- Fires should not be lit within 5 metres of the CEZ This will restrict any site burning to a small area to the front and side of the Manor House.
- No materials or rubbish should be left within the CEZ. The CEZ will be inspected on a regular basis by the project arborist.