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# PRE-DEVELOPMENT TREE SURVEY BS5837:2012

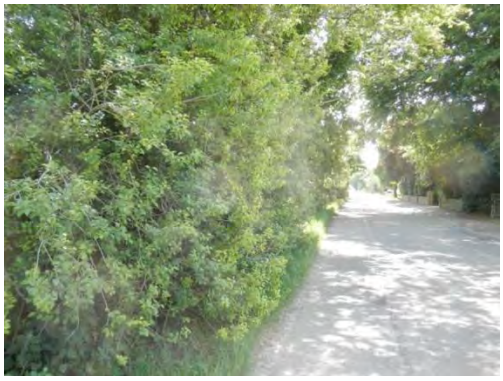
Land at Lime Walk
Long Sutton
Lincolnshire
PE12 9HG

**Consultant:**
Dr. Stefan Bodnar BSc (Hons) PhD MIEEM

Ecological Consultant

**Report Ref:** 225773ARB

**Report Date: 27th June 2022**



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# 1.0. INTRODUCTION AND SITE DESCRIPTION

**Dr. Stefan Bodnar undertook an arboricultural survey (BS5837: 2012) on trees within a site at Lime Walk, Long Sutton, Lincolnshire, PE12 9HG.**

BS 5837:2012 includes an assessment of all trees within the development footprint in addition to those near to the site boundary. The aerial photograph relating to the site is included as Figure 1 below. The trees included within the survey and their relationship to the development footprint are identified on the drawing in Appendix 1. Photographs of the trees are included in Appendix 2.

It is understood that none of the trees are protected via Tree Preservation Orders, however, it is recommended that the client fully satisfy themselves that this is the case during contact with the Local Planning Authority.

There are a limited range of tree species on, and immediately adjacent to, the Site, with no dominant species. Sycamore *Acer pseudoplatanus*, silver birch *Betula pendula*, Norway maple *Acer platanoides*, blackthorn *Prunus spinosa*, small-leaved lime *Tilia cordata*, hawthorn *Crataegus monogyna*, goat willow *Salix caprea*, alder *Alnus glutinosa* and Leyland cypress *x Cupressocyparis leylandii* are present in numbers. Ash *Fraxinus excelsior* and horse chestnut *Aesculus hippocastanum* are represented as single specimens. The distribution of the trees and tree groups across the site is limited to being formerly planted along the eastern, south-eastern and western boundaries of the site. Two individual trees are also present off-site, immediately adjacent to the northern boundary, with canopies that extend into the site, and a third tree stands clear of the south-western boundary. In addition there are 3 mature Lombardy Poplar trees just north-east of the residential property, situated along Lime Walk.

**Note on the plans supplied.**
**The topographical surveys do not recognize off-site trees with RPAs within the site. The location and tree canopies/RPZs of the trees indicated are to the best of the surveyors knowledge correct, but all measurements of RPZs and tree canopies should be taken directly from the figures in Section 3. No tree location or protection plans should be directly scaled from this.**

## Figure 1a) Satellite image of site




*Map data 2022© Google*

## Figure 1b) Location Plan of the site

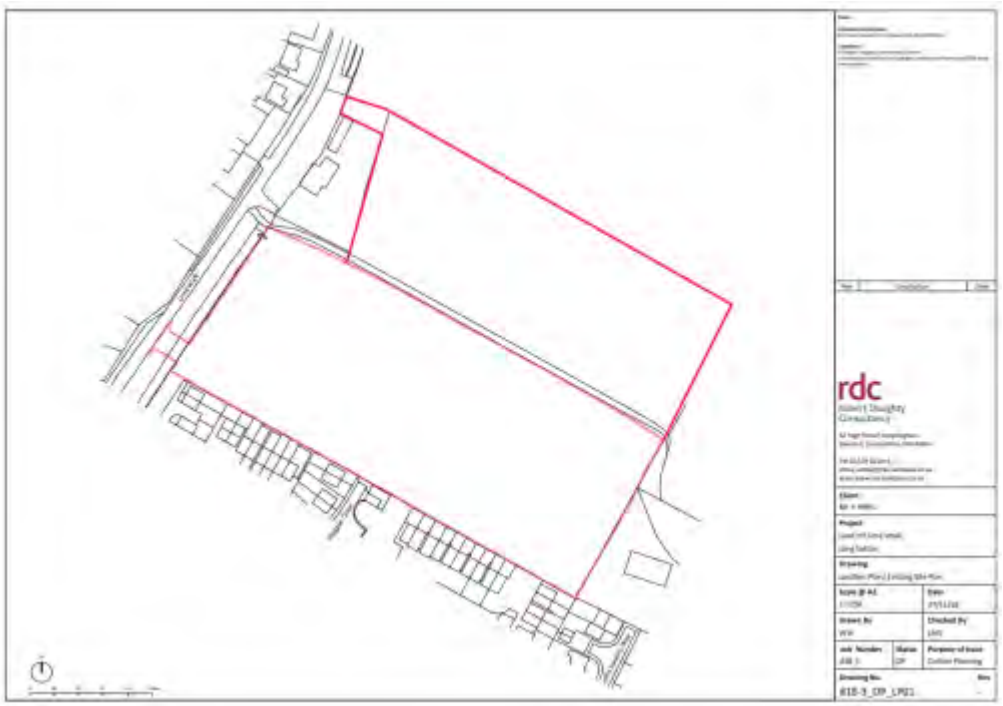


**Figure 1c) Topographical Plan of the site**

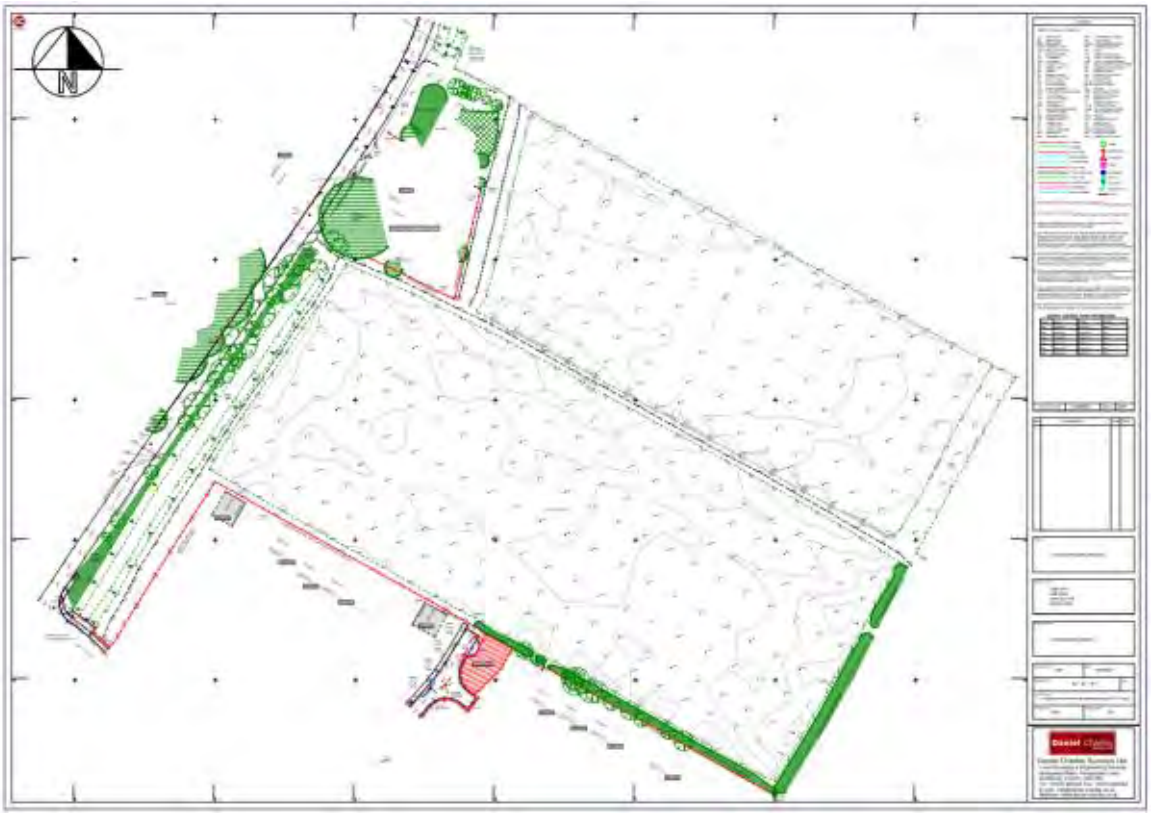


**Figure 1d) Development Plan**



## 2.0. ARBORICULTURAL SURVEY METHODOLOGY

### 2.1 Condition Status

To determine the status of the trees within the site a full arboricultural survey has been undertaken, assessing species and status of all trees present within the footprint of development. The survey has been carried out in accordance with BS 5837 (2012).

The surveyor has extensive experience of arboriculture, through undertaking BS5837 surveys on many sites between 2005 and 2021. Previous to this, he has undertaken Lantra approved courses for arborists, and is competent to the level of a tree officer operating within a Local Authority, being familiar and having used the systems undertaken by tree officers for undertaking safety and condition surveys for Birmingham City Council. Dr. Bodnar possesses numerous ecological qualifications including a full member of CIEEM and a PhD (Community Forestry, 1998). Recent Certificated BS5837 training (May 2015) from Tree Life Arboricultural Consultancy Ltd.

Individual trees above 75mm (diameter at 1.5m above ground level) have had their position confirmed on the survey drawing. The trees were visually assessed and a schedule prepared listing tree number, species, trunk diameter at 1m above ground level, tree height, crown spread (radius), age, class and estimated remaining years. Any specific observation or recommendations with regard to management were also noted.

A plan drawing indicating the location of each tree assessed is included in Appendix 1.

The condition of each tree was assessed according to the following categories:

**Category A**

Those trees of high quality and value. Significant trees that are structurally sound and can be retained in the long term (i.e., >40 years) or trees that can be retained in the long term following remedial tree surgery. Colour code on the plan: pale green.

**Category B**

Those trees of moderate quality and value. Trees that may live 15-40 years. Trees that may live for more than 40 years, but whose removal may be required in that time frame to allow development of retained trees. Trees that are defective but could be retained in the medium term by remedial tree surgery. Colour code on the plan: mid blue.

**Category C**

Those trees of low quality and value. Trees that can only be retained in the short term (.e, 5-15 years) and that have little landscape impact due to poor form or condition. Trees having a stem diameter of <150mm at 1.5m above ground level that could be replaced. Colour code on the plan: grey.

**Category U**

Unsuitable for retention. Trees that are dead, dying or diseased that will become dangerous in the near future (within years). Colour code on the plan: red.

Categories A, B and C have further sub-categories with regard to the reasons for tree retention:

1: Mainly arboricultural values

2: Mainly landscape values

3: Mainly cultural values, including conservation.

## 2.2 Root Protection Area (RPA)

In order to avoid damage to the roots or rooting environment of retained trees, the RPA has been calculated for each of the category A, B and C trees. This is a minimum area of $m^2$, which should be left undisturbed around each retained tree. These figures are calculated using the formula below taken from BS 5837 (2012):

**Single stem tree**

$$\text{RPA } m^2 = \{ \frac{\text{Stem diameter (mm) @ 1.5 x 12}}{1000} \}^2 \times 3.142$$

**Trees with more than one stem below 1.5m above ground level**

$$\text{RPA } m^2 = \{ \frac{\text{Basal diameter (mm) @ 10}}{100} \}^2 \times 3.142$$

During construction works the root protection areas – 'Construction Exclusion Zones' are to be protected by barriers and ground protection in accordance with Section 9.0 of BS5837:2012 and as specified and indicated on an approved Tree Protection Plan.

Where construction operations (demolition / hard surfacing) are proposed/ permitted within the Root Protection Area, precautions should be taken to maintain the condition and health of the root system in accordance with BS5837:2012.

Construction of hard surfacing within the root protection area should be designed to avoid root loss during excavation. The structure of the hard surface should be designed to avoid localized compaction, including the use of three dimensional cellular confinement systems as an integral component of the sub-base.

The hard surfacing in these areas should be a permeable and gas-porous nature such as washed gravel or paving slabs and block pavers (with infiltration spaces). Edge supports such as kerb and edgings on foundations and haunchings are not to be used within the RPA. Consideration should be given to the use of pegged timber edging or propriety or steelpaver or edge restraints.

## 3.0. RESULTS

There are 14 trees, and 5 groups of trees on site. The hedges and trees on site range from U category to B category (relatively few). In general, A and B category trees or hedges should be retained and carefully protected during any development work with appropriate root protection fencing. As many C category trees as possible should be protected and retained, although suitable replacement planting within the scheme area could adequately mitigate for losses of category C trees. .

A map detailing the location of trees and their BS5837:2012 determined category can be seen in Appendix 1, all other trees on site are noted as being below 150mm stem diameter and therefore, outside the requirements of BS5837:2012. Trees below 150mm stem diameter but above 75 mm stem diameter are included in the topographical survey of the site.

Scientific names for species identified:

**Trees & Shrubs**

| **Common Name** | ***Scientific Name*** |
|---|---|
| Sycamore | *Acer pseudoplatanus* |
| Silver birch | *Betula pendula* |
| Norway maple | *Acer platanoides* |
| Blackthorn | *Prunus spinosa* |
| Small-leaved lime | *Tilia cordata* |
| Hawthorn | *Crataegus monogyna* |
| Goat willow | *Salix caprea* |
| Alder | *Alnus glutinosa* |
| Leyland cypress | *x Cupressocyparis leylandii* |
| Ash | *Fraxinus excelsior* |
| Horse chestnut | *Aesculus hippocastanum* |

## Table 1: Tree Survey Results

| Tree Reference | | | Measurements | | | | Crown (m) | | | | | Tree Condition | | | | | | | | Management Works |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tree Number | Common Name | Latin Name | Maturity | Height (m) | Stems | Stem Diameter(mm) | Average Height | N | E | S | W | Roots | Stem | Crown | Comments | Structural | Life Expectancy (years) | Category | RPA (m) | |
| T1 | Blackthorn | *Prunus spinosa* | M | 7 | 1 | 350 | 0 | 2 | 3 | 4 | 3 | No obvious visual damage.Roots on bank | Single-stemmed. Vertical | Unbalanced. Sparse | Large failed limb to south | P | <10 | U | 4.20 | Suggest removal for arboricultural reasons |
| T2 | Sycamore | *Acer pseudoplatanus* | M | 11 | 1 | 460 | 2 | 3 | 2 | 3 | 2 | No obvious visual damage.Roots on bank | Single stemmed. Vertical. Ivy covered | Vertical. Suppressed | Unable to assess stem due to ivy Low BRP | F | <20 | C | 5.40 | No works |
| T3 | Norway maple | *Acer platanoides* | M | 11 | 1 | 480 | 2 | 7 | 5 | 7 | 5 | No obvious visual damage.Roots on bank | Single-stemmed. Vertical. Ivy covered | Spreading | Unable to assess stem due to ivy Low BRP | F | >20 | B | 5.70 | No works |
| T5 | Small leaved lime | *Tilia cordata* | M | 10 | 1 | 500 | 1 | 4 | 6 | 6 | 5 | No obvious visual damage.Roots on bank | Single-stemmed. Vertical | Unbalanced | Included unions and fused stems to west | F | >20 | C | 6.00 | |
| T6 | Silver birch | *Betula pendula* | SM | 8 | 1 | 200 | 1 | 3 | 3 | 2 | 2 | No obvious visual damage.Roots on bank | Single-stemmed. Vertical | Dead | | P | 0 | U | N/A | Suggest removal for arboricultural reasons |
| T7 | Sycamore | *Acer pseudoplatanus* | M | 11 | 1 | 475 | 1 | 7 | 7 | 6 | 7 | No obvious visual damage.Roots on bank | Single-stemmed. Vertical. Ivy covered | Deadwood to north | Unable to assess stem due to ivy | F | >20 | B | 5.70 | Remove deadwood |
| T8 | Common lime | *Tilia cordata* | M | 10 | 1 | 360 | 2 | 2 | 2 | 2 | 2 | No obvious visual damage.Roots on bank | Single-stemmed. Vertical. Ivy covered | Sparse. Suppressed. Dieback | Unable to assess stem due to ivy | F | <20 | U | 4.20 | Suggest removal for arboricultural reasons |

| Tree Reference | | | Measurements | | | | Crown (m) | | | | | Tree Condition | | | | | | | | Management Works |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tree Number | Common Name | Latin Name | Maturity | Height (m) | Stems | Stem Diameter(mm) | Average Height | N | E | S | W | Roots | Stem | Crown | Comments | Structural | Life Expectancy (years) | Category | RPA (m) | |
| T9 | Common lime | *Tilia cordata* | M | 8 | 1 | 175 | 1 | 2 | 0 | 2 | 2 | No obvious visual damage.Roots on bank | Single-stemmed. Vertical. Ivy covered | Sparse. Suppressed Failed | Main stem failed at bifurcation at 1 m | P | <10 | U | 2.1 | Suggest removal for arboricultural reasons |
| T10 | Common lime | *Tilia cordata* | M | 12 | 1 | 610 | 1 | 6 | 6 | 6 | 7 | No obvious visual damage.Roots on bank | Single-stemmed. Vertical | Balanced. Spreading | | G | >20 | B | 7.20 | No works |
| T11 | Norway maple | *Acer platanoides* 'Goldsworth Purple' | SM | 10 | 1 | 400 | 1 | 5 | 5 | 5 | 5 | No obvious visual damage.Roots on bank | Single-stemmed. Vertical | Balanced | Lacks vigour | G | 10-15 | C | 4.8 | No works |
| T12 | Silver birch | *Betula pendula* | SM | 9 | 1 | 360 | 1 | 3 | 3 | 2 | 3 | No obvious visual damage. Roots on bank | Single-stemmed. Vertical | Balanced. Dieback tonorth | | F | <20 | C | 4.20 | Remove deadwood |
| TG13 | Hawthorn Silver birch Sycamore Goat willow | *Crataegus monogyna Betula pendula Acer pseudoplatanus Salix caprea* | SM | 6 Av | 1 | 260 Av | 0 | 2 | 2 | 2 | 2 | No obvious visual damage | Single-stems. Vertical | Mutuallyshared canopy | Group of treesplanted as screening | G | >20 | B | 3.00 | No works |
| TG14 | Leyland cypress | *x Cupressocyparis leylandii* | M | 17 Av | 1 | 500 Av | 0 | 5 | 2 | 2 | 5 | No obvious visual damage | Single-stems. Vertical | Mutuallyshared canopy | Group of trees planted as windbreak. Signs of branch failure | F | <20 | B | 6.00 | No works |

| Tree Reference | | | Measurements | | | | Crown (m) | | | | | Tree Condition | | | | | | | | Management Works |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tree Number | Common Name | Latin Name | Maturity | Height (m) | Stems | Stem Diameter(mm) | Average Height | N | E | S | W | Roots | Stem | Crown | Comments | Structural | Life Expectancy (years) | Category | RPA (m) | |
| | | | | | | | | | | | | | | | to west | | | | | |
| TG15 | Hawthorn Silver birchAlder | *Crataegus monogyna Betula pendulaAlnus glutinosa* | Y | 11 Av | 1 | 160 Av | 1 | 3 | 3 | 4 | 3 | No obvious visual damage | Single-stems. Vertical | Balanced | Group of treesplanted as screening | G | >20 | B | 1.80 | No works |
| T16 | Leyland cypress | *x Cupressocyparis leylandii* | M | 16 | 3 | 800 | 3 | 5 | 4 | 5 | 5 | Unable to assess du toaccess | Single-stemmed. Vertical | Spreading | Private tree with canopy that extends over Site boundary | G | >20 | B | 9.6 | No works |
| T17 | Horse chestnut | *Aesculus hippocastanum* | M | 15 | 1 | 1110 | 2 | 10 | 10 | 9 | 10 | No obvious visual damage | Single-stemmed. Vertical. Low pollard to 3m, crown lifted to 7m | Spreading, recently dead-wooded | Private tree within 20 m of northern boundary | G | >20 | B | 13.20 | No works |
| T18 | Apple | *Malus sylvestris* | M | 4 | 1 | 400 | 4 | 2 | 2 | 2 | 2 | Unable to assess du toaccess | Single-stemmed. Vertical | Spreading | Private tree 3m to boundary | F | 10-15 | C1 | 4.8 | No works |

| Tree Reference | | | Measurements | | | | Crown (m) | | | | | Tree Condition | | | | | | | | Management Works |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tree Number | Common Name | Latin Name | Maturity | Height (m) | Stems | Stem Diameter(mm) | Average Height | N | E | S | W | Roots | Stem | Crown | Comments | Structural | Life Expectancy (years) | Category | RPA (m) | |
| TG19 | Cherry, elder, hawthorn, poplar | *Prunus sp., Sambucus nigra, Crataegus monogyna, Populus sp.* | Y | 6 | 3 | 200 | 3 | 3 | 3 | 3 | 3 | No obvious visual damage | | | | F | 10-15 | C1 | 2.4 | No works |
| TG20 (3 trees) | Lombardy poplar | *Populus nigra var.* | M | 22 | 3 | 750 | 3 | 3 | 3 | 3 | 3 | No obvious visual damage | Single-stems. Vertical | Balanced | Group of treesplanted as screening | F | 10-15 | C1 | 9.00 | No works |

## Table 2 – Key to Tree Schedule

| Measurements | Age – Class | Overall Condition | BS 5837 2005 : Cascade Chart for Quality Assessment/Retention Category | Symbols: |
|---|---|---|---|---|
| MS – Multi-stemmed | Y - Young | G – Good | A – High | **<** = less than |
| Ht - Height in metres | SM – Semi-Mature | F – Fair | B – Moderate | **~** = approximately |
| Stem – Stem Diameter at 1.5m in mm | EM – Early-mature | P – Poor | C – Low | **>** = greater than |
| Crown – Crown spread in metres | M – Mature | D – Dead | R – Trees for Removal | |
| TD - Trunk division (height in metres) | V - Veteran<br>**Est Yrs –** estimate of years remaining (>40 years; 20 –40 years; <20 years) | | **Sub-categories:**<br>**1** = mainly arboricultural values<br>**2** = mainly landscape values<br>**3** = mainly cultural values. | |
| RPA = Root Protection Area (equivalent to a circle with a radius 12 x the stem diameter for single stem trees and 10 x the basal diameter for trees with more than one stem arising below 1.5m above ground level). | | | | |

# 4.0. DISCUSSION

## 4.1 Tree Protection

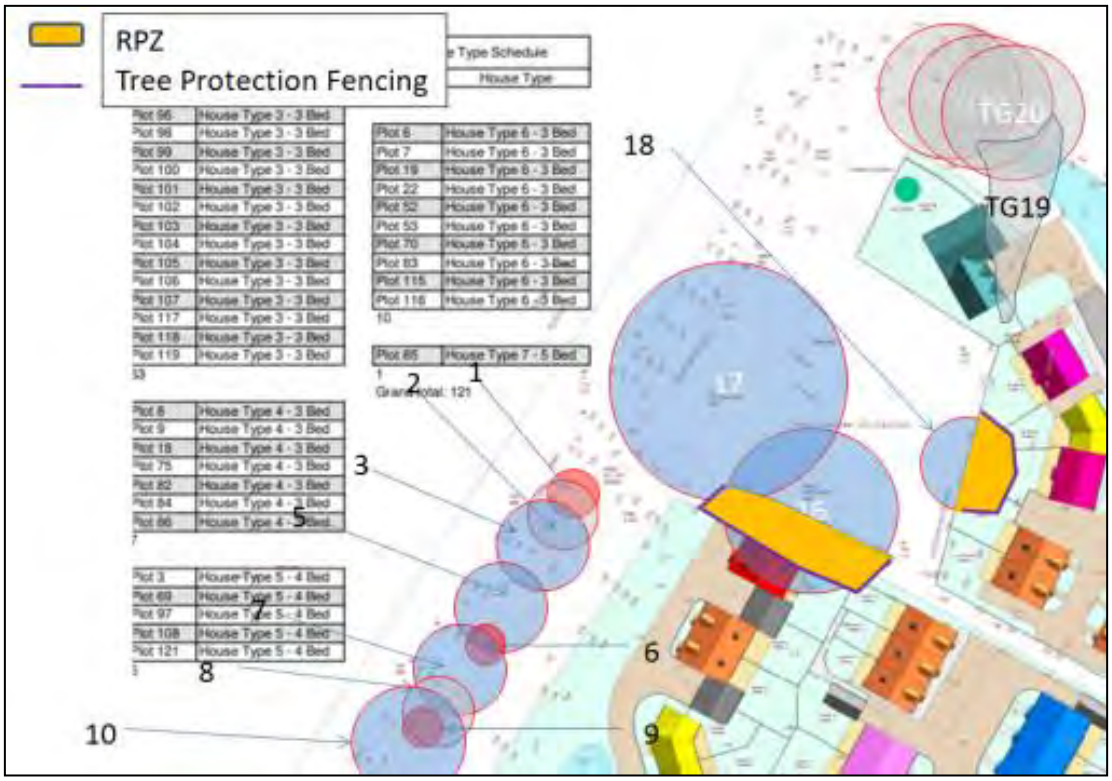
### *4.1.1 Tree Removal and Retention*




The proposed plans for the site suggest the retention of nearly all the trees on site, however the construction of the access road will require the loss of tree 11 (a C quality tree), and TG 19, category C1. In addition, the development, especially the SUDs feature is likely to be within the RPZ of TG20 and it is recommended to either reduce the extension of this feature or remove these 3 trees (Lombardy polar, category C). The build footprint enters the RPZ of tree 16, though at around 10% this is not considered critical. The build will at times impinge slights on RPZs of TG 13 and14, though again at 10% or under this is not considered substantive and is acceptable in arboricultural terms. See Impacts Diagram below.

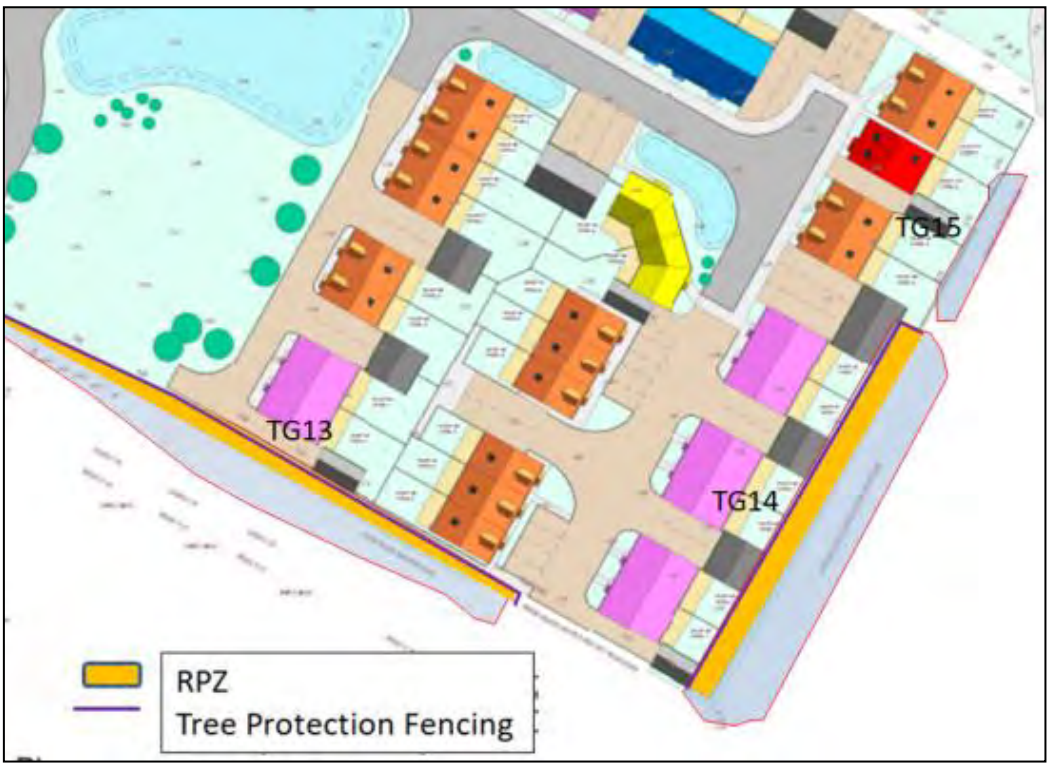



The front ditch will act as a protection for trees 1-10 along the road frontage and no tree protection is needed here. For trees 16 and 18 care should be taken to protect the RPZs of these trees, see below:



For the East of the site, predicted impacts and tree fencing is specified as follows:



Care will need to be taken to protect the root zones of retained trees during any development or landscaping of the site. Additional native planting is also recommended for this site, the proposed new planting should be a species rich, with nectar and berry baring shrubs and trees.

In general, developments should aim to primarily retain and protect trees in the 'A' and 'B' Categories and as many of Group 'C' as can be retained. Although suitable replacement planting, at minimum of a 1:1 ratio with native nectar rich and berry baring native trees, within the scheme area could adequately mitigate for losses of category C trees. To ensure equilibrium between retained trees, any new trees and the new development, the physiological requirements of trees must be carefully considered within the planting layout.

### *4.1.2 Avoiding Accidental Damage to Trees*

Trees may be negatively affected by the construction period by both direct and indirect actions, which are often borne out of ignorance as to the trees' physiological requirements. Careful site planning and management along with the implementation of robust physical protection measures is necessary to ensure the retention of important trees.

### *4.1.3 Soil and Root Protection*

It is essential to safeguard a pre-determined volume of soil around the base of the retained trees to ensure that then ongoing biological functioning of the root system along with the interaction with the soil is not impaired. This requires that, prior to the commencement of development activity on site, a robust protective barrier is erected.

### *4.1.4 Suitable Barriers*

The specifications for this barrier should be as per the British Standard 5837 of 2012 (Trees in Relation to Construction – recommendations). In brief, this consists of 2.3m high panels attached to an adequately braced scaffold structure to deter un-authorized dismantling and robust enough to rebut physical impacts from site plant and machinery. In practice, Heras weld-mesh type panels perform well when attached to the above-mentioned scaffold structure.

### *4.1.5 Bird Breeding Season*

All site clearance should ideally take place outside of the bird breeding season. Bird breeding season is between mid-March and mid-July, although certain species can breed outside these months and if breeding birds are found then work should cease and the advice of an ecologist sought. If clearance is undertaken within the bird breeding season then all site features should preferably be checked immediately prior to clearance by a suitably-qualified ecologist.

### 4.1.6 Shading

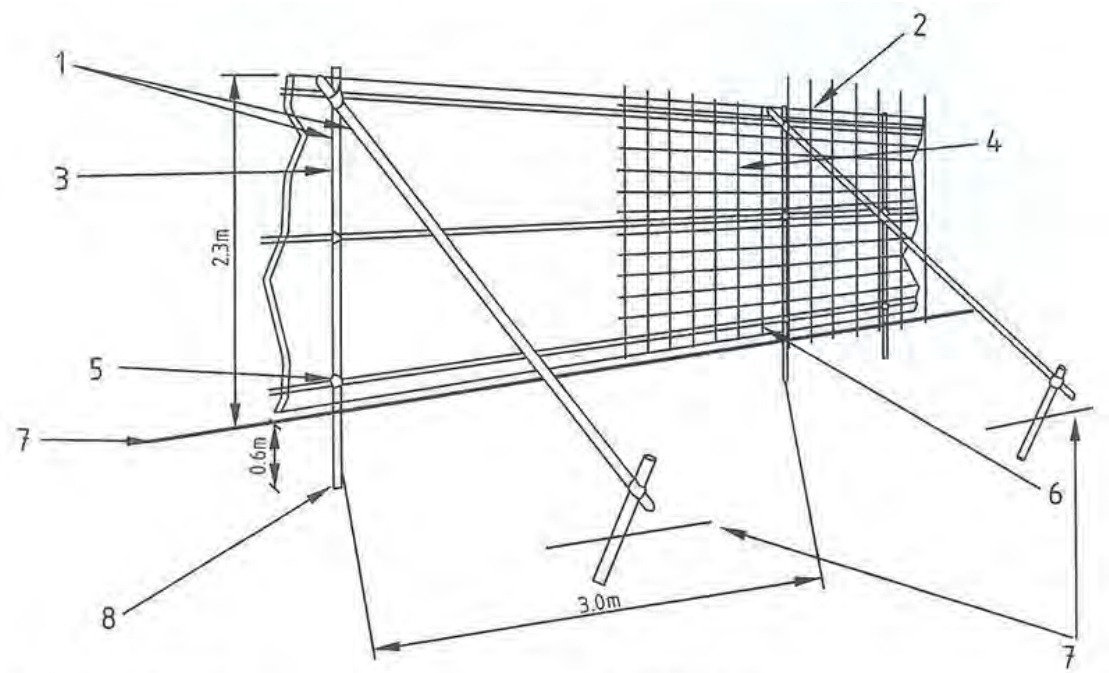
The trees are located mainly on the edges of the site, and therefore shading issues are unlikely.

## 4.2 Tree Protection & Ground Protection

4.2.1 All trees that are being retained on site are to 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. Where all activity can be excluded from the RPA, vertical barriers are to be erected to create a construction exclusion zone. The default barrier specification is to be in accordance with BS 5837:2012 '*Trees in Relation to Design, Demolition and Construction – Recommendations*' as illustrated in Figure 3 below.

4.2.2 The protected area is to be regarded as sacrosanct, and, once installed, barriers and ground protection is not to be removed or altered without prior recommendation by the project arboriculturist and, where necessary, approval from the Local Planning Authority.

4.2.3 All-weather tree protection posters (an example is detailed in Figure 4 below) are to be securely fixed to the tree protection fencing in plain view.




1 Standard scaffold poles
2 Uprights to be driven into the ground
3 Panels secured to uprights with wire ties and, where necessary, standard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5 Standard clamps
6 Wire twisted and secured on inside face of fencing to avoid easy dismantling
7 Ground level
8 Approx. 0.6m driven into the ground

**Figure 3. Example of protective fencing required for all Root Protection Areas.**




**Figure 4. Example of an all-weather tree protection poster.**

4.2.4 Care is to be exercised when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid contact with structural roots. If the presence of underground services precludes the use of driven poles, an alternative specification that provides an equal level of protection is to be prepared in conjunction with the project arboriculturist as illustrated within Figure 3 above.

4.2.5 Where the set-back of the tree protection barrier exposes unmade ground to construction damage, temporary ground protection is to be installed as part of the implementation of physical tree protection measures prior to work starting on site.

4.2.6 Temporary ground protection is to be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil. Detail is shown in Figure 5 below: Scaffolding and root protection within the RPA.

a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane.

b) for pedestrian-operated plant up to a gross weight of 2t, proprietary, inter-linked ground protection boards placed on top of a compression resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane.

c) for wheeled or tracked construction traffic exceeding 2t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

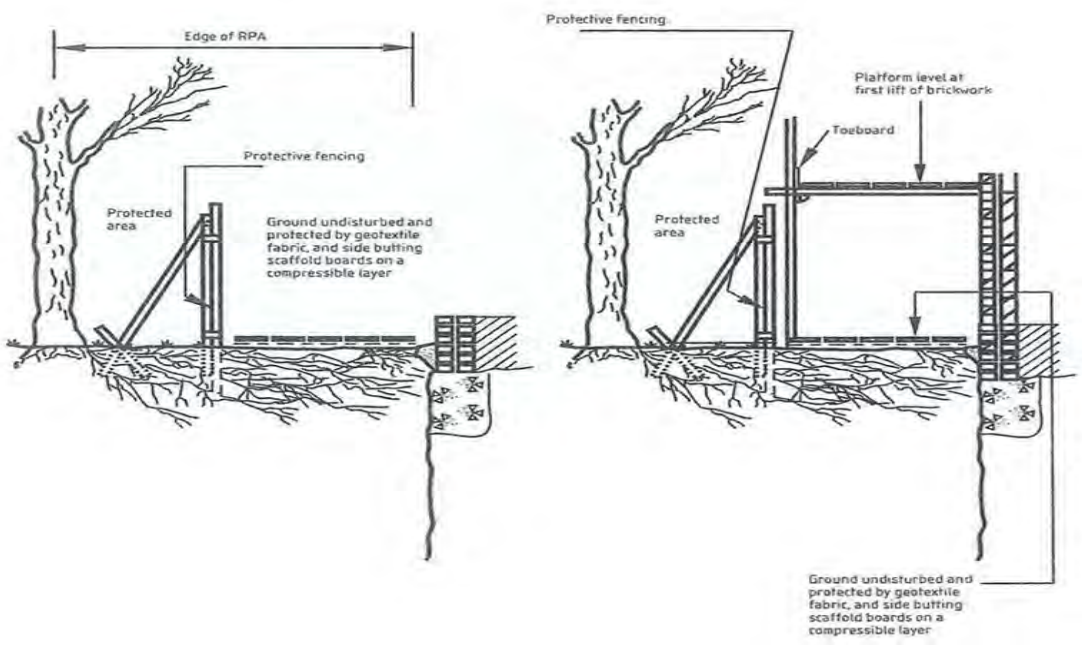



**Figure 5. Scaffolding and root protection within the Root Protection Area.**

### 4.3 Landscape Considerations

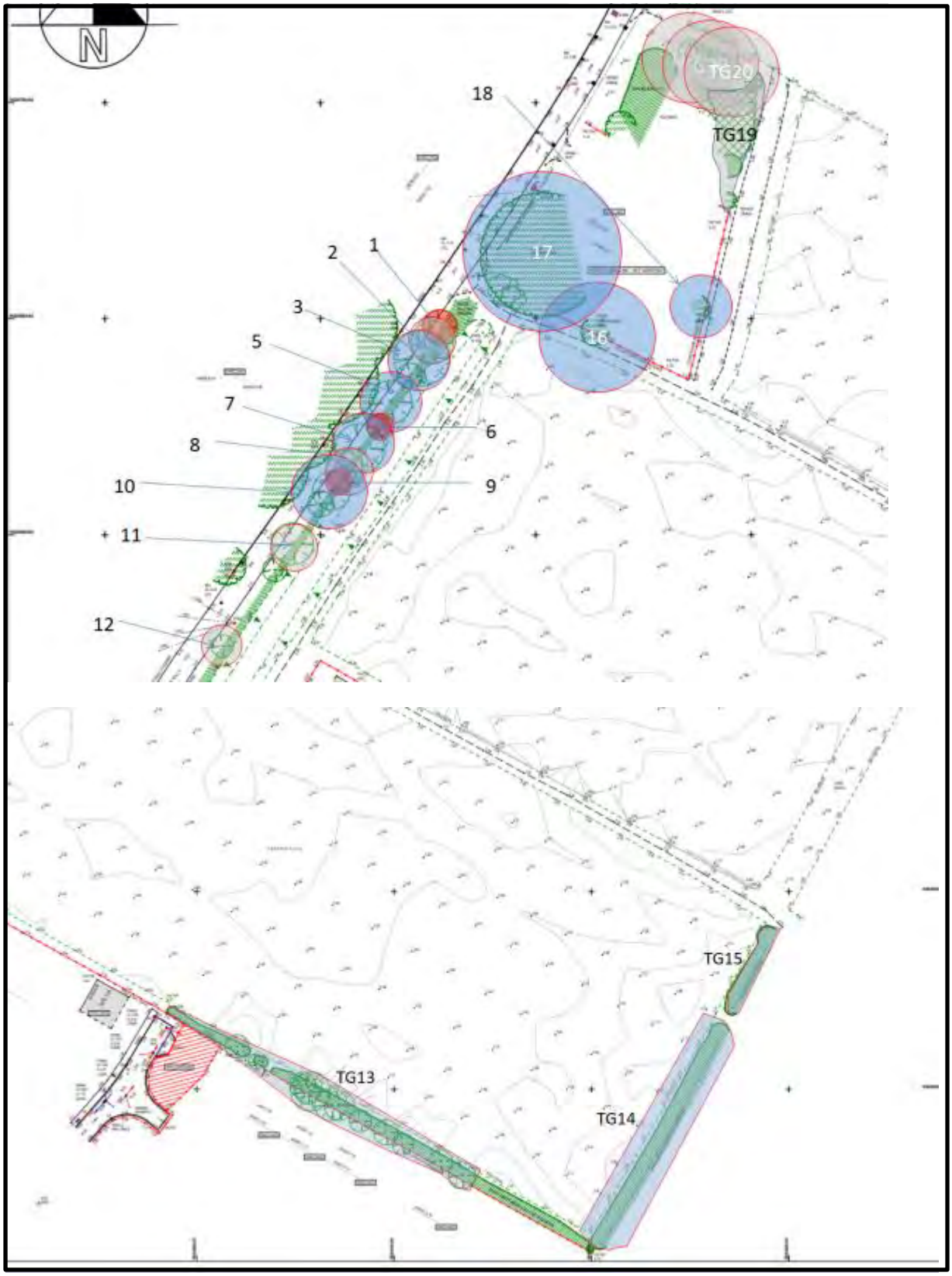
Consideration should be given to maintaining tree-lined boundary features, landscape impacts, habitat connectivity and reinforcing site boundaries. Further consideration should be given to the appearance of frontages and screening. The appropriate landscape mitigation and compensation will need to be discussed at the pre- application stage with the appropriate Local Authority Planning Landscape Officer. It is recommended that compensation planting is undertaken and located to enable the landscape value of this area to be reinforced, if any trees with landscape value are to be removed from the site.

### 4.4 Mitigation and Compensation

In compensation for the loss of any of the existing trees, at least an equal number of native trees should be planted as part of the new development. The trees will be species that have wildlife benefits and are sympathetic both to the existing tree structure and suitable for their likely eventual size limitation, such as apple, cherry, damson, pear. All trees will be planted as 9-10cm Light or Heavy Standards. All appropriate British Standards will be applied in terms of planting specifications. The location of the replacement trees should be determined in a detailed landscape design plan, including location and species.

## Appendix 1a: Tree Location Plan

Red line indicates RPZ



**Note on the plans supplied. The topographical surveys do not recognize off-site trees with RPAs within the site. The location and tree canopies/RPZs of the trees indicated are to the best of the surveyors knowledge correct, but all measurements of RPZs and tree canopies should be taken directly from the figures in Section 3. No tree location or protection plans should be directly scaled from.**

**Category A**

Those trees of high quality and value. Significant trees that are structurally sound and can be retained in the long term (i.e. >40 years) or trees that can be retained in the long term following remedial tree surgery. Colour code on the plan- pale green.

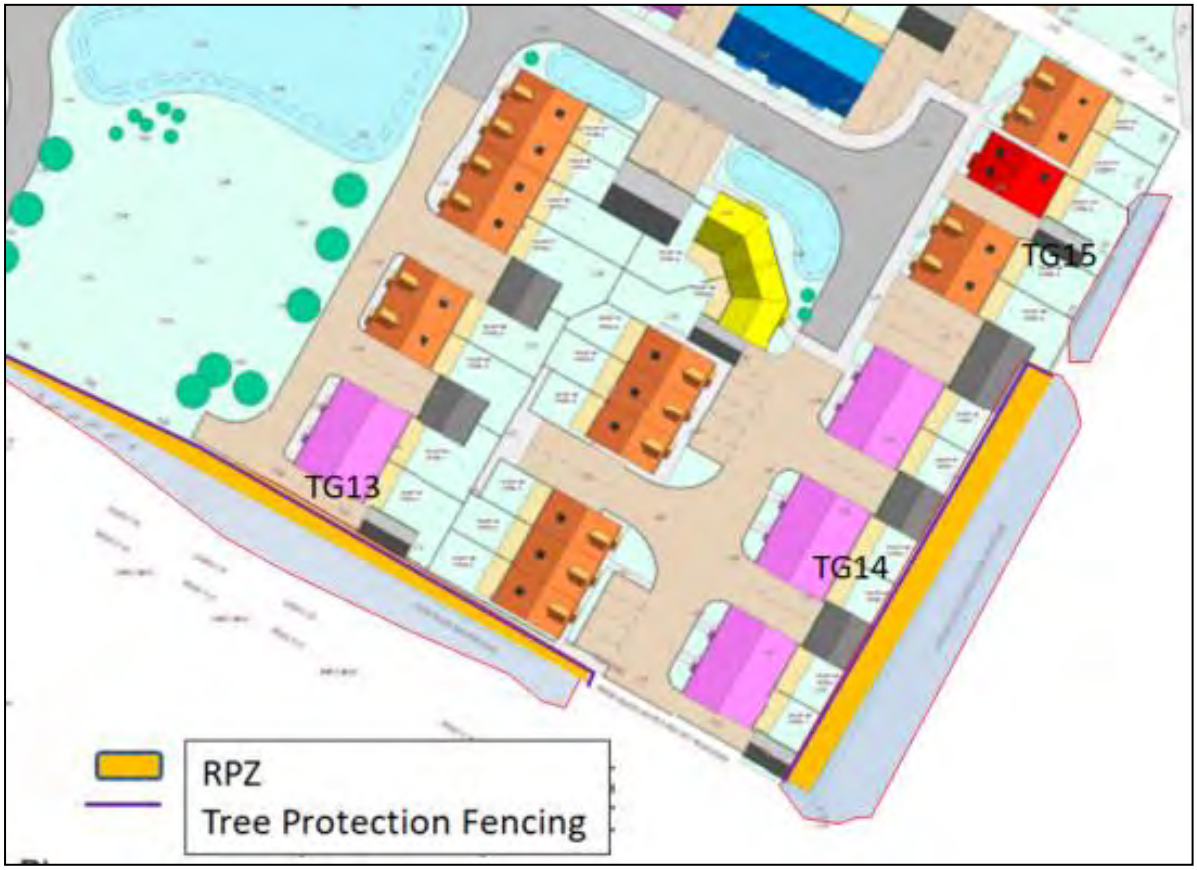
**Category B**

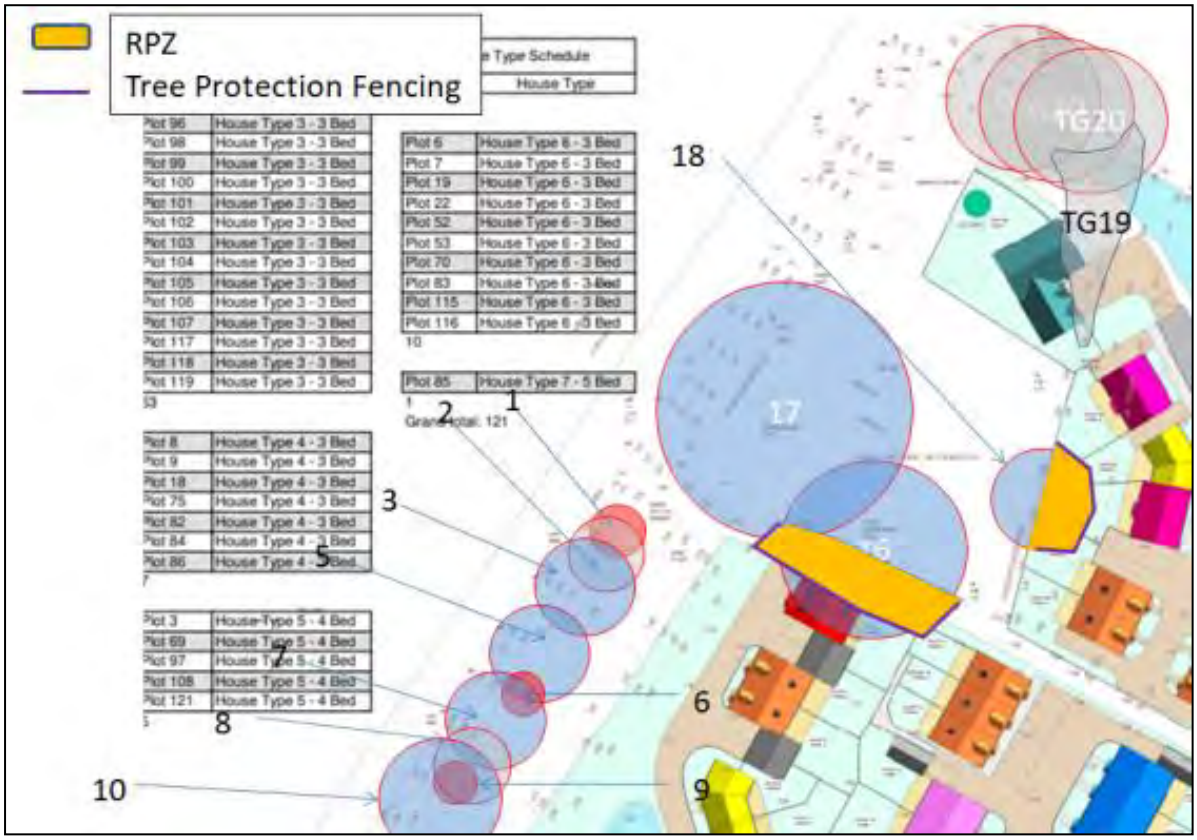
Those trees of moderate quality and value. Trees that may live 15-40 years. Trees that may live for more than 40 years, but whose removal may be required in that time frame to allow development of retained trees. Trees that are defective but could be retained in the medium term by remedial tree surgery. Colour code on the plan- mid blue.

**Category C**

Those trees of low quality and value. Trees that can only be retained in the short term (.e, 5-15 years) and that have little landscape impact due to poor form or condition. Trees having a stem diameter of <150mm at 1.5m above ground level that could be replaced. Colour code on the plan- grey.

## Appendix 1b: Tree Protection Plan



## Appendix 2: Tree Images

































