

Arboricultural Impact Assessment

62 Charles Close

Wroxham

TE-274.1



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| | |
|---------------------------|--|
| Report title | Arboricultural Impact Assessment |
| Report reference | TE-274.1 |
| Revision | B |
| Site address | 62 Charles Close, Wroxham, Norwich, NR12 8TT |
| Grid reference | TG 30358 17138 |
| Report compiled by | Larry Liptrot BSc (Hons) FdSc |
| Client | Mr Jeff Devine |
| Date | 27 th January 2021 |



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Executive Summary

| | |
|--|---|
| Site Address | 62 Charles Close, Wroxham, Norwich, NR12 8TT |
| Grid Reference | TG 30358 17138 |
| Proposed Development | The development proposal is to extend the footprint of the existing property and modify the design of the building. |
| Results | The site survey identified a total of 10 trees and 4 groups of trees on/adjacent to the site. These included 1 Category A tree of high quality, 2 Category B trees of moderate quality and 7 Category C trees of low quality. There are also 3 Category C groups of trees of low quality and 1 category B group of trees of moderate quality. |
| Conclusions and Recommendations | <p>Two Category C trees are proposed for removal to facilitate the development proposals.</p> <p>It is recommended that all works follow an Arboricultural Method Statement, which should include the provision of temporary tree protection fencing.</p> |



1. Introduction

Instruction

Talking Elm Tree Services have been instructed by Mr Jeff Devine, to undertake an Arboricultural Impact Assessment of the land found at 62 Charles Close, Wroxham, Norwich, NR12 8TT, hereafter referred to as 'the site'.

1.1. The purpose of the report is to:

- Assess the quality of the trees on and immediately adjacent to the site, in accordance with BS5837: 2012 – Trees in Relation to Design, Demolition and Construction: Recommendations (hereafter referred to as BS5837: 2012).
- Identify trees suitable for retention and for removal due to the proposed development.
- Prescribe tree protection measures to ensure that retained trees thrive after the development has been completed.
- Prescribe arboricultural recommendations for the long-term management of trees on the site.
- To assess the site for its suitability for mitigation planting, and to specify planting requirements.



Site Details

- 1.2. The site is located at grid reference TG 30358 17138 and is accessed from Charles close.
- 1.3. The site is bordered by residential properties and agricultural land to the south. The topography of the site is relatively flat.



Figure 1.1. Aerial imagery of site and surrounding area (Google Earth Pro, 2021)

Proposed Development

- 1.4. The development proposal is to extend the footprint of the existing property and modify the design of the building.



2. Methods

- 2.1. The local council was consulted to determine if any trees on the site and immediately adjacent to the site are protected by Tree Preservation Orders (TPOs) and/or are within Conservation Areas. Cranfield (2020) was consulted as to the soil type of the surrounding area.
- 2.2. The site survey was carried out on 22nd January 2021. The survey was carried out by Larry Liptrot, an experienced Arboricultural Consultant, who holds an FdSc in Arboriculture, a BSc (Hons) in Ecology and has been awarded the Lantra Professional Tree Inspection Certificate.
- 2.3. All trees on site were inspected from ground level, using the Visual Tree Assessment (VTA) method (Mattheck *et al*, 2015). Tree locations were plotted, and tree heights and crown clearance heights were measured using a clinometer. Canopy spread was paced out by the consultant. The diameter at breast height (DBH) of trees was recorded by measuring the circumference of tree stems at an approximate height of 1.5m.
- 2.4. Any visible structural and/or physiological defects of trees were recorded; however, no advanced decay analysis or aerial inspection techniques were carried out, and the tree inspection does not constitute a full tree safety assessment.
- 2.5. The retention value of all trees was classified as A, B, C or U, using the criteria shown in Table 2.1.

Table 2.1. BS5837 Cascade Chart (adapted from British Standards, 2012)

| Category | Definition | Retention |
|------------|---|--|
| Category A | Trees of high quality with an estimated remaining life expectancy of at least 40 years; trees that are particularly good examples of their species, especially if rare or unusual. | Highly desirable |
| Category B | Trees of moderate quality with an estimated remaining life expectancy of at least 20 years; trees lacking the special quality to merit category A designation. | Desirable |
| Category C | Trees of low quality with an estimated remaining contribution of at least 10 years, or trees with a stem diameter below 150mm; unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories. | Feasible, but can be removed if posing a constraint to development |
| Category U | Trees that have serious, irremediable, structural and/or physiological defects, including those that will become unviable after removal of other category U trees. | Unfeasible |



3. Results

Desk Based Study

- 3.1. An internet search of Broadland district council website on the 27/01/2021, confirmed that the property is within the Wroxham Conservation Area (CA).
- 3.2. Cranfield (2021) states that the surrounding area consists of freely draining, slightly acid and loamy soils.

Tree Population Assessment

- 3.3. The site survey identified a total of 10 individual trees and 4 group of trees with the potential to be affected by the development proposals.
- 3.4. The trees on the site include; 1 Category A tree of high quality, 2 Category B trees of moderate quality and 7 Category C trees of low quality. There are also 3 Category C groups of trees of low quality and 1 category B group of trees of moderate quality.

| Category | Description | Tree/group numbers | Totals |
|---------------|---|--|-------------------------------|
| A | Trees of high quality which should where possible be retained throughout any proposed development | T6 | 1 Tree |
| B | Trees of moderate quality which should where possible be retained throughout any proposed development | T5 and T3 | 2 Trees & 1 Group |
| C | Trees of low quality which should not be considered a constraint to development | G1, G2. G3, T1, T2, T3, T4, T7, T8, T9 and T10 | 7 Trees & 3 Groups |
| U | Trees which should be removed for sound management reasons, regardless of proposals | - | - |
| Total: | | | 10 Trees & 4 Group |

The tree species on and adjacent to the site include: Apple *Malus sp*, Ash *Fraxinus excelsior*, Beech *fagus sylvatica*, Cherry *Prunus sp*, Cherry laurel *Prunus laurocerasus*, Cherry plum *Prunus cerasifera*, Dawn redwood *Metasequoia glyptostroboides* Dogwood *Cornus sp*, , English oak *Quervus robur*, *Eucalyptus sp*, Grey poplar *Populus x canescens* Hazel *Corylus avellana*, Holly *Ilex aquifolium*, Juniper *Juniperus sp*, Lawson cypress *Chamaecyparis lawsoniana*, Laburnum *Laburnum anagyroides*, Leyland cypress *Cupressus x leylandii*, Lilac *Syringa vulgaris* , *Magnolia sp*, Monterey cyprus *Cupressus macrocarpa*, Norway maple *Acer platanoides* Privet *Lugustrum vulgare*, Pear *Pyrus sp* Silver birch *Betula pendula* Sycamore *Acer pseudoplatanus* and Walnut *Juglens nigra* .



4. IMPACT ASSESSMENT

Tree Removals due to Development

Two Category C trees will require removal to facilitate the development proposals.

Table 4.1 Summary of trees necessitating removal due to development

| CATEGORY | TREE/GROUP NUMBERS | TOTALS |
|----------|--------------------|--------|
| A | - | 0 |
| B | - | 0 |
| C | T8 and T10 | 2 |
| U | - | 0 |

Retained trees

- 4.1. The crowns of the trees of G2 are touching the existing structure. These trees will need pruning back to give 2.5m so that work can commence in this area.

Post Development Pressure upon trees

- 4.2. It is not anticipated that there will be any significant post development pressure upon the remaining retained trees on site.



5. RECOMMENDATIONS

Tree Removals

- 5.1. T8 and T10 will require removal to facilitate the development proposals.
- 5.2. All tree works should be carried out by a suitably qualified and fully insured arborist who is able to comply with BS3998: 2010 – Tree Works: Recommendations.
- 5.3. At the time of writing, trees recommended for removal are not afforded protection by any Tree Preservation Orders (TPOs), however they are protected by the Wroxham Conservation Area (CA). This may be subject to change, and any legal designations affecting trees should be verified with the local authority prior to works commencing. Killing or damaging a protected tree is a criminal offence which can result in an unlimited fine.

Mitigation

- 5.4. To mitigate for the loss of T10 and T8, the planting of two heavy standard English Oak trees and a heavy standard Liquid amber tree is proposed. The location of the plantings is to be to between T1 and G2.

Arboricultural Method Statement

- 5.5. To ensure that all trees scheduled for retention survive the proposed development and thrive upon its completion, all works should follow an Arboricultural Method Statement (AMS). This should include the specification of temporary tree protection fencing during development works, which should be detailed in a Tree Planting Plan.
- 5.6. The AMS should account for any further change to the scheme, particularly the provision of any below ground utilities which have the potential to impact upon tree roots.



6. References

British Standards (2010). *BS3998: 2010 – Tree Works: Recommendations*

British Standards (2012). *BS5837: 2012 - Trees in Relation to Design, Demolition and Construction: Recommendations*. London: British Standards Institute

British Standards (2014). *BS8545: 2014 – Trees: from Nursery to Independence in the Landscape*. London: British Standards Institute

Cranfield (2021). *Interactive Soilscape Viewer* [online]. Available at: >www.landis.org.uk< [accessed 2021]

Google Earth Pro (2021). *Google Earth* [online]. Available at: >www.google.co.uk/earth< [accessed 2021]

Johnson, O., More, D. (2004). *Collins Tree Guide*. London: HarperCollins

Mattheck, C., Bethge, K., Weber, K. (2015). *The Body Language of Trees*. Karlsruhe (Germany). The Karlsruhe Research Institute



Appendices

Appendix A: Tree Survey Schedule

A plan of the tree locations can be viewed in Appendix B: Tree Retention Plan.

| Key | | | |
|---------------------|---|-----------------|---|
| Species | Common name following Johnson & More (2004) | Age | EM – Early mature; tree in 2/3 of estimated lifespan |
| H | Height, to nearest 0.5 metres | | M – Mature; tree in 3/3 of estimated lifespan |
| CC | Height of crown clearance, to nearest 0.5 metres | | OM – Over mature; tree that has exceeded its natural life span |
| No of stems | Number of stems bifurcating below 1.5 metres | | V – Veteran tree |
| DBH | Diameter at breast height (1.5m), to nearest 10 millimetres | RPA | Root protection area, in metres squared |
| Crown spread | To nearest 0.5m | RPR | Root protection radius, in metres |
| Age | Y – Young sapling/newly planted tree | SULE | Safe useful life expectancy of tree, in years |
| | SM – Semi-mature; tree in 1/3 of estimated lifespan | Category | See BS5837 cascade chart (Table 2.1) AV Average |

| Tree No. | Species | Height (m) | Crown clearance (m) | No. of stems | DBH (mm) | Crown Spread | | | | Age | Comments | RPR(m) | RPA (m ²) | SULE | Category |
|----------|---|------------|---------------------|--------------|----------|--------------|---|---|---|-----|--|--------|-----------------------|-------|----------|
| | | | | | | N | E | S | W | | | | | | |
| T1 | Walnut <i>Juglens nigra</i> | 7.5 | 2 | 1 | 280 | 4 | 3 | 3 | 3 | SM | None. | 3.4 | 35.5 | 11-20 | C1 |
| T2 | Beech <i>Fagus sylvatica</i> | 9 | 31 | 1 | 560 | 2 | 3 | 3 | 3 | EM | Recently pollarded, some root girdling. | 6.7 | 141.9 | 11-20 | C1 |
| T3 | Dawn redwood <i>Metasequoia glyptostroboides</i> | 15 | 1 | 1 | 440 | 4 | 3 | 3 | 3 | EM | Good form and vitality. | 5.3 | 87.6 | 21-40 | B1 |
| T4 | Grey poplar <i>Populus × canescens</i> | 12 | 1 | 1 | 290 | 4 | 4 | 3 | 2 | SM | Leaning towards roadside due to occlusion from adjacent trees. | 34.8 | 3804.6 | 11-20 | C1 |

| Tree No. | Species | Height (m) | Crown clearance (m) | No. of stems | DBH (mm) | Crown Spread | | | | Age | Comments | RPR(m) | RPA (m2) | SULE | Category |
|----------|--|------------|---------------------|--------------|-------------|--------------|---|---|---|------|--|--------|----------|-------|----------|
| | | | | | | N | E | S | W | | | | | | |
| T5 | Red Norway maple <i>Acer platanoides</i> | 13 | 2 | 1 | 780 | 6 | 4 | 7 | 7 | OM | Multi stemmed at 2m. Bulging areas on main stems. Root girdling at base. | 9.4 | 275.2 | 21-40 | B1 |
| T6 | Atlas cedar <i>Cedrus atlantica</i> | 20 | 0 | 6> | 400 av | 5 | 5 | 7 | 5 | M | Multi stemmed from 0.5m. Good form and vitality | 10.3 | 335.5 | 40> | A1 |
| T7 | <i>Magnolia Sp</i> | 5 | 1 | 6+ | 15 av | 3 | 3 | 3 | 3 | SM | Multi-stemmed from base | 0.4 | 0.4 | 11-20 | C1 |
| T8 | Copper beech <i>Fagus sylvatica 'Purpurea'</i> | 7.5 | 3 | 1 | 500 | 3 | 3 | 4 | 3 | M | Recently crown raised and heavily reduced. | 6.0 | 113.1 | 11-20 | C1 |
| T9 | Silver birch <i>Betula pendula</i> | 14 | 0 | 1 | 370 | 2 | 3 | 3 | 3 | M | Slight lean to east. Exposed damaged roots at base. Fastigiate form. | 4.4 | 61.9 | 11-20 | C1 |
| T10 | Monterey cypress <i>Cupressus macrocarpa</i> | 7 | 0 | 1 | 480 | 2 | 2 | 2 | 2 | SM | Growing close to structures, multi-stemmed usual form for species. | 5.8 | 104.2 | 11-20 | C1 |
| G1 | 60 % Norway spruce 30% Leyland cypress 10% Grey poplar | 6 average | 2 average | - | 150 average | - | - | - | - | Y-SM | Boundary hedge with limited arboricultural merit. | - | - | 11-20 | C2 |



| Tree No. | Species | Height (m) | Crown clearance (m) | No. of stems | DBH (mm) | Crown Spread | | | | Age | Comments | RPR(m) | RPA (m2) | SULE | Category |
|----------|--|------------|---------------------|--------------|-------------|--------------|---|---|---|--------|--|--------|----------|-------|----------|
| | | | | | | N | E | S | W | | | | | | |
| G2 | 30% Yew 30% Malus sp 15% Lawson 10% Holly 10% Spotted laurel 5% Norway spruce | 4 average | - | - | 50 average | - | - | - | - | Y-SM | Boundary trees with limited arboricultural merit. | - | - | 11-20 | C2 |
| G3 | 65% Beech 20% English oak 5% Sycamore 5% Cherry 5% Lawson cypress | 7 average | 2 average | - | 180 average | - | - | - | - | SM | Boundary trees with limited arboricultural merit. | - | - | 11-20 | C2 |
| G4 | 25% Eucalyptus 25% Norway Maple 15% Leyland cypress 15% Larch 10% Lawson cypress 5% Yew 5% Cherry laurel | 4 average | - | - | 50 average | - | - | - | - | SM- EM | Small field boundary woodland with some dead trees within. | - | - | 21-40 | B2 |



Appendix D: Arboricultural Method Statement

1. Timing of Works

The phasing of works should be carried out in accordance with Table 1, below.

Table 1: Timing of Works

| Stage | Works |
|-------|---|
| 1 | Site induction |
| 2 | Carry out tree removal works |
| 3 | Install tree protection fencing |
| 4 | Inspection by arboricultural consultant |
| 5 | Carry out demolition / excavation / construction works, including removal of hard standing surfaces |
| 6 | Remove tree protection when works completed |

2. Site Induction

- 2.1. Prior to works commencing, all contractors should be briefed on trees within the site and their root protection areas (RPA's) during a site induction. This method statement and a copy of the Tree Protection Plan (see Appendix C) should be issued to all contractors working on the site.

3. Tree Works

- 3.1. Prior to works starting on site G2 will require cutting back by 2.5m from structure. Additionally T8 and T10 will require removal.
- 3.2. All work should be undertaken to the standards set out in BS3998: 2010 – Tree Works: Recommendations.
- 3.3. No works should be carried out on protected trees without consent from the local authority.

4. Tree Protection Fencing

- 4.1. To allow for extra working area the tree protective fencing has been placed within the RPA of G2. As work will be carried out within the RPA of G2, this area will require an access point; a walkway made up of Hessian matting and wood mulch must be placed around the RPA of the tree to provide access for pedestrian traffic only . Once work has been completed in this area the fencing should be moved outside the RPA of G2
- 4.2. Prior to machinery entering the site, it will be necessary to ensure that all trees on the site are adequately protected. A tree protection plan can be viewed in Appendix C Tree Protection Plan.
- 4.3. Tree protection fencing should consist of a vertical scaffold framework, well braced to resist impacts. The vertical poles should be spaced at a maximum interval of 3m and driven securely into the ground. Onto this framework, welded mesh panels should be fixed (see figure 4.1, below). Laminated waterproof A3 signs should be fixed securely to fencing panels on each enclosure at 9m intervals. The signs should clearly read: 'Protected Tree Zone, no storage or operations within fenced off areas'.
- 4.4. No materials that are likely to have an adverse effect on tree health, such as oil, bitumen or cement should be stored within the protective fencing. Where possible this area should be extended to 10m away from the fencing. Where there is a risk of polluted water runoff into RPAs, heavy duty plastic sheeting and sandbags must be used to contain any spillages and prevent contamination. No fires should be lit within 20 metres of the protective fencing.

- 4.5. After the tree protection fencing has been installed, an arboricultural consultant should visit the site to confirm that the tree protection measures are satisfactory.
- 4.6. If any breach in the tree protection measures occurs, it is the site manager's responsibility to report this to an arboricultural consultant so the appropriate measures may be taken.
- 4.7. Once the construction works have been completed, the tree protection fencing may be removed. This should be done with care to ensure that no damage to trees is caused.

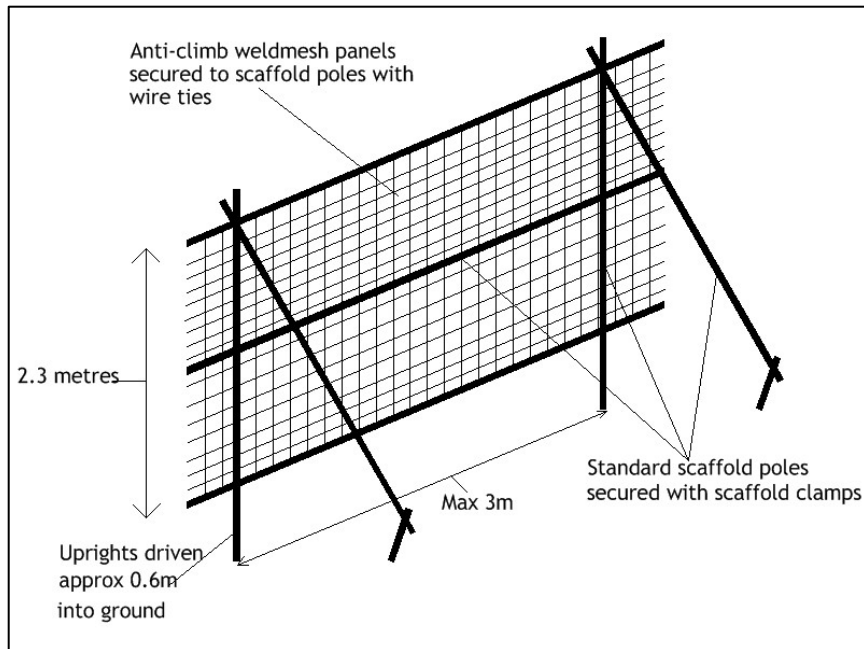


Figure 1: Temporary Protective Fencing

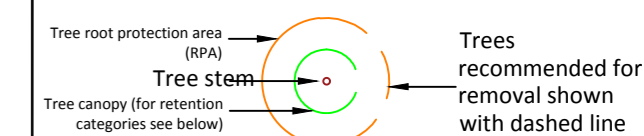
Appendix B and C: Tree Retention and Tree Protection Plan

| | |
|------------------|-------------------------------|
| Project: | 62 Charles Close , Wroxham |
| Drawn by: | Larry Liptrot |
| Date: | 27/01/2020 |
| Scale: | 1:300@ A2 |

Do not scale off this drawing - to be reproduced in colour only



Key:



| | |
|--|---|
| | Category A trees of high quality |
| | Category B trees of moderate quality |
| | Category C trees of low quality |
| | Category U trees unsuitable for retention |
| | Root protection area - to remain protected throughout proposals |
| | Tree protection fencing - to remain in place throughout proposals |
| | Proposed cellular confinement system (see method statement for further details) |

