



Independent Tree Surveys

Tree Survey Report

Carraig Glas
Stradbally
Co. Laois

November 2019

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Tree Survey Drawing 19047_TS (Tree Constraints Plan)

1.0 Introduction

It is planned to re-develop disused land at Carraig Glas, Stradbally, Co. Laois. The site includes a number of trees, hedges and shrubs and so this report has been commissioned to provide an arboricultural assessment of the trees to input into the design and layout of the project.

2.0 Instruction

To carry out a Tree Survey and prepare a Tree Constraints Plan compliant with BS5837: *Trees in relation to design, demolition and construction (2012)* of the significant trees and hedges located on and around the site at Carraig Glas, Stradbally, Co. Laois.

3.0 Report Limitations

- The inspection has been carried out from ground level using visual observation methods only.
- Trees are living organisms whose health and condition can change rapidly. Trees should be checked on a regular basis, preferably once a year. The conclusions and recommendations of this report are valid for one year.
- The fruiting bodies of some important species of decay fungi only emerge at certain times of the year and may not have been visible during this inspection.
- There is no such thing as a 100% safe tree in all conditions, since even perfectly healthy trees may fall or suffer branch break.
- Climbing plants such as Ivy can obscure structural defects and some symptoms of disease, where such plants prevent a thorough examination it is recommended that the climber be cut at ground level and the tree re-inspected when it has died back.
- Some of the trees included in the survey drawing originate outside the boundary fence of the site; these trees were not fully accessed, and so the condition assessments are preliminary and the tree dimension measurements are estimated.
- Some of the trees were not plotted by topographic survey; the positions of these trees on the survey drawings are indicative.

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November 19th 2019

4.0 Survey Methodology

The significant individual trees inside and adjacent to the site were assessed from ground level using Visual Tree Assessment (VTA) techniques and relevant observations and findings were recorded in compliance with the industry standard document BS5837: *Trees in relation to design, demolition and construction (2012)*.

4.1 Survey Key

Tree Numbers

Individual trees, hedges and tree groups in and around the site were allocated numbers, with the five mature Pine trees being tagged with numbered tree tags; these numbers are used to identify the trees in the survey schedule and on the supporting survey drawings.

Tree Species

Common and botanical names of the tree species were recorded.

Tree Crown Dimensions

Tree height (Ht), crown clearance (Cl) and crown-spread (NESW cardinal points) measurements are in metres and are estimated.

Stem Diameter (Dbh)

Measurements are in millimetres and taken at 1.5m from ground level, multiple stems (St) are recorded as a function of the BS:5837 RPA formulae described below.

Tree age classes

Age classes were recorded as:

| | | |
|-----|--------------|--|
| Y | Young | Recently planted (with 5 years or so) |
| SM | Semi-Mature | Well established young tree |
| EM | Early Mature | Established tree not yet fully grown |
| M | Mature | Full or near full grown tree |
| LM | Late Mature | Older specimen in full maturity |
| OM | Over Mature | Reached full maturity now declining through natural causes |
| Vet | Veteran | Notable due to large size, old age, ecological importance |

Tree Physiological and Structural condition

Tree condition was graded as

| | |
|-------|--|
| Good: | No obvious defects visible, vigour and form of tree good. |
| Fair: | Tree in average condition for its age and the environment. |
| Poor: | Tree shows signs of ill health/structural defect |
| Bad: | Tree in seriously bad health/major structural problem |

Work Recommendations

Preliminary management recommendations are made where necessary and pertain to current site conditions unless otherwise stated.

Estimated Remaining Contribution (ERC)

The approximate number of years that a tree should continue to live and contribute amenity, conservation or landscape value to the site under current site conditions.

4.2 Tree Retention Category (Cat) (BS5837: 2012 Trees in relation to design, demolition and construction – Recommendations)

The tree retention category system grades a tree's suitability for retention within a development:

- A** Indicates a tree of high quality and value. These are trees that are particularly good examples of their species, which also provide landscape value. These trees are in such a condition as to be able to make a substantial contribution. (A minimum of 40 years is suggested)
- B** Indicates a tree of moderate quality and value. Trees that might be included in the high category, but are downgraded because of impaired condition. These trees are in such a condition as to make a significant contribution. (A minimum of 20 years is suggested)
- C** Indicates a tree of low quality and value - trees with an estimated remaining life expectancy of at least 10 years, or younger trees with a stem diameter of below 150mm and/or <10m in height.
- U** Trees that are in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

Sub Categories

Tree categories may be further categorised using the following sub-categories (e.g. C1, C2 or C3) - 1 mainly Arboricultural qualities, 2 mainly landscape qualities, 3 mainly cultural values.

4.3 Root Protection Area

The Root Protection Area (RPA) is the minimum area around individual trees to be protected from disturbance during construction works; RPA is recorded as a radius in metres measured from the tree stem and is shown on the tree survey/constraints drawing as a circle with the tree stem in the centre.

For single stem trees, the root protection area (RPA) should be calculated as an area equivalent to a circle with a radius 12 times the stem diameter.

For trees with more than one stem, one of the two calculation methods below should be used. The calculated RPA for each tree should be capped to 707 m².

a) For trees with two to five stems, the combined stem diameter should be calculated as follows:
 $\sqrt{((\text{stem diameter } 1)^2 + (\text{stem diameter } 2)^2 \dots + (\text{stem diameter } 5)^2)}$

b) For trees with more than five stems, the combined stem diameter should be calculated as follows:

$\sqrt{((\text{mean stem diameter})^2 \times \text{number of stems})}$

5.0 Findings

The trees and shrubs were assessed during a site visit on the 14th of November 2019; the field data for the trees is contained in the accompanying Tree Survey Schedule. Tree location, BS5837 category, RPA and approximate crown shape are shown on the Tree Survey Drawing 19047_TS.

Full details of the individual trees assessed on the site are listed in the Tree Survey Schedule in the appendices of the report. A total of 11 individual trees were assessed as part of the survey fieldwork; one tree was graded category B (moderate value) and 10 were graded as category C trees (low value). The five tree groups and nine sections of hedge also included in the schedule were graded category C.

The survey site included the grounds of a former community garden and other areas of disused former agricultural land. Tree cover within the site is limited, with the most prominent features

The most significant trees included in the schedule are the row of mature Pine trees tagged 18-22; these trees form a linear group along the northern fence-line of the former enclosed garden area and have a strong visual presence in the northern part of the site. The trees are of variable quality and value, with all of the trees likely to have sustained some level of root damage during past works within their root zones. The largest tree (tagged 19) is in fairly good physiological health; however, it is of questionable structural integrity, with a definite defect observed in the base of the union as the main stem forks into two at 2-3m from ground level.

The southernmost Pine tree (tagged 22) is showing clear signs of physiological stress, with the upper half of the tree crown now noticeably sparse and depleted.

There are some smaller trees across the site, some of which look to have been planted, whilst others are evidently self-sown. The bulk of the vegetation recorded is located in hedges and groups around the perimeter of the site or outside the site boundaries in neighbouring lands.

6.0 Preliminary Management Recommendations

Preliminary management recommendations for the trees assessed are listed in the tree survey schedule in the appendices; these pertain to *current* site conditions unless otherwise stated. All tree work should be carried out by qualified and experienced tree surgeons; all tree work should be in accordance with *BS3998 (2010) Tree Work – Recommendations*.

Should the site be developed and the land use changes include a significant increase in site occupancy by people, roads, buildings etc. the merits of the retaining the mature Pine trees are questionable. If their retention is strongly desired, then I would recommend that they are incorporated into green space well away from any new structures or roads etc. In my view they would not be suited to inclusion within highly modified environments such as roadside verges, hard surfacing or paving for example.

The hedges around the site are mostly of poor quality and value, however hedges H1 and H2 could be restored through active management works and infill planting.

The invasive plant Japanese Knotweed (*Fallopia japonica*) was observed in the overgrown northern part of the site, this will need suitable control measures if the site is to be restored or developed.

7.0 Site Photographs



1. Prominent Pine trees tagged 18-22 in the north-western part of the site



2. Cypress trees making up group G5 outside the site boundary



3. Cluster of Beech trees (group G3) and Lawson Cypress T28 along the northern boundary of the site.



4. Access drive into site viewed from the south, with group G2 to right and hedge H6 to left

8.0 Appendices

Tree Protection on Construction Sites – General Recommendations

Tree Survey Schedule

Tree Survey Drawing 19047_TS (Tree Constraints Plan)

Tree Protection on Construction Sites – General Recommendations

Trees being retained should be protected from unnecessary damage during the construction process by effective construction-proof barriers that will define the limits for machinery drivers and other construction staff. Ground protected by the fencing will be known as the Construction Exclusion Zone (CEZ). Sturdy protective fencing will be erected along the points identified in the Tree Protection Plan **prior** to any soil disturbance and excavation work starting; this is essential to prevent any root or branch damage to the retained trees. The British Standard BS5837: *Trees in relation to design, demolition and construction (2012)* specifies appropriate fencing; see figure 1 below.



Figure 1. Protective fence specification

For light access works within the CEZ the installation of suitable ground protection in the form of scaffold boards, woodchip mulch or specialist ground protection mats/plates may be acceptable.

All weather notices will be erected on the fence with words such as: "Tree Protection Fence — Keep Out". When the fencing has been erected, the construction work can commence. The fencing will be inspected on a regular basis during the duration of the construction process and shall remain in place until heavy building and landscaping work has finished and its removal is authorised by a qualified arborist.

Trench digging or other excavation works for services etc. will not be permitted in the CEZ unless approved and supervised by a qualified arborist using methods outlined in BS5837: *Trees in relation to design, demolition and construction (2012)*.

Care will be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious damage to them and might make their safe retention impossible.

Materials, which can contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, will not be discharged within 10 m of a tree stem.

Fires will not be lit in a position where their flames can extend to within 5 m of foliage, branches or trunk. This will depend on the size of the fire and the wind direction.

Notice boards, wires and such like will not be attached to any trees. Site offices, materials storage and contractor parking will all be outside the CEZ.

Tree Survey Schedule
 Carraig Glas Site, Stradbally, Co. Laois
 November 2019

| No. | Species | Age | Ht m | Dbh mm | St | Cr | N | S | E | W | ERC | Phys Cond | Structural Condition/Comments | Preliminary Recommendations | RPA m | Area m2 | Cat |
|---------------|----------------------------------|-----|---------|-----------|----|-----|-----|-----|-----|-----|-----|--------------|--|---|----------|------------|-----|
| T18 | Pinus sylvestris (Scots Pine) | M | 15 | 800 | 1 | 2 | 7.5 | 4 | 4.5 | 5.5 | 20+ | Good | Fair. Medium sized Pine tree of reasonable form. Historic loss of limb from 6m on south side, plus some smaller broken branches in crown. Thick Ivy on tree stem, some Elm suckering around stem base. Scattered minor deadwood in crown. Possible root damage from works around tree as garden, fence and compacted gravel surfacing developed nearby. | Crown clean to remove broken or larger dead branches and branch stubs. Decompact rootzone and mulch. | 9.6 | 290 | B2 |
| T19 | Pinus nigra (Austrian Pine) | M | 18.5 | 1100 | 1 | 3 | 6.5 | 7 | 8 | 6.5 | 10+ | Good | Fair/Poor. Largest tree in linear group. Good vitality with full crown and no obvious dieback or disease. Main stem forks into two secondary stems at 2-3m with reaction growth/swelling evident on both sides (north and south) of stem. Indications of a crack/flaw below the compression fork on the north side with signs of wound wood production on either side of crack. Several other potentially weak unions in crown. Ivy growth on tree stem. Possible root damage from works around tree as garden and fence constructed nearby. | Crown clean and sever Ivy. Decompact rootzone and mulch. Review union at 2-3m and consider installation of bracing system if tree retained. Tree not suited to retention within high occupancy development. | 13.2 | 547 | C2 |
| T20 | Pinus sylvestris (Scots Pine) | EM | 12.5 | 600 | 1 | 3 | 3.5 | 2 | 4.5 | 5 | 10+ | Fair | Fair. Smaller Pine somewhat suppressed by neighbouring tree. Poor form and unbalanced crown shape. Tree vitality appears fairly good. Slightly swollen lower stem and wood decay evident in old bark wound on south side at 2.5m. Some deadwood in crown. Possible root damage from works around tree as garden and fence constructed nearby. | Crown clean to remove deadwood. Decompact rootzone and mulch. Monitor tree condition. | 7.2 | 163 | C2 |
| T21 | Pinus sylvestris (Scots Pine) | EM | 12 | 565 | 1 | 2.5 | 5 | 5.5 | 5 | 3.5 | 10+ | Fair | Fair. Smaller tree with a main stem that forks into two at 4m; union appears stable. Somewhat unbalanced crown shape. Minor deadwood and some minor dieback of fine branching in crown. Possible root damage from works around tree as garden and fence constructed nearby. | Crown clean to remove deadwood. Decompact rootzone and mulch. Monitor tree condition. | 6.78 | 144 | C2 |
| T22 | Pinus sylvestris (Scots Pine) | EM | 14 | 600 | 1 | 5 | 4 | 3 | 4 | 5 | 10 | Poor | Medium sized tree at south-western end of tree-line. Low vitality indicated by low bud/leaf density in upper crown giving a sparse appearance. Several broken branches in crown, with large branch hanging from around 10m. Tree close to garden shed and fenceline and likely to have sustained some root damage from the adjacent works. | Crown clean to remove deadwood. Decompact rootzone and mulch. Monitor tree condition. | 7.2 | 163 | C2 |
| T23 no tag | Corylus avellana (Hazel) | M | 4.5 | 250 | 1 | 0 | 3 | 3 | 3 | 3 | 10+ | Fair | Fair. Multi-stem coppice stool. Heavily overgrown with brambles etc. | Clear brambles. | 3 | 28.3 | C2 |

Tree Survey Schedule
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November 2019

| No. | Species | Age | Ht m | Dbh mm | St | Cr | N | S | E | W | ERC | Phys Cond | Structural Condition/Comments | Preliminary Recommendations | RPA m | Area m2 | Cat |
|---------------|--|-----|---------|-----------|----|----|-----|-----|-----|-----|-----|--------------|---|---|----------|------------|-----|
| T24 no tag | Crataegus monogyna (Hawthorn) | M | 4.5 | 200 | 1 | 0 | 2.5 | 2.5 | 2.5 | 2.5 | 10+ | Fair | Fair. Smaller sized tree/bush. Multiple stems below 1.5m. Heavily overgrown with brambles. | Cut back brambles etc. | 2.4 | 18.1 | C2 |
| T25 no tag | Acer pseudoplatanus (Sycamore) | SM | 7 | 424 | 2 | 0 | 3 | 3 | 3 | 3 | 10+ | Fair | Fair. Multi-stem coppice stool at northern end of hedge H6. Limited value. | No urgent works needed. | 5.09 | 81.4 | C2 |
| T26 no tag | Acer pseudoplatanus (Sycamore) | SM | 7 | 200 | 4 | 0 | 3 | 3 | 3 | 3 | 10+ | Fair | Fair. Multi-stem coppice stool at southern end of hedge H6. Limited value. | No urgent works needed. | 2.4 | 18.1 | C2 |
| T27 no tag | X Cupressocyparis leylandii (Leyland Cypress) | M | 9 | 400 | 1 | 1 | 4 | 4 | 4 | 4 | 10+ | Fair | Fair. Two Cypress trees outside the site boundary fence. Limited arboricultural value. | No urgent works needed. | 4.8 | 72.4 | C2 |
| T28 no tag | Chamaecyparis lawsoniana (Lawson Cypress) | EM | 9 | 300 | 1 | 0 | 2 | 2 | 2 | 2 | 10+ | Good | Fair/Poor. Conifer in neighbouring property. Compression fork on main stem and some potentially weak unions in crown structure. | No urgent works needed. | 3.6 | 40.7 | C2 |
| H1 | Crataegus monogyna (Hawthorn) Fraxinus excelsior (Ash) Malus (Apple) Prunus spinosa (Blackthorn) Sambucus nigra (Elder) Ulmus glabra (Wych Elm) | EM | 5 | 200 | 1 | 0 | 3 | 3 | 3 | 3 | 10+ | Fair | Fair/Poor. Old farm hedge, now in poor condition due to lack of maintenance and disease. Suckering and other natural regeneration in encroaching out into unmanaged field. Numerous young Elm stems now dying of Dutch Elm Disease. | Coppice weaker/selected stems. Cut back into shape and remove suckering in field. | 2.4 | 18.1 | C2 |
| H2 | Crataegus monogyna (Hawthorn) Prunus spinosa (Blackthorn) Sambucus nigra (Elder) Corylus avellana (Hazel) | EM | 4 | 200 | 1 | 0 | 2 | 2 | 2 | 2 | 10+ | Fair | Fair/Poor. Remnant section of old farm hedge, now in poor condition due to lack of maintenance and disease. Heavily overgrown with creepers, brambles etc. | Coppice weaker/selected stems. Cut back undergrowth. Infill gaps with new planting. | 2.4 | 18.1 | C2 |
| H3 | Ligustrum spp. (Privet) | M | 2 | <100 | 1 | 0 | 1 | 1 | 1 | 1 | 10+ | Fair | Fair. Good shape/form. Managed hedge along garden boundary. | Trim periodically to maintain size and shape. | 1.2 | 4.52 | C2 |

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| No. | Species | Age | Ht m | Dbh mm | St | Cr | N | S | E | W | ERC | Phys Cond | Structural Condition/Comments | Preliminary Recommendations | RPA m | Area m ² | Cat |
|-----|---|-----|---------|-----------|----|----|-----|-----|-----|-----|-----|--------------|--|---|----------|------------------------|-----|
| H4 | Thuja plicata (Western Red Cedar) | SM | 7 | 250 | 1 | 0 | 2.5 | 2.5 | 2.5 | 2.5 | 10+ | Fair | Fair. Short section of hedge in private garden outside site boundary. No recent management. | No urgent works needed. | 3 | 28.3 | C2 |
| H5 | Betula pendula (Silver Birch) Acer platanoides (Norway Maple) Ilex aquifolium (Holly) | SM | 4 | 100 | 1 | 0 | 1 | 1 | 1 | 1 | 10+ | Fair | Fair. Linear planting just outside site boundary fence with Holly hedge 1-2m tall. Also including a number of taller Maples and one Birch 150mm dbh. | No urgent works needed. | 1.2 | 4.52 | C2 |
| H6 | Crataegus monogyna (Hawthorn) Fraxinus excelsior (Ash) Prunus spinosa (Blackthorn) Sambucus nigra (Elder) Ulmus glabra (Wych Elm) Acer pseudoplatanus (Sycamore) | SM | 5 | 200 | 1 | 0 | 2 | 2 | 2 | 2 | 10 | Fair/Poor | Fair/Poor. Remnant hedge along side of access track, now in poor condition due to lack of maintenance and disease. Some young Elm suffering from Dutch Elm Disease. | Coppice weaker/selected stems to form basis of manageable hedge. | 2.4 | 18.1 | C2 |
| H7 | X Cupressocyparis leylandii (Leyland Cypress) | SM | 3 | 100 | 1 | 0 | 2 | 2 | 2 | 2 | 10+ | Fair/Poor | Fair. Length of Cypress hedge along site boundary. Hedge height has been controlled, however branch spread has been left unchecked. Some dead individuals. | Prune/clip back into shape. | 1.2 | 4.52 | C2 |
| H8 | Ligustrum spp. (Privet) | M | 2 | <100 | 1 | 0 | 1 | 1 | 1 | 1 | 10+ | Fair | Fair. Section of overgrown privet hedge, subject to competition from scrub growth as site left unmanaged. | Prune/clip back into shape. Clear scrub. | 1.2 | 4.52 | C2 |
| H9 | Ligustrum spp. (Privet) | M | 2 | <100 | 1 | 0 | 1 | 1 | 1 | 1 | 10+ | Fair | Fair. Short section of Privet hedge outside boundary fence. | Prune/clip back into shape. | 1.2 | 4.52 | C2 |
| G1 | Quercus robur (Common Oak) Acer pseudoplatanus (Sycamore) Sorbus aucuparia (Rowan) Malus (Apple) | SM | 4 | 150 | 1 | 0 | 1.5 | 1.5 | 1.5 | 1.5 | 10+ | Fair | Fair. Young trees established within rough grass land across the abandoned garden. Trees are still relatively small but are in mostly fair condition and have potential to develop. Mostly Oak, with one poorly structured Sycamore. | Clear competing undergrowth around the individual trees. Remove the poorly structured Sycamore. | 1.8 | 10.2 | C2 |

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| No. | Species | Age | Ht m | Dbh mm | St | Cr | N | S | E | W | ERC | Phys Cond | Structural Condition/Comments | Preliminary Recommendations | RPA m | Area m ² | Cat |
|-----|---|-----|---------|-----------|----|----|-----|-----|-----|-----|-----|--------------|--|--|----------|------------------------|-----|
| G2 | Prunus spinosa (Blackthorn) Salix caprea (Goat Willow) | Y | 3 | 100 | 1 | 0 | 1 | 1 | 1 | 1 | 10+ | Fair | Fair. Dense natural regeneration of Blackthorn suckering along with some young Willow saplings spreading out into abandoned garden from boundary area. | No urgent works needed. | 1.2 | 4.52 | C2 |
| G3 | Fagus sylvatica (Beech) | SM | 10 | 250 | 1 | 1 | 2.5 | 2.5 | 2.5 | 2.5 | 10+ | Fair | Fair. Short linear group of young Beech trees; probably the result of a section of Beech hedge being left uncut. | No urgent works needed. | 3 | 28.3 | C2 |
| G4 | Salix caprea (Goat Willow) | Y | 3.5 | 100 | 1 | 0 | 1.5 | 1.5 | 1.5 | 1.5 | 10+ | Fair | Fair. Naturally regenerated Willow scrub becoming established as land has been left unmanaged. Limited value. | No urgent works needed. | 1.2 | 4.52 | C2 |
| G5 | X Cupressocyparis leylandii (Leyland Cypress) | EM | 15 | 300 | 1 | 2 | 3.5 | 3.5 | 3.5 | 3.5 | 10+ | Fair | Fair/Poor. Linear planting of Cypress around the perimeter of neighbouring garden. Trees now quite sizeable and prone to breakage following previous topping at 3m or so. Some potentially weak unions in crown structure. Some broken branches in crown. Some branch spread out over boundary line into site (3-4m). Trees becoming sparse in the lower 2-3m, limiting the screening effect. A short section of trees in the corner area have been felled or severely cut back. | Target prune broken/damaged branches. Prune to reduce extended branches. | 3.6 | 40.7 | C2 |