

**Arboricultural Report
Proposed Development at
Dunshaughlin West / Phase 2 SHD
Co Meath**

September 2020

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Associated Drawings

This report must be read in conjunction with the drawings noted below

<u>Drawing Title</u>	<u>Drawing Subject</u>
1) Dunshaughlin Tree Constraints Plan	Tree Constraints Plan A plan depicting the predevelopment location, size, calculated constraints and simplified tree quality category system
2) Dunshaughlin Tree Impacts Plan	Tree Impacts Plan This plan represents the effects of the proposed development works on the above tree population and depicts trees to be retained and removed.
3) Dunshaughlin Tree Protection Plan	Tree Protection Plan This plan depicts the nature, location and extent of tree protection measures required to provide for sustainable tree retention.

Introduction

This report was commissioned by-

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Report Brief

An Arboricultural report has been requested in respect of the proposed development. As “BS5837: 2012 Trees in Relation to Design, Demolition and Construction – Recommendations” is the accepted frameworks for such reports, then its composition, inclusions and recommendations have been followed as a general basis for such reporting.

Report Context

This report comprises an Arboricultural review of the proposed development project. This includes an assessment of the sites existing tree population within its current context, as well as an assessment of their potential for sustainable retention in the post-development scenario and the likely effects and repercussions of the development and construction process upon those trees. It also provides information regarding the necessary tree protection and the avoidance of damage to trees during the construction process, necessary to achieve sustainable tree retention.

This assessment summarises the Arborists findings and recommendations, arrived at after reviewing the proposed project details as provided, and after an evaluation of trees as defined and described in the tree survey at “Appendix 2”. This report also includes a preliminary “Arboricultural Method Statement” at “Appendix 1” as well as a Tree Protection Plan that illustrates the requisite conservation and protection methodologies necessary to maintain tree sustainability. This report is not intended as a critique of the proposed development but is an impartial assessment of the development implications relating to the sustainable retention of trees, whether that be any, some or all trees. This report is for planning purposes only and may be deficient for construction phase use.

Report Limitations

This report relates the Arborists interpretation of information provided to him before the report compilation and gained by him during the undertaking of the site review and tree survey. The site review data is subject to the limitations as set out under “Inspection and Evaluation Limitations and Disclaimers” in “Appendix 2” of this report. The findings and recommendations made within this report are compiled, based upon the knowledge and expertise of the inspecting Arborist.

The “Implication Assessment” element of the report builds on assumptions and estimates, particularly in respect of how construction works might proceed on a day to day basis and appreciates the “design” stage of the project, as opposed to “detail design” or “construction” detail.

Many elements of the “Arboricultural Method Statement” are deliberately broad and generic. They will require review, amendment and consolidation at the construction stage, for example in respect of the size and nature of the equipment, plant and machinery that might be utilised by any potential building contractor and any details as may change at “detail design” or “construction detail” stages.

Accordingly, this assessment is premised on all of its elements/recommendations, and the omission or alteration of any part of it, particularly the application of tree protection methodologies, can radically alter outcomes in respect of sustainable tree retention.

Report Summary

The site supports a broadly unremarkable vegetation profile, dominated by a highly variable thorn-based field hedge format that supports a variable emergent tree population.

Of the 45no. trees reviewed in the survey, all but two are Ash, and none are of a format or nature to suggest deliberate planting.

The dominance of Ash within the review population raises great concern about tree sustainability in light of the development of Chalara canker across the country. The progression of this disease strongly suggests that regardless of any development, many of these trees may be lost to the disease over the next few years.

Regardless of the above, the nature of the proposed development unavoidably requires that a high proportion of the site area undergo substantive modification, be that for the building of roads or buildings, or grading to account for engineering and drainage requirements. Accordingly, the minimum requirements for tree protection, hence any claim of sustainable tree retention can only be met in a small number of instances within the site area, typically centred about “Hedge 5”, as well as at positions near the southern and eastern boundaries.

Additionally, the ethos of creating a more urbanised “streetscape” has seen the loss of the vegetation currently associated with the sites eastern roadside boundary.

Site Description

The site in question is found approximately 1 kilometre west of Dunshaughlin village. The site includes an arbitrary parcel of agricultural land, including but not necessarily bounded by existing field boundaries. The site is however bounded along its western edge by the R125 link road.

The land format is agricultural, with various fields divided from one another by hedges, ditches or stream or various combinations of these.

Though undulating locally, the site is broadly flat. The site has undergone prior partial development, including the prior development of a detention pond.

The vegetation associated with the site relates primarily with its agricultural format and particularly, its field hedges and the emergent trees associated with these hedges. Note is made of relatively recent planting along the western edge of the site and associated with previous road development works.

Pre-Development Arboricultural Scenario

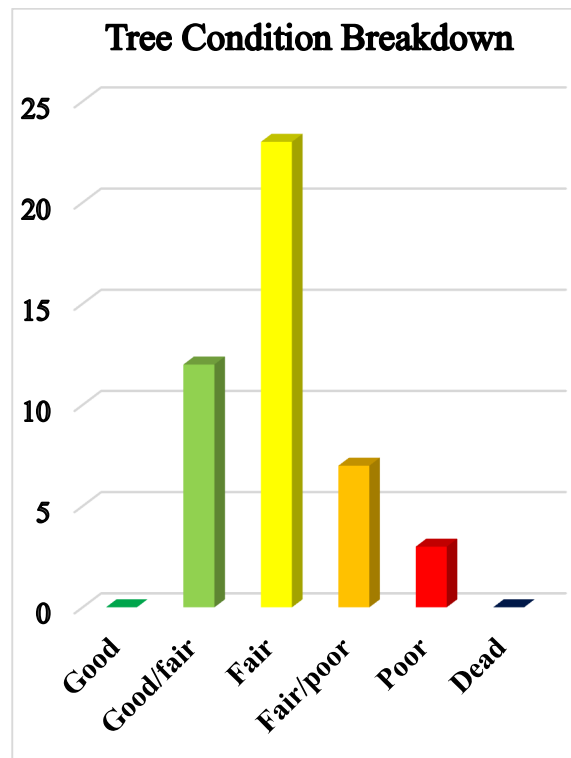
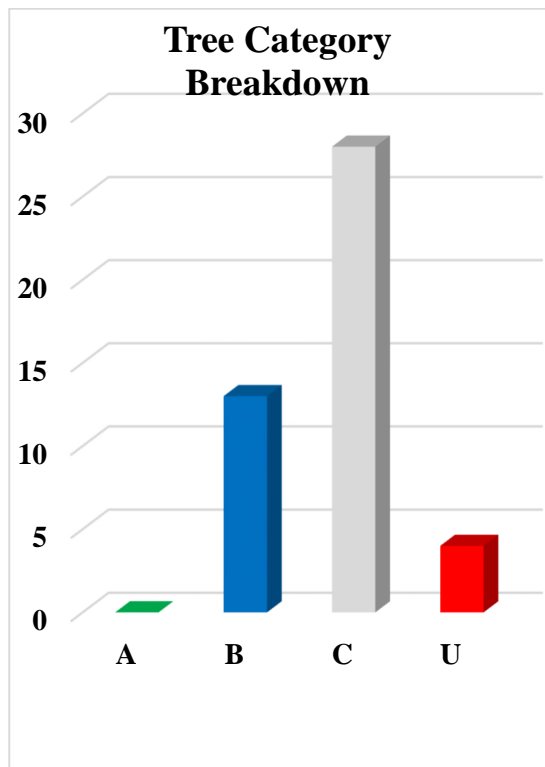
The tree survey has illustrated a common, agricultural format vegetation type, based on a planted Hawthorn hedge system, that resulting from minimal management in past decades, has seen the development of a notable tree population.

The site field are defined and divided by a combination of dug ditches or streams, most of which have one or both banks supporting a planted Hawthorn hedge. These hedges are highly variable across the site, but many are still continuous, but are often suppressed by an emergent tree population.

The trees will not have been planted but will have arisen from wind-blown seed and their development over time illustrates limited flailing/cutting of the hedge over recent decades.

The nature of the field formats are such that nearly all larger vegetation including hedges and trees arise from the banks of ditches or streams and so, their sustainability would be intrinsically linked to the conservation and preservation of the topography associated with such features.

Except for two Sycamore, the review population of trees is dominated by Ash. While many are still apparently healthy at present, some specimens exhibit symptoms that may be associated with Chalara canker attack. This disease is becoming commonplace across the country and it is likely that many of the site's Ash will succumb to the disease over the next few years.





As can be seen from the graphs above, the “tree category” and “tree condition” breakdowns would suggest a reasonable population quality, however it is fully expected that because of Chalara canker, these clasifications will change greatly over forthcoming years.

The “tree age” breakdown, illustrating the dominance of typically younger tree strongly suggests a cesation of hedge management in a period between the 1970s and 1990s.

Note should also be made that the current “life expectancy” breakdown is based on current health stauses and so may change dramatically in light of the Chalara canker issue.

Construction Works and Trees

Modern development works must be designed to comply with necessary development densities as well as to adhere to all modern standards regarding the provision of infrastructure and services. This unavoidable consumes site space

Modern construction activity and its unavoidable consumption of space contradicts many of the minimum requirements for safe and sustainable tree retention and so, where unavoidable conflicts occur, trees must be lost, but might be replaced.

In respect of sustainable tree retention, the survival and sustainability of the retained tree will be dependent on the conservation and non-disturbance of the ground and ground conditions the

tree is reliant upon. For the purposes of this report, such ground space is referred to as the “root protection area” (RPA) as defined by “BS5837: 2012 Trees in Relation to Design, Demolition and Construction – Recommendations”

Particularly, such conservation means that the soil structure, bulk density, soil strength, permeability and gas exchange rates are not altered. Therefore, many aspects of construction are contrary to tree conservation.

New buildings and particularly their foundations require the excavation of ground space. Similarly, roads also require excavation for foundations, but additionally, often require that the ground beneath is compacted to provide necessary bearing ratios.

Underground services require excavation and trenching, with the added complication that gravity led systems can often require the modification of ground levels to achieve necessary gradients and minimum overburdens, a factor that can often influence the finished levels of both the roads and building noted above.

Achieving the above typically involves the use of substantial plant, equipment and vehicles. The movement and activity of such machinery quickly denatures the ground, destroying the soil profile and structure, rendering them inhospitable and of no use to the supported trees.

Though beyond the scope of this report, consideration might be given the broader changes to the ground environment, for example relating to possible hydrological changes about the development area.

Some tree losses may be of limited concern because of ill-health or ongoing deterioration, where the potential for keeping such trees would be limited regardless of any site development. However, if located in areas of reduced sensitivity, some apparently poorer-quality trees, might offer some degree of limited retention, dependant on the retention context and the threat they may present.

Also, and where the sites current context will be changed in respect of occupation and use of space near trees, there may develop repercussions that require further scrutiny after initial site clearance and felling works. Some trees may require specific attention, including structural pruning improve their safety status within the changed context as well as to deal with issues of exposure and shelter loss.

Identification of Development Impacts

The expected tree impacts have been represented graphically on the tree impacts drawing “**Dunshaughlin Tree Impacts Plan**”, as well as within the narrative of this report. This drawing combines the tree constraints plan information with the development details including the architectural and engineering information below, thereby allowing for direct comparisons

to be made between the existing site context and the development proposals in respect of works, structures and site levels. In this drawing, trees denoted with “Broken Pink” crown outlines are to be removed and those denoted with “Continuous Green” crown outlines are to be retained.

Detail of the development proposals where gained from drawings provided by-

- O’Mahoney Pike Architects
- Watermnan Moylan Consulting Engineers
- Doyle + O’Troithigh Landscape Architects

The evaluation is primarily based on minimum protection ranges as extrapolated from the tree survey data in accordance with paragraphs 4.6.1, 4.6.2 and 4.6.3 of BS5837: 2012, and any element of the proposed development of works associated with, it that affects the defined protection areas. Any structure, action or apparent need to enter or otherwise disturb/convert the “root protection area” of a site tree has been considered likely to have a negative impact, with the potential to render a tree wholly unsuitable for retention, unsafe or unsustainable.

The broader assessment attempts to consider both direct and indirect implications, based on perceived construction requirements, as well as how a tree will likely interact with the development over time in respect of growth, hazard development, light blockage and other social concerns in respect of the changing context, including its effect on tree amenity value.

Project Works and Likely Impacts

Castlethorn Construction Unlimited Company intend to apply to An Bord Pleanála for Permission for a Strategic Housing Development at this site within the townlands of Readsland, Roestown and Knocks, Dunshaughlin, Co. Meath.

The proposed development consists of a residential-led development comprising 415no. residential units and 1no. childcare facility in buildings ranging from 2 to 5-storeys across two distinct sites. The breakdown of residential accommodation is as follows: -

- 415no. residential units (254no. houses, 55no. duplex and 106no. apartments) in buildings ranging in height from 2 to 5-storeys.
- 1no. childcare facility (c. 409 sq. m gross floor area).
- Provision of access from Drumree Road (Character Area 6) and Dunshaughlin Link Road – R125 (Character Areas 3 & 4) and provision of internal road network including pedestrian and cycle links.
- Provision of public open space including facilitation of planned pedestrian and cyclist connection along River Skane Greenway toward Dunshaughlin Town Centre.
- Provision of wastewater infrastructure including connections to main sewers on Drumree Road and to foul networks in permitted Phase 1 development and provision of SuDS infrastructure.
- All associated and ancillary site development and infrastructural works, hard and soft landscaping and boundary treatment works.

Considering the scope and scale of the proposed development, it is considered likely that many of the issues dealt with at “Construction Works and Trees” above, will apply at various points and particularly regarding-

- a) Direct conflict with proposed structures, thus requiring tree removal.
- b) A partial conflict where the “Root Protection Area” is encroached upon by works or ground amendments and cannot be preserved/protected in full.
- c) Environmental damage e.g. compaction, capping, sealing – changing the existing ground environment to one that can no longer support tree root function.
- d) Construction activity and the use of large plant and machinery that can denature the ground.
- e) A change in site context or a change in occupation or use that makes a tree unsuitable for retention.

Arboricultural Issues, Conflicts and Mitigations

Particular to this development, we note that there is a huge requirement for space consumption, as well as modification of site levels. Additionally, the ethos of creating a more urban context has resulted in losses towards the western roadside boundary.

This has created a scenario whereby there is little scope for sustainable vegetation retention within the main body of the site, this being restricted to part of Hedge 5 and tree nos.16 and 17, with all other retainable vegetation being limited to the southern and western edged of the site.

Ground level modifications initially raised some concerns in respect of trees near boundaries, however these issues were addressed by a combination of boundary treatment and ground contouring as discussed below.

Nonetheless, it is appreciated that the post-development and post-modification landscape will benefit greatly from extent of tree and shrub plantings, that are envisaged across the site, and will serve to greatly mitigate the primary losses. Details have been provided within the proposed landscape plans as provided by Doyle + O’Troithigh Landscape Architects.

Design Iterations and Arboricultural Considerations

From an early stage, the design team was made aware of the nature and extent of trees both upon and adjoining the site area. This was provided in the form of tree survey information and a tree constraints plan as appended to this report.

A number of design features were adopted into the scheme, intending to reduce likely impacts to trees. An example of this relates to the use of post and panel fencing as a boundary treatment in the northern site, in conjunction with landscape modifications to return raised development

levels to native ground levels near boundaries, thereby minimising effects and impacts to trees on neighbouring properties.

Tree Retention and Loss

Tree retention is costly in respect of available space and there is a substantial difference between an ability to physically retain a tree in situ and gaining any realistic expectation of it surviving into the future and remaining safe.

The sustainable retention of trees relates to the effective conservation and conservation of the environment upon which the trees are reliant. Particularly, continuity of ground and soil conditions are critical to maintaining tree health.

The proposed development has been designed in such a way as to comply with necessary development densities as well as to adhere to all modern standards regarding the provision of infrastructure and services. Where possible, this has been achieved whilst retaining trees.

The drawing “Dunshaughlin Tree Impacts Plan” comprises the tree survey drawings overlaid by the development drawings, thus providing a graphic representation of the tree related impacts, with those trees that will be removed, being denoted by pink dashed outlines.

As noted within the survey data, the review area supports a total of 57No. individual items, including individual 45No. trees and 13No. hedges.

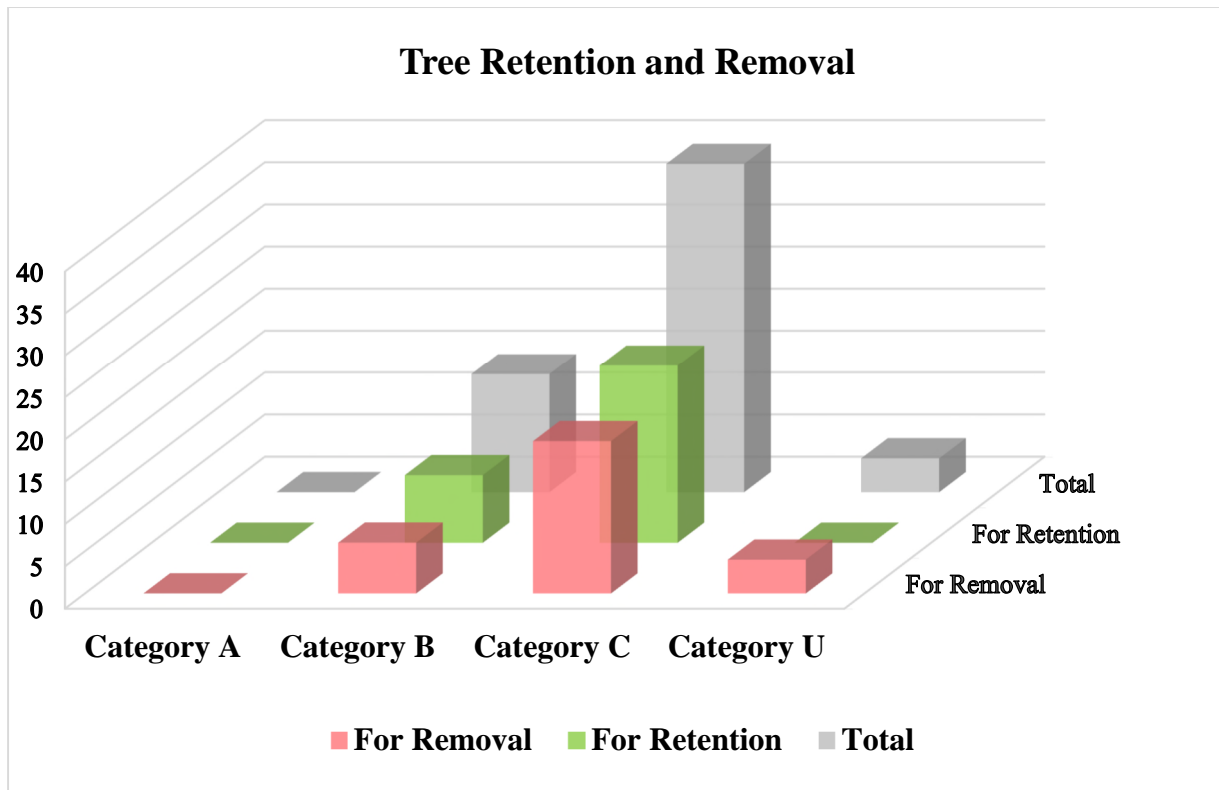
- No category “A” trees
- 13 No, category “B” trees and 1 No. “B” hedge
- 28 No. category “C” trees and 11 No. “C” hedges
- 4 No. category “U” trees

Normally, all category “U” trees will be removed (many require removal regardless of development).

This would include tree Nos. 1, 12, 24 and 38

Of the site’s “fair” quality, category “B” trees, the development works will require the removal of tree Nos.-

6, 7, 8, 14, 18 and 43 (6 items cumulative)



Of the site’s category “poor” quality “C” trees, the development works appears to require the removal of Nos.- 5, 9, 10, 11, 13, 15, 34, 44 and 45 (group) and 9 hedges (+part of 3 additional hedges) + part of Tree Group 1 (18 items cumulative)

The tree/hedge loss breakdown for the proposed developemnt will be-

- 4No. Category U trees
- 6No. Category B trees
- 9No. category C trees and 9+No. Hedges and part of a tree group (18No. items plus partial items)

Tree Protection within the Scope of a Development

The design and management recommendations as set out in “BS5837:2012” are considered as “best practice” regarding the selection, retention, protection and management of tree within the scope of new developments.

In respect of tree protection, whether vertical or horizontal, all must conform or equate to the recommendations of Section 6, BS5837: 2012, must be fit for purpose and commensurate with the nature of development and the expected day-to-day activities of the site works.

This report provides a “Preliminary Arboricultural Method Statement” at “Appendix 1” to this report, as well as the associated “Tree Protection Plan” drawing “Dunshaughlin Tree Protection Plan”.

In the drawing, the “Construction Exclusion Zone” is defined by an orange hatching with bold “Orange” lines representing the proposed location of the primary protective “Construction Exclusion Fencing”.

The above drawing provides only a representation of the protection locations and extents that must be located, positioned and erected under the guidance of the project Arborist and may require referral to a figured and dimensioned, “construction stage” version of the “Tree Protection Plan” drawing. All recommended protection measures will be installed before the commencement of any site works and must remain in situ (unless under the guidance of the site Arborist) until the completion of all site works.

Preliminary Management Recommendations

Provided in the tree survey table (Table 1) are “Preliminary Management Recommendations”. These recommendations relate to the trees as they existed at the time of the tree review. Therefore and in line with the changing context of the site, such recommendations may no longer apply. Examples include where the felling of trees or other specific works are necessary to facilitate development requirements.

Many of the concerns raised in the tree survey relate to evidence suggesting mechanical failure to trees, ill-health or contextual issues that may continue to a point where a trees suitability for retention may change over time.

Additionally, any development related loss of trees may result in exposure and shelter loss issues in respect of those trees that will remain. Therefore all retained trees must be reviewed immediately after the primary site clearance works with a view to updating and amending the “preliminary management recommendations” and intending to address such issues as may arise. On an ongoing basis, all retained trees must be reviewed regularly so that early intervention and action is applied promptly.

Appendix 1 - Arboricultural Method Statement (and Tree Protection Plan)

Method Statement Outline

This method statement intends to provide guidance in respect of tree protection on a development site. This is a broad and prescriptive method statement, intended to provide general advice and guidance in respect of trees and tree protection on a typical development site, dealing with issues known at planning stage.

Any inability to conform to the recommendations of this method statement or the associated tree protection plan could readily change the sustainability of trees and/or their suitability for retention.

This method statement addresses, amongst others, two primary issues, those being –

- a) The avoidance/prevention of physical damage to a tree to be retained.
- b) The avoidance/prevention of physical damage or disturbance to the ground/earth upon which a tree is reliant.

Drawings

This Arboricultural Method Statement must be read with the associated “Tree Protection Plan” drawing, “Dunshaughlin Tree Protection Plan”. The “planning stage” drawing must be updated for “Construction” stage purposes, to include tree protection ranges/dimensions as defined for that tree within the tree survey table or unless otherwise defined by the project Arborist.

Method Statement Use

This Method Statement should be used under the direct guidance of the project Arborist. As limited “construction stage” detail was available at planning stage, it may require amendment and adjustment to address construction stage issues.

Amendments and Modifications to Tree Protection Plan

Any amendment to the tree protection plan must be agreed with the project Arborist, including the adoption of specific methodologies and/or procedures and structures for access into/use of certain parts of the above defined “Construction Exclusion Zones”. Such procedures, including the provision of suitable ground protection may allow for the relocation of the “Construction Exclusion Fencing” to provide access to and across the previously protected areas.

Works Related Impacts

In respect of any necessary and unavoidable structures/works required within or entry into the “RPA” zone, all efforts must be made to minimise impacts. Aerial issues may require “access facilitation pruning” or clearance pruning. Subterranean works that require excavation must, by design, location and action, minimise impacts to trees.

Tree Works Specification Updates

Many of the tree management recommendations stipulated within the “Preliminary Management Recommendation” section of the primary tree survey, relate to the “as was” site scenario. Because of changing site contexts, these may no longer apply and may require modification to account for the changes that the built project will cause.

General Method Statement

1.0) Overview and Implementation

- 1.1 **Prior to any site works, this method statement will be addressed and discussed by all member of the construction team management, prior to any site works or construction/demolition related works or access.**
- 1.2 The project Arborist or another suitably qualified person will oversee the application of all tree protection measures and any necessary modifications to this Method Statement (any issues as may have arisen in respect of planning conditions or details as may have changed between the design stage) to provide a basis upon which tree protection will be managed on the construction site.
- 1.3 Any situation that requires entry into the “root protection zones” of a tree intended for retention must be brought to the attention of the Project Arborist regarding the adoption/amendment of suitable tree protection measures.
- 1.4 As unforeseen tree losses may compromise project planning permissions, it is imperative that issues relating to tree protection and/or tree damage be brought to the immediate attention of the project Arborist for review and possible discussion with the relevant planning authority.

2.0) Works Sequence

- 2.1 No construction related works or mechanised site access will occur until the agreed level of tree protection, in accordance with the “Tree Protection Plan”, is completed.
- 2.2 The only exception to the above will relate to the undertaking of tree works and felling as defined in the Arboricultural report and/or grant of permission.
- 2.3 On completion of tree felling/site clearance works, the tree management plan will be reviewed, accounting for (if necessary) the updating of the “preliminary Management Recommendations” stipulated in the original Tree Survey.
- 2.4 Any revised pruning/cutting works will be agreed with the local authority and applied at the earliest possible opportunity.
- 2.5 After the completion of primary tree clearance, but prior to the commencement of construction works, all “Construction Exclusion” and “Protective” fencing must be erected and “signed-off” as complete, by the Project Arborist.
- 2.6 Only on completion of all construction works will any/all tree protective measures be removed, and only then in a manner, that does not compromise the “Protection Zones”. Such works must be agreed and overseen by Project Arborist.
- 2.7 At construction works completion stage, all retained trees will be reviewed regarding their condition and longer-term management recommendations and regarding site hand-over.

3.0) Tree Protection

- 3.1 All tree protection measures and location must be agreed, overseen and verified by the Project Arborist prior to works commencement.
- 3.2 All construction, works or access areas must be enclosed and defined by protective fencing, this comprising the “Construction Exclusion Zone” based upon drawings “Dunshaughlin Tree Protection Plan” (Construction Stage version).
- 3.3 Unless specifically stipulated by the project Arborist, the default minimum range of the protective fencing from a tree is the range stipulated for that tree within the “RPA” (root protection area) column of the original survey.
- 3.4 Such a fence must be fit for purpose and commensurate with the nature of activity expected upon the site and should comply with “Section 6.2” of BS5837: 2012.
- 3.5 The fence should be affixed with notification signs such as “TREE PROTECTION AREA - KEEP OUT”
- 3.6 Structures such as “lock-ups”, offices or other temporary site building, not requiring excavation or underground ducting, might be positioned such as to comprise part of the “Construction Exclusion Zone” fencing. All remaining fencing must be continuous with such features and effectively prevents access to protected ground.
- 3.7 If entry into the “RPA” (Root Protection Area) zones becomes unavoidable, ground protection systems agreed with the project Arborist, will be utilised.
- 3.8 No amendment, alteration, relocation or removal of the tree protection fencing shall occur without prior liaison and approval from the Project Arborist.

4.0) Provision of Ground Protection (If Required)

- 4.1 No vehicular/mechanised access whatsoever will be allowed onto unprotected “Construction Exclusion Area” ground.
- 4.2 Ground protection can comprise the use of proprietary materials/structures (installed to manufacturer’s specifications and recommendations) or procedures that avoid ground damage/disturbance/compaction, or the use of procedures that avoid such effects e.g. manual/pedestrian installation procedures.
- 4.3 Any system utilised must effectively spread load-weight, avoid compaction, maintain drainage/percolation/aeration and be installed in a manner that avoids these issues.
- 4.4 Newly provided access will be strictly limited to the area of the new protection structure.
- 4.6 Protection installation will require a progressive laying down of ground protection, with previously laid material providing vehicular access to the next zone will be accepted as an approved methodology.

5.0) Works within “RPA” Zone

- 5.1 Only works and construction practices, agreed with the Project Arborist prior to commencement, will be allowed in the “RPA” area.
- 5.2 All works will be undertaken under the supervision and guidance of the Project Arborist who will have the authority to stop works if activities are considered such as to have the potential to damage trees.
- 5.3 Preference must be given to manual labour and techniques within the fenced “RPA” zone.

- 5.4 On completion of the required works, the area will be inspected by the Project Arborist regarding the reinstatement of the original protection and the relocation of the protective fencing to a position relating to the original “RPA” area.

6.0) Service Installation

- 6.1 The “Project Arborist” must be consulted for advice and procedural recommendations, in respect of any installation of services within or requiring entry into the “Root Protection Area” of any tree intended for retention.
- 6.2 Any such works found to be unavoidable, must be undertaken with special care, incorporating the recommendations of both “BS5837: 2012 and the National joint utility groups, guidelines for the planning, installation and maintenance of utility services in proximity to trees (NJUG 10)
- 6.3 Preference must be given to trench-less techniques including Mole-piping, Directional-drilling manual hydro-trenching (high-pressure water), “Air-Spade” or broken-trench techniques.

7.0) Tree Management and Works

- 7.1 All tree works should be undertaken under the guidance of the project Arborist
- 7.2 The primary site clearance and felling should be undertaken at the earliest stage of the overall development works, to enable the re-assessment of all ostensibly retainable trees and the updating of the “Preliminary Management Recommendations” to account for context changes and construction access and/or other issues coming to light.
- 7.3 All Tree Works must adopt safe work procedures and must be undertaken by staff suitably trained for the purpose at hand and compliant with all legislative, safety and insurance requirements.
- 7.5 All additional works will be agreed with the local authority and/or other stakeholders and applied at the earliest possible opportunity.
- 7.6 On completion of site works, the retained tree population will be reviewed and re-evaluated regarding its ongoing condition and the likely requirements of any ongoing or future monitoring or management needs.

8.0) Demolition

- 8.1 All demolition procedures must be agreed and overseen by the Project Arborist or other suitably skilled staff to monitor for damage and to protect exposed roots/cut-trim exposed roots/oversee backfilling of exposed roots.
- 8.2 Where access into unprotected “RPA” zone becomes unavoidable then suitable ground protection, provided in accordance with an engineer’s direction and agreed with the Project Arborist will be installed.
- 8.3 Care will be taken to avoid damage to soil volumes beneath and adjoining demolished structures that may contain tree root material.
- 8.4 Whilst existing foundations/structures may provide temporary protected access to areas within the “RPA” zone, preference must be given to the location of demolition plant outside of the “RPA” zone.
- 8.5 Where tree(s) exist near a structure to be demolished then the demolition should be undertaken inwards within the footprint of the existing building (top down, pull back).

- 8.6 Underground structures (services etc.) within the “RPA” zone should be reviewed with regards to decommissioning and retention in situ in the interest of avoiding tree damage.
- 8.7 Preference should be given to the retention existing sub-bases where hard surfaces are removed, particularly if the hard surface is to be replaced.

9.0) Ancillary Precautions

- 9.1 The methodologies as set out in this document apply to all undertakers of work upon or adjoining the site as may require access to the “Construction Exclusion Zone” or the “RPA” area of any tree.
- 9.2 This document will be disseminated to all persons requiring access to the work site, with all persons undertaking works either before or after the principal development (site investigation works, Landscape Contractors) are subject to the above requirements
- 9.3 Works outside the “Construction Exclusion Zone” must be controlled to create no potential secondary hazard to tree health.
- 9.4 Large loads accessing the site must be reviewed regarding clearance and potential tree damage.
- 9.5 Care must be taken regarding materials that may contaminate the ground. No concrete mixings, diesel or fuel, washings or any other liquid material may be discharged within 10 metres of a tree.
- 9.6 No fires can be lit within 5 metres of any tree canopy extent.
- 9.7 No tree will be used for support regarding cables, signs etc.
- 9.8 The trees should be reviewed on a regular basis throughout the development process and on completion. At that time, additional recommendations regarding tree management may be required.
- 9.9 Any issue that has the potential to affect site trees must be brought to the attention of the Project Arborist for review and comment.
- 9.10 Any circumstances that become known whilst the development project is ongoing that either involves trees or access to/works within the construction exclusion zone must be brought to the attention of the Project Arborist for evaluation and advice regarding approach and methodology.
- 9.11 It is possible that liaison/agreement will be required with the Local Planning Authority regarding compliance with, as well as the verification of the required tree protection measures.

Appendix 2 - Tree Survey

Nature of Survey

The criteria put forward in “BS5837:2012 – Trees in Relation to Design, Demolition and Construction – Recommendations” have provided a basis for this report.

The data collected has been represented in table form as “Table 1” within “Appendix 1” to this report. This appendix includes a Survey Methodology, Survey Key, Survey Abbreviations, Condition Category Definitions and a brief resume of the typical application of Tree Protection measures as defined within the above standard and as relates to the “RPA” zones defined both within the survey table and on the “TCP” drawing.

The survey, its findings and management recommendations relate to the site and the conditions thereon at the time of the survey. It relates to a “do nothing” or “as is” scenario and intends to provide an impartial representation of the site’s tree population, regardless of any possible development works. It is likely that changes in site usage, development or other environmental changes will require an amendment of any tree’s potential retention status and its preliminary management recommendations, and in some instances, may require the re-classification of a tree’s suitability for retention.

Drawing References

The survey must be read with the “Tree Constraints Plan” drawing “Dunshaughlin Tree Constraints Plan” regarding the representation of tree positions, crown forms, “RPA” extents and colour reference to category systems. Trees omitted from the supplied drawing may be “sketched in” to “Dunshaughlin Tree Constraints Plan”. Any such trees should be located and plotted by professional means to identify the constraints such trees have upon the site.

A green coloured outline represents each tree crown. It is scaled to represent the north, east, south and west crown radii as denoted in the survey table. Each tree (categories A-green, B-blue and C-grey only) have been apportioned a “Root Protection Area” (RPA see below) denoted as a dashed orange circle.

The development of a Tree Constraints Plan (TCP) provides a design tool regarding tree retention. Such a plan combines the topographical land survey drawing with additional information as provided by the tree survey. The aspects of the tree’s existence recorded on the “TCP” are, firstly, the tree canopies, represented by the four cardinal compass point radii (Sp: R in survey Table 1). Secondly, and following paragraphs 4.6.1, 4.6.2 and 4.6.3 of BS5837: 2012, we represent each tree’s “Root Protection Area” (RPA). For design purposes, it approximates the position of the tree protection fencing to be erected before the commencement of any site works, thus excluding all site activities other than those dealt with by way of the “Arboricultural Implication Assessment” and “Arboricultural Method Statement”.

The “Tree Constraints Plan” (TCP) depicts the extent and location of constraints, placed upon the site by the trees. The “TCP” represents both the true canopy form (north, east, south and west radii) but also the “RPA” as defined above. These constraints are provided to advise regarding the design and layout of a proposed development.

Survey Intent and Context

This document intends to highlight the extent and nature of the material of Arboricultural interest on the site in question.

Survey Data Collection and Methodology

The Survey

The original survey was carried out in March of 2020. This survey portion of the overall report is not an Implication Assessment though but provided some of the basic information regarding its compilation. The compilation of this survey was guided by the recommendations of BS 5837: 2012. This survey typically includes trees of stem diameters exceeding 150mm at approximately 1.50 metres from ground level. The survey relates to current site conditions, setting and context.

Each tree in the survey has a consecutive number that relates directly to the survey text. Measurements are metric and defined in metres and millimetres. All trees referred to in the survey text have been measured to provide information regarding canopy height and canopy spread (north, east, south and west radii), level of canopy base and stem diameter at 1.50 meters from ground level. The dimensions provided are intended to provide a reasonable representation of a tree's size and form. While efforts are made to maintain accuracy, visual obstruction, especially regarding trees in groups, requires that some tree dimensions are estimated only.

Inspection and Evaluation Limitations and Disclaimers

The information set out in this report relates to the review of a tree population on the site in question. As such, the information provided is based on a general review of trees and does not constitute a detailed review of any one of the individual specimens. Such an evaluation (tree report) would require the gathering of substantially more information than that dealt with in this survey.

The survey is not a safety assessment and the parameters reviewed within this survey context would be substantially deficient in extent to provide for a reliable safety assessment. The survey is intended to provide a general and qualitative review to assist in gauging the suitability of an individual tree for retention within a development context. All trees are subject to impromptu failure and damage. The assessment of risk as may be presented by a tree requires the review of numerous factors more than those noted herein and as such, remains outside the scope of this document and any attempt to use the information herein for such purposes will render the information invalid.

A competent and experienced Arborist has completed all inspection and tree assessment. The inspection involves visual assessment only, which has been carried out from ground level. No below ground, internal, invasive or aerial (climbing) inspection has been carried out.

Trees are living organisms whose health, condition and safety can change rapidly. All trees should be re-evaluated regarding their condition on an annual basis or after substantial trauma such a storm event, other damage or injury. The results and recommendations of this survey will require review and reassessment after one year from the date of execution. This survey does not constitute a review of tree or site safety. Attempts to use the contents herein for such purposes will render the contents invalid.

Throughout the undertaking of the survey, several factors acted against the inspectors, contriving to reduce the accuracy of the survey.

Seasonality

The original survey was carried out during the spring periods. Some of the signs, typically symptomatic of ill-health or defect within a tree, may not have been available to view at the time of the survey or may have been obscured by seasonality related factors. Some of the fruiting bodies of various fungi, parasitic upon or causing decay or disease in trees, may have been out of season and unavailable to view. This survey can only comment upon symptoms of ill-health or defects visible at the time of the inspection.

Survey Key

Species	Refers to the specific tree species
Age	Referred to in generalized categories including: -
Y - Young	A young and typically small tree specimen.
S/M - Semi-Mature	A young tree, having attained dimensions that allow it to be regarded independently of its neighbours but typically, would be less than 50% of its ultimate size.
E/M - Early-Mature	A specimen, typically 50% - 100% of ultimate dimensions but with substantial capacity for mass and dimensional increase remaining.
M - Mature	A specimen of dimensions typical of a full-grown specimen of its species. Future growth would tend to be extremely slow with little if any dimensional increase.
O/M - Over-Mature	An old specimen of a species having already attained or exceeded its naturally expected longevity.
V - Veteran	An extremely old, veteran specimen of a species, usually of low vigour and typically subject to rapid decline and deterioration or of very limited future longevity.
Tree Dimensions	All dimensions are in meters. See notes regarding limitation of accuracy.
Ht.	Tree Height
CH	Lowest canopy height
N, E, S, W	Tree Canopy Spread measured by radii at north, east, south and west
Dia.	Stem diameter at approx. 1.50m from ground level.
RPA	Root Protection Area, as a radius measured from the tree's stem centre.
Con	Physical Condition
G Good	A specimen of generally good form and health
G/F Good/Fair	
F Fair	A specimen with defects or ill health that can be either rectified or managed typically allowing for retention
F/P Fair/Poor	
P Poor	A specimen whom through defect, disease attack or reduced vigour has limited longevity or maybe un-safe

D	Dead	A dead tree
	Structural Condition	Information on structural form, defects, damage, injury or disease supported by the tree
	PMR – Preliminary Management Recommendations	Recommendation for Arboricultural actions or works considered necessary at the time of the inspection and relating to the existing site context and tree condition. Works considered as urgent will be noted.
	Retention Period	
	S – Short	Typically, 0 -10 years
	M – Medium	Typically, 10 -20 years
	L – Long	Typically, 20 – 40 years
	L+	Typically, more than 40 years
	Category System	The Category System is intended to quantify a tree regarding its Arboricultural value as well as a combination of its structural and physical health.
	Category U	Typically relates to trees that are dead, dying or dangerous. Such trees may present a threat or suffer from a defect or disease that is considered irremediable.
	Category A	A typically a good quality specimen, which is considered to make a substantial Arboricultural contribution
	Category B	Typically including trees regarded as being of moderate quality
	Category C	Typically including generally poor-quality trees that may be of only limited value.
		The above categories are further subdivided regarding the nature of their values or qualities.
	Sub-Category 1	Values such as species interest, species context, landscape design or prominent aspect.
	Sub-Category 2	Mainly cumulative landscape values such as woods, groups, avenues, lines.
	Sub-Category 3	Mainly cultural values such as conservation, commemorative or historical links.

Table 1 – Tree Data Table

No.	Species	Age	Con	Ht	CH	N	E	S	W	Stm	Dia	RPA	Structural condition	Pmr	Yrs	Cat
1	Ash (<i>Fraxinus excelsior</i>)	E/M	P	8.00	2.50	2.00	4.50	4.50	3.00	3	465	5.58	In a state of chronic decline with westernmost stem subject to extensive decay. Unsuitable for retention.	Remove.	N/A	U
2	Ash (<i>Fraxinus excelsior</i>)	E/M	G/F	9.00	2.00	3.50	4.50	4.50	4.50	1	407	4.89	Young and vigorous.		L	B2
3	Ash (<i>Fraxinus excelsior</i>)	E/M	F/P	7.50	2.00	3.00	3.50	3.00	2.50	1	392	4.70	Relatively young and still vigorous but southern side of stem has suffered substantial damage with much exposure of underlying timber that is now subject to decay. Suitable only for limited retention.		S	C2
4	Ash (<i>Fraxinus excelsior</i>)	M	F/P	11.00	1.50	2.50	4.50	4.50	4.00	1	525	6.30	Distorted and misshapen. Entire crown is obscured by dense ivy cover. Crown apex appears missing suggesting high likelihood of early life damage.	Cut ivy and review regarding suitability pretension.	S	C2
5	Ash (<i>Fraxinus excelsior</i>)	M	F	9.00	2.00	4.50	6.00	4.50	3.50	1	592	7.10	Squat suppressed and typically unbalanced to east. Supports extensive ivy cover.	Cut ivy and rereview.	M	C2
6	Ash (<i>Fraxinus excelsior</i>)	E/M	F	12.00	2.50	4.00	4.50	3.00	4.00	1	493	5.92	Young and apparently vigorous though supporting extensive ivy cover.	Cut ivy and rereview.	L	B2
7	Ash (<i>Fraxinus excelsior</i>)	E/M	G/F	12.00	1.75	3.00	4.50	3.00	4.50	1	385	4.62	Young and still vigorous, arising from ditch alignment. Supports extensive ivy cover but remains vigorous.		L	B2
8	Ash (<i>Fraxinus excelsior</i>)	E/M	G/F	13.00	2.25	5.00	6.00	4.00	5.00	2	592	7.10	Heavily divided from 0.50 m. Lower stem has suffered some bark damage. Tree appears vigorous but supports extensive ivy cover.	Cut ivy and rereview.	M	B2

No.	Species	Age	Con	Ht	CH	N	E	S	W	Stm	Dia	RPA	Structural condition	Pmr	Yrs	Cat
9	Ash (<i>Fraxinus excelsior</i>)	E/M	F/P	10.00	2.00	1.00	0.00	3.50	4.50	1	341	4.09	Heavily one-sided and unbalanced to south-east. Lower stem has suffered extensive bark damage and timber exposure on eastern side. Is of dubious sustainability.		S	C2
10	Ash (<i>Fraxinus excelsior</i>)	S/M	F/P	9.00	2.00	2.00	5.00	3.00	0.00	1	306	3.67	Distorted and having suffered extensive bark damage. Is of dubious sustainability.		S	C2
11	Ash (<i>Fraxinus excelsior</i>)	S/M	F/P	8.00	2.00	2.00	4.00	1.50	1.00	1	226	2.71	Distorted and unbalanced with major bark wound on principal stem.		S	C2
12	Ash (<i>Fraxinus excelsior</i>)	E/M	P	11.00	2.00	3.00	5.00	5.00	5.00	1	493	5.92	Slightly distorted and has been affected by chronic failure of upper middle crown. Unsuitable for retention.	Remove.	N/A	U
13	Ash (<i>Fraxinus excelsior</i>)	S/M	F/P	8.00	1.50	4.00	4.00	3.00	3.00	1	357	4.28	Distorted and twin stemmed		M	C2
14	Ash (<i>Fraxinus excelsior</i>)	E/M	G/F	13.00	2.00	5.50	5.00	4.50	6.00	1	678	8.14	Appears vigorous but much of crown is obscure by dense ivy cover.	Cut ivy and rereview.	L	B2
15	Ash (<i>Fraxinus excelsior</i>)	S/M	F	9.00	2.25	5.00	3.50	3.00	2.50	1	385	4.62	Multi-stemmed and distorted. Of dubious retention merit.		S	C2
16	Ash Group (<i>Fraxinus excelsior</i>)	E/M	F	9.00	2.00	4.00	4.00	0.00	3.00	1	328	3.93	Young and still vigorous but extensively damaged by bark stripping on northern side of stem.		S	C2
17	Ash (<i>Fraxinus excelsior</i>)	S/M	F	8.00	2.25	1.00	4.00	4.50	4.00	1	369	4.43	Young and vigorous but heavily one-sided being suppressed by near neighbour.		M	C2
18	Ash (<i>Fraxinus excelsior</i>)	E/M	G/F	13.00	2.00	5.00	4.50	5.00	5.00	1	548	6.57	Young and still vigorous. Potentially affected by compression fork development at 2.50 m. Arises from western side of substantial ditch	Review regularly.	M	B2

No.	Species	Age	Con	Ht	CH	N	E	S	W	Stm	Dia	RPA	Structural condition	Pmr	Yrs	Cat
19	Ash (<i>Fraxinus excelsior</i>)	E/M	G/F	13.00	2.50	5.00	3.00	3.00	4.50	3	420	5.04	Multi-stem from low level. Slightly distorted but remains vigorous. Arise from southern side of substantial ditch		M	C2
20	Ash (<i>Fraxinus excelsior</i>)	E/M	G/F	13.00	2.00	6.00	6.00	5.50	4.50	1	592	7.10	Multi-stemmed from low level. Appears broadly vigorous though much of crown is obscured by dense ivy cover. Arise from southern side of substantial ditch	Cut ivy and rereview.	M	C2
21	Ash (<i>Fraxinus excelsior</i>)	E/M	F	13.00	2.00	5.50	5.00	1.50	5.50	1	535	6.42	Young and still vigorous but supporting extensive ivy cover that partially obscures crown from view.	Cut ivy and review.	L	B2
22	Ash (<i>Fraxinus excelsior</i>)	S/M	G/F	11.00	4.00	3.00	3.50	4.00	3.00	1	325	3.90	Arising from hedge line on top of ditch embankment. Supports extensive ivy cover.		L	B2
23	Ash (<i>Fraxinus excelsior</i>)	S/M	G/F	11.00	3.00	1.00	2.50	3.50	2.50	1	318	3.82	Arising from hedge line on top of ditch embankment. Supports extensive ivy cover.		L	B2
24	Ash (<i>Fraxinus excelsior</i>)	E/M	P	10.00	3.00	4.50	1.00	1.00	2.50	1	293	3.51	Rapidly approaching death.	Remove.	N/A	U
25	Ash (<i>Fraxinus excelsior</i>)	S/M	F	10.00	3.00	1.50	3.00	3.00	2.00	1	258	3.09	Sadly distorted but maintaining reasonable vigour and vitality		L	B2
26	Ash (<i>Fraxinus excelsior</i>)	E/M	F	13.00	2.00	5.00	5.00	3.00	4.00	1	525	6.30	Slightly unbalanced but maintaining reasonable vigour and vitality.		L	B2
27	Ash Group (<i>Fraxinus excelsior</i>)	S/M	F	8.00	2.50	1.00	5.00	4.00	2.50	3	392	4.70	Multi-stemmed and arising as close-knit community. Distorted and unbalanced but maintaining reasonable vigour and vitality.	Review regularly.	M	C2
28	Ash (<i>Fraxinus excelsior</i>)	E/M	F	12.00	3.00	4.00	4.50	4.50	4.00	2	493	5.92	Twin stemmed from ground level. Appears be maintaining reasonable vigour and vitality.		M	C2

No.	Species	Age	Con	Ht	CH	N	E	S	W	Stm	Dia	RPA	Structural condition	Pmr	Yrs	Cat
29	Ash (<i>Fraxinus excelsior</i>)	M	F	12.00	3.00	4.50	2.50	1.50	3.00	1	325	3.90	Suppressed and one-sided, typically unbalanced to north. Appears vigorous.		M	C2
30	Ash (<i>Fraxinus excelsior</i>)	S/M	F	10.00	2.00	4.00	4.00	4.00	1.00	2	325	3.90	Distorted but remains vigorous. Supports extensive ivy cover.	Cut ivy.	M	C2
31	Ash Group (<i>Fraxinus excelsior</i>)	E/M	F	12.00	3.00	4.50	4.00	4.50	3.50	2	525	6.30	Distorted, twin stemmed and heavily obscured by dense ivy cover.	Cut ivy and rereview.	M	C2
32	Ash (<i>Fraxinus excelsior</i>)	S/M	F	9.00	3.00	3.00	3.00	3.50	2.50	1	261	3.13	Suppressed and distorted but maintaining reasonable vigour and vitality.		M	C2
33	Ash (<i>Fraxinus excelsior</i>)	E/M	F	9.00	2.50	4.50	4.50	1.50	2.00	1	306	3.67	Distorted and unbalanced.		M	C2
34	Ash (<i>Fraxinus excelsior</i>)	E/M	F	12.00	2.25	3.50	4.00	4.50	4.50	1	347	4.16	Apparently vigorous but heavily obscured by dense ivy cover. Has suffered notable buttress root erosion and bark damage.	Cut ivy and rereview.	M	C2
35	Ash (<i>Fraxinus excelsior</i>)	M	G/F	16.00	2.25	5.50	6.00	5.50	5.50	1	739	8.86	Large and prominent specimen arising from western embankment of ditch where ground erosion and cattle damage have resulted in root exposure and bark damage. Tree is heavily divided from 0.50 m with notable bark included fork. Tree offers limited sustainability.		M	C2
36	Ash (<i>Fraxinus excelsior</i>)	E/M	F	13.00	2.00	5.00	4.00	6.00	6.00	1	592	7.10	Twin-stemmed from near ground level. As been previously cut on northern side presumably in respect of diminish encroachment on adjoining garden area. Remains vigorous.	Review regularly.	M	C2

No.	Species	Age	Con	Ht	CH	N	E	S	W	Stm	Dia	RPA	Structural condition	Pmr	Yrs	Cat
37	Ash Group (<i>Fraxinus excelsior</i>)	E/M	F	14.00	3.00	5.00	2.50	2.50	4.50	3	592	7.10	Multi-stem from ground level. Has undergone prior pruning to reduce extent of encroachment on adjoining gardens.	Review regularly.	M	C2
38	Ash (<i>Fraxinus excelsior</i>)	E/M	F/P	10.00	2.00	5.00	2.50	2.00	5.50	3	560	6.72	Previously decapitated and appears to have lost crown. Remaining canopy is wholly enveloped in ivy cover. Is unsuitable for retention.	Remove.	N/A	U
39	Ash (<i>Fraxinus excelsior</i>)	S/M	F	10.00	3.00	1.00	4.00	4.00	3.50	1	325	3.90	Heavily suppressed and one-sided, typically unbalanced to south.	Review regarding retention context.	M	C2
40	Ash (<i>Fraxinus excelsior</i>)	M	G/F	15.00	2.00	5.50	5.00	5.50	6.00	1	748	8.98	Broad and spreading crown based on stems diverging from low level. General vigour and vitality appear good.	Review regarding retention context and cut ivy.	M	C2
41	Ash (<i>Fraxinus excelsior</i>)	M	G/F	14.00	3.00	4.00	5.00	4.50	3.50	1	493	5.92	Apparently vigorous but supporting extensive ivy cover.	Cut ivy and rereview.	L	B2
42	Ash (<i>Fraxinus excelsior</i>)	M	F	15.00	3.50	6.00	7.50	5.00	4.50	1	783	9.40	Heavily unbalanced to east. High proportion of crown is obscured by dense ivy cover. Visible elements of crown appear vigorous however imbalance raises some concern regarding predisposition towards impromptu damage.	Cut ivy and review regarding retention context.	M	C2
43	Sycamore (<i>Acer pseudoplatanus</i>)	S/M	F	5.50	1.50	2.50	2.50	2.50	2.50	1	274	3.29	Young and vigorous but proximity to silage bay and wall structure suggests high likelihood of impact construction stage.	Review regarding retention context	L	B2

No.	Species	Age	Con	Ht	CH	N	E	S	W	Stm	Dia	RPA	Structural condition	Pmr	Yrs	Cat
44	Sycamore (<i>Acer pseudoplatanus</i>)	M	F	14.00	2.00	5.00	7.00	5.00	4.50	1	875	10.50	A large specimen exhibiting classic signs of ongoing damage over time including localised cavity development. Buttress region has suffered substantial erosion and exposure of roots raising some concern regarding exposed aspect and stability. Lower stem and buttress roots have suffered notable bark damage.		S	C2
45	Ash (<i>Fraxinus excelsior</i>)	S/M	F	5.00	1.75	1.50	1.50	1.50	1.50	1	175	2.10	5 young and vigorous trees arising from hedge profile.		S	C2

Tree Lines and Hedges													
H1	Hedge 1 Hawthorn (<i>Crataegus monogyna</i>) Bramble (<i>Rubus fruticosus</i>) Elder (<i>Sambucus nigra</i>) Ivy (<i>Hedera helix</i>) Ash (<i>Fraxinus excelsior</i>)	M	F/P	5.00	0.00	Spread 5.00	m/s	239	2.86	What was at one time, and agricultural field boundary hedge, is now dilapidated, discontinuous and vestigial. A small number of original hawthorns remain at varying positions. Most specimens exhibit evidence of invasion by Ivy and Bramble.		M	C2
H2	Hedge 2 Hawthorn (<i>Crataegus monogyna</i>) Ash (<i>Fraxinus excelsior</i>)	S/M	F	2.00-5.00	0.00	Spread 5.00	m/s	239	2.86	A recently installed alignment in conjunction with Road development works.		L	B2
H3	Hedge 3 Hawthorn (<i>Crataegus monogyna</i>) Blackthorn (<i>Prunus spinosa</i>) Bramble (<i>Rubus fruticosus</i>) Elder (<i>Sambucus nigra</i>) Ivy (<i>Hedera helix</i>) Wych Elm (<i>Ulmus glabra</i>) Ash (<i>Fraxinus excelsior</i>)	M	F/P	2.00-6.00	0.00	Spread 5.00-9.00	m/s	239	2.86	A lapsed and dilapidated hedge now heavily overgrown by Bramble and Ivy. Offers minimal potential for retention and management.		S	C2

H4	Hedge 4 Hawthorn (<i>Crataegus monogyna</i>) Blackthorn (<i>Prunus spinosa</i>) Bramble (<i>Rubus fruticosus</i>) Elder (<i>Sambucus nigra</i>) Ivy (<i>Hedera helix</i>) Wych Elm (<i>Ulmus glabra</i>) Ash (<i>Fraxinus excelsior</i>)	M	F/P	2.00-6.00	0.00	Spread 5.00-9.00	m/s	239	2.86	A lapsed and dilapidated hedge now heavily overgrown by Bramble and Ivy. Offers minimal potential for retention and management.		M	C2
H5	Hedge 5 Hawthorn (<i>Crataegus monogyna</i>) Bramble (<i>Rubus fruticosus</i>) Ivy (<i>Hedera helix</i>) Ash (<i>Fraxinus excelsior</i>)	M	F/P	3.00-6.00	0.00	Spread 5.00-8.00	m/s	239	2.86	A lapsed but still broadly continuous hedge. The original Hawthorn is somewhat intermittent and affected by extensive Ivy cover however, it in combination with Bramble thicket still provide notable continuity. Removal of invasive species would substantially denude and breakup continuity.		M	C2

H6	Hedge 6 Hawthorn (<i>Crataegus monogyna</i>) Bramble (<i>Rubus fruticosus</i>) Ivy (<i>Hedera helix</i>) Ash (<i>Fraxinus excelsior</i>)	M	F/P	3.00-6.00	0.00	Spread 5.00-8.00	m/s	239	2.86	A lapsed but still broadly continuous hedge. The original Hawthorn is somewhat intermittent and affected by extensive Ivy cover however, in combination with Bramble thicket still provide notable continuity. Removal of invasive species would substantially denude and breakup continuity.		M	C2
H7	Hedge 7 Hawthorn (<i>Crataegus monogyna</i>) Bramble (<i>Rubus fruticosus</i>) Ivy (<i>Hedera helix</i>) Ash (<i>Fraxinus excelsior</i>)	M	F/P	4.00-6.00	0.00	Spread 5.00-8.00	m/s	239	2.86	The alignment supports numerous remaining Hawthorne's though many have been lost leading to a somewhat broken effect. High proportion of remaining Hawthorne are infested by extensive Ivy cover. Removal of low-level Bramble thicket will greatly reduce cover and continuity.		M	C2
H8	Hedge 8 Hawthorn (<i>Crataegus monogyna</i>) Bramble (<i>Rubus fruticosus</i>) Ivy (<i>Hedera helix</i>) Ash (<i>Fraxinus excelsior</i>)	M	F/P	3.00-6.00	0.00	Spread 5.00-8.00	m/s	239	2.86	A highly variable hedge where northernmost element our effectively defunct and lost. The mid and southern section remain, dominating the Western side of a substantial field ditch. The original Hawthorn is notably suppressed, particularly by Ivy and Bramble growth with only a small proportion of the original plans remaining and lower level Bramble dominated thicket often providing the greatest degree of continuity.	Review regarding retention context.	M	C2

H9	Hedge 9 Hawthorn (<i>Crataegus monogyna</i>) Bramble (<i>Rubus fruticosus</i>) Ivy (<i>Hedera helix</i>) Ash (<i>Fraxinus excelsior</i>)	M	F/P	3.50-6.00	0.00	Spread 5.00	m/s	239	2.86	A partially dilapidated hedge originally dominated by Hawthorn. Many specimens remaining and continuity is reasonable however storm damage, failure and loss is evident periodically throughout the line. The hedge arises what appears to be a raised embankment associated with the northern edge of a field drainage ditch.		M	C2
H10	Hedge 10 Hawthorn (<i>Crataegus monogyna</i>) Blackthorn (<i>Prunus spinosa</i>) Bramble (<i>Rubus fruticosus</i>) Ivy (<i>Hedera helix</i>) Ash (<i>Fraxinus excelsior</i>)	M	F/P	3.50-6.00	0.00	Spread 5.00-8.00	m/s	239	2.86	Is associated with western side of field drainage ditch, many of the original hawthorns remain however suppression, impromptu failure and infestation by competitive plants such as Ivy and Bramble has led to variable suppression along the hedge length. Continuity remains good.	Review regarding retention context.	L	C2

H11	Hedge 11 Hawthorn (<i>Crataegus monogyna</i>) Bramble (<i>Rubus fruticosus</i>) Ivy (<i>Hedera helix</i>) Dog Rose (<i>Rosa canina</i>)	M	F/P	3.50-6.00	0.00	Spread 5.00-8.00	m/s	239	2.86	A sporadic, variable and substantially discontinuous alignment showing evidence of arise on both sides of stream ditch. Any signs of deliberate planting are now diminished by a lack of continuity and the discontinuous nature of the hedge however, the greater proportion of remaining plants seem to arise from northern side of the stream with only a small number to the South. Remaining Hawthorne's are a few and dispersed with greater continuity been provided at lower levels by Bramble thicket and dog rose. Removal of invasive species such as Bramble Dog Rose and Ivy would greatly diminish hedge continuity.	M	C2
H12	Hedge 12 Blackthorn (<i>Prunus spinosa</i>) Ash (<i>Fraxinus excelsior</i>)	S/M	F/P	1.50	0.00	Spread 1.50	m/s	127	1.53	West of silage pit, hedge remnant with small number of blackthorn and additional emergent ash however multi-stem stature suggests non-planting.	M	C2

TG1	<p>Tree Group 1</p> <p>Hawthorn (<i>Crataegus monogyna</i>)</p> <p>Blackthorn (<i>Prunus spinosa</i>)</p> <p>Dogwood (<i>Cornus Sp.</i>)</p> <p>Italian Alder (<i>Alnus cordata</i>)</p> <p>Ash (<i>Fraxinus excelsior</i>)</p> <p>Silver Birch (<i>Betula pendula</i>)</p> <p>Rowan (<i>Sorbus aucuparia</i>)</p> <p>Guelder Rose (<i>Viburnum opulus</i>)</p>	S/M	G/F	2.00-6.00	0.00	Spread Contiguous	m/s	127	1.53	A dense planting of young trees and shrubs. Most specimens are of good condition, however close planting is already leading to suppression of slower/smaller growing specimens.	Apply population thinning.	L	C2
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