Arboricultural Report

Trees at Proposed Development at
Brady's Pub
Old Navan Road
Dublin 15
D15 W3FW
August 2020

The Tree File Ltd
Consulting Arborists
Ashgrove House
Kill Avenue
Dun Laoghaire
Co Dublin
01-2804839

Contents

Associated Drawings

This report is to be read with the drawings noted below

	Drawing Title	Drawing Subject
1)	**D1-TCP-Bradys-08-20**	**Tree Constraints Plan** A plan depicting the predevelopment location, size, calculated constraints and simplified tree quality category system
2)	**D2-AIA-Bradys-08-20**	**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)	**D3-TPP-Bradys-08-20**	**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 has been prepared by-
Andy Worsnop Tech Arbor A, NCH Arb (PTI LANTRA)
The Tree File Ltd
Ashgrove House
Kill Avenue
Dun Laoghaire
Co Dublin

Report Brief and Context

This updated report was requested by "**Bartra Property (Castleknock) Limited**". It comprises an updated Arboricultural review of the proposed development project. The various elements of this report provide an assessment of the sites existing tree population in respect of suitability for retention and sustainability in their current scenario, as well as an assessment of their potential for sustainable retention in the post-development scenario and the effects of the development process. It also provides information in respect of the necessary tree protection and the avoidance of damage to trees during the construction process, required to achieve sustainable tree retention.

This assessment summarises the Arborists findings and recommendations, arrived at after the screening process and considerations defined within the "Implication Assessment Scope" 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 and 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.

This report must be read with the three associated drawings.

1. The "Tree Constraints Plan" drawing "D1-TCP-Bradys-08-20" that provides a graphic representation of tree survey data, depicting the constraints asserted by the site trees, as well as a categorisation of their condition and potential value.

2. The drawing "Arboricultural Implication Plan" drawing, "D2-AIA-Bradys-08-20" depicts the expected impacts by overlaying the tree constraints information with the architectural and engineering information.

3. The "Tree Protection Plan", "D3-TPP-Bradys-08-20" depicts the location and extent of the tree protection measures required to prevent damage and disturbance to trees intended for retention.

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, the accuracy of this assessment premised on all its elements/recommendations, and the omission or alteration of any part can radically alter outcomes in respect of sustainable tree retention.

Report Summary

This report is effectively an updated version of the Arboricultural report produced in August 2019 and submitted with the recently set-aside planning application (ABP Ref: PL06F.305459) that for reference and comparison, is provided at "Appendix 3" to this report

In comparison to the earlier report, this review illustrates identical issues and outcomes, other than the fact that between the two submissions, Rowan No.7 collapsed and has been removed from the tree list. Additionally, the most recent review noted some deteriorations in tree health, with Norway Maple No.8 being downgraded to a category "C", Rowan Nos.15 and 18, both being downgraded to a category "U" status.

Overall, proposed development will, by its nature, consume much of the site area. Accordingly, there is no realistic potential to keep trees within the "red line" zone.

In some instances, and a because of poor or deteriorating health, such losses are of little concern, in that the affected trees offered little or no sustainability. In many other cases, the small stature and limited visual importance, offers minimal individual visual importance, though the cumulative effect is greater.

The development also amplifies existing issues with off-site trees and particularly, those on the entrance road to Talbot Downs. These trees have been installed within a severely constrained environment and one that would not accommodate mature specimens. This fact when combined with what will be unavoidable disturbance by the proposed works means that they cannot be retained without risk. Accordingly, and notwithstanding good overall health, it is recommended that they be removed and possibly replaced, though any replacement must be chosen and installed in line with what will remain a particularly constrained ground environment. It is noted that during a previous application, this approach was broadly accepted.

Arising from the public open space to the north of the development, two additional trees cause concern. The first, a Lime (No.30) could potentially be disturbed by the proposed works, but only to a minor extent and this could be readily avoided with care at construction time and the adoption of "manual only" procedures, under the guidance of a project Arborist, when working on the boundary treatment within 4.00 metres of the tree stem, though it is considered unlikely that root material will have trespassed beyond the line of this structure. Nonetheless, the tree is close enough to the subject site to see a current crown encroachment on the buildings that will likely require pruning to facilitate works.

Notwithstanding the above, this tree's crown encroaches upon the existing structures and the proposed structures, thereby raising some concern in respect of encroachment over time. The tree's proximity to the site also raises some concern regarding the potential impacts to tree roots considering the intention to replace the existing boundary wall with a plinth railing. It is likely that actions will be necessary in respect of current encroachment and the facilitation of proposed works that will likely involve tree pruning works both at development time and periodically over time in respect of future growth and encroachment. This could readily be incorporated into a management agreement between the facilities management and FCC Parks Dept.

Whilst slightly “set-back” from the site boundary, Lime trees Nos.32 and 33 (to a lesser extent Lime Nos.34 and 35) raise similar issues in that their current young age and small size will see a great increase in size and inevitable encroachment issues in time. Accordingly, there may be a requirement for management intervention, such as “crown-reduction” type pruning within the foreseeable future.

As an alternative to accepting potentially onerous and long-term management requirements, there would be merit in considering by agreement, a combined management and replacement scheme. An example of this might include installing an agreed number of trees of suitable species at more sustainable ranges from the buildings for development over the forthcoming years. During that agreed time, the existing trees could be managed by way of pruning to maintain clearance and avoid encroachment, up until a time whereby the new trees have attained a reasonable stature so as to allow for the removal of tree Nos.30, 32 and 33 without undue loss of amenity to the adjoining area.

Whilst dealing with the same boundary, a second tree, Goat Willow (No.31) appears to be a self-seeded specimen that is arising immediately adjoining the boundary wall. This location is unsustainable, and if retained will result in boundary disturbance and wall damage. Accordingly, it is advised that the tree is removed.

The remaining trees arising from the park area tend to be in excellent health and offer immense sustainability. Nonetheless, the species involved, Lime, suggests that future growth may well see the development of encroachment issues that may require periodic pruning intervention over time.

Site Description

The site in question is broadly square, bounded by the old Navan Road to the south-west and Talbot Downs to the north-west.

The site appears broadly level, comprising a substantially developed and artificial context, being dominated by an existing public house to the north of the site, with much of the remaining site space comprising vehicular access and car parking surfaces.

The Vegetation with which this report deals tends to be located at positions adjoin the boundaries, both within and immediately outside of the site boundary.

Pre-Development Arboricultural Scenario

Tree No.1 is affected by decay brought on by an identified pathogen that will rapidly undermine its mechanical integrity thereby undermining its suitability for retention.

Tree number 3 is of particularly poor quality being affected by decay causing pathogens and thus is of dubious and highly limited retention merit best.

To the south-west of the site and adjoining the old Navan Road boundary, the tree population is highly mixed, including several trees that have effectively failed, others of poor quality and only two of reasonably good quality. Unfortunately, the scenario within which the trees exist is particularly

constrained, thereby questioning any realistic longer-term sustainability considering the potential size of as may be attained by species such as Lime.

Tree Nos.19 to 29 comprise an alignment of trees adjoining the entrance to Talbot Downs to the north-west of the site. These trees are relatively young, healthy and still vigorous, asserting immense potential for continued size increase over time. As they arise from a particularly limited ground space between the gable wall of the existing structure and the kerb edge of the adjoining road then some concern exists regarding their sustainability. Currently their encroachment upon the existing building is limited and has been managed by pruning, though ultimately, potential growth in such constrained circumstances grossly undermine any realistic sustainability.

To the north-east of the site, the neighbouring public open space supports several trees, the majority of which are of good condition. Nonetheless, some issues exist, including the proximity of Goat Willow No.31 to the boundary wall and its potential to cause growth related damage over time. Additionally, the current size and proximity of Lime No.30 already sees massive encroachment on the existing building, well illustrating the potential for growth related encroachment upon the site in the future, both from this tree but potentially from tree Nos.32 to 34 in the future.

Nature of Proposed Works and Likely Impacts

Bartra Property (Castleknock) Limited intend to apply to An Bord Pleanála for permission for a strategic housing development at this 0.3,170 ha site at Brady's Public House, Old Navan Road, Dublin 15, D15 W3FW.

The development will principally consist of: the demolition of the existing part 1 to part 2 No. storey over partial basement public house and restaurant building (1,243 sq m) and the construction of a part 1 to part 5 No. storey over basement Build-to-Rent Shared Living Residential Development (6,549 sq m) comprising 210 No. bedspaces (182 No. single occupancy rooms, 4 No. accessible rooms and 12 No. double occupancy rooms).

The development also consists of the provision of communal living/kitchen/dining rooms at each floor level to serve the residents of each floor; communal resident amenity spaces for all residents including tv/cinema room at basement level, gymnasium and lounge/reception area at ground floor level, a library/study at third floor level and a private dining room at fourth floor level; external roof terrace at third floor level (78 sq m) facing north-east, north-west and south-west; external communal amenity courtyards at basement (170 sq m) and ground floor level (336 sq m); external amenity space at basement level accessed from the communal living/kitchen/dining room (30 sq m); balconies at third floor level facing north-east/north-west (14.35 sq m); resident facilities including launderette, linen store, accessible WC and bin store; 2 No. accesses to the public park along the north-eastern boundary; 2 No. car-share parking spaces; a lay-by and delivery bay; emergency gate access to the courtyard (north-west boundary); bicycle parking; boundary treatments; hard and soft landscaping; plant; PV panels; substation; switch room; generator; lighting; and all other associated site works above and below ground.

Whilst the footprint of the proposed structures, buildings, basements, access roads, parking area and paths are readily understandable regarding the spatial requirements, additional and ancillary space is commonly required for construction works and associated activities and access.

Site trees can readily be affected by one of three primary impacts including-

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. A change in site context or a change in occupation or use that makes a tree unsuitable for retention.

Identification of Impacts

The review of likely Arboricultural implications is based upon the recommendations and criteria as defined within BS5837: 2012 Trees in Relation to Design, Demolition and Construction – Recommendations. The assessment attempts to consider both direct and indirect implications, where and if they apply to the subject development. The "assessment" tends to concentrate on any activity that affects the tree, its local environment, or the context within which it might be retained.

This report, its findings and recommendations have arisen from the scrutiny of development proposal drawings as provided by TODD Architects, in the form of AutoCAD drawings "18038-00-200-101-Planning, Ground Floor Plan.dwg" and "18038--10-200-101-Planning, Basement.dwg", drainage and levels information as provided by CS Consulting Group Consulting Engineers in the form of AutoCAD drawing "B094 - 001 Rev B - FOUL AND STORM GROUND FLOOR DRAINAGE_BOUND.dwg", "B094 - 002 Rev B - BASEMENT LEVEL DRAINAGE LAYOUT_BOUND.dwg" and "B094 - 008 - PROPOSED WATERMAINS LAYOUT.dwg" in conjunction with the most recent tree survey data (as appended to this report).

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.

In respect of tree impacts, 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. Additionally, the tree specimens have been evaluated in respect of health, sustainability and suitability for retention within the new context and adjoining the proposed development. Such considerations can readily affect the "predevelopment suitability for retention" scenario.

The perceived development impacts have been illustrated graphically on drawing "D2-AIA-Bradys-08-20", where trees denoted with "Broken Red" crown outlines will be removed and those denoted with "Continuous Green" crown outlines will be retained.

Arboricultural Implications of Proposed Development

The review of trees has noted that some specimens are of particularly poor health and indeed may already constitute a hazard. Such trees, including Nos.1, 5, 9, 15 and 18 must be removed and should not be considered for retention. Such trees might reasonably be disregarded as development impacts.

Other trees on site were found to be of poor health and thus provide minimal sustainability. Most such trees tend to be relatively small, thereby creating a scenario whereby the impact of their loss is greatly diminished.

As noted, the site area is hugely constrained relative to the development proposals. These proposals include the excavation of a basement which, together with the construction of a larger ground floor facility and the provision of vehicular access, the provision of underground services and other facilities, effectively consumes a large proportion of the site area. Additionally, and over and above the completed structures, it is expected that substantial additional space will be required to facilitate the construction process. As the primary prerequisite to sustainable tree retention is the conservation and preservation of existing ground conditions, then it appears unlikely that this can be attained in this instance.

The proposed development will affect trees both within and adjoining the site. In this respect, notable concerns have arisen regarding the extreme proximity of trees on the access road to Talbot Downs, to the west of the site. These young, healthy but potentially large-growing Norway Maple trees arise from a highly limited and narrow grass margin, little more than 2.00 metres wide and directly adjoining the gable wall of the existing structure. The proximity of the trees to the existing structure ranges between 0.70 and 1.50 metres and the adjoining road raises concerns regarding rooting constraint in a westerly direction.

The species has the potential to attain heights between 15.00 and 25.00 metres and can develop a stem diameter that exceeds 1.00 metre. This scenario raises insurmountable issues of sustainability and a review suggests the trees are, regardless of development, unsustainable beyond the immediate short-term and that retention to maturity and full size would be impossible. This issue will be exacerbated by the proposed works and fears exist that the demolition/removal of the existing structures may, through their extreme proximity to the trees, undermine their stability, safety and thus, suitability for retention. Accordingly, the proposed development will require the removal and/or replacement of these trees.

Should replacement planting be required, then the constrained ground environment must be considered, and any species selection should account for the limited space and potential to disturb adjoining structures and thus be contextually appropriate.

A similar scenario exists in respect of the proximity of one tree (No.30) to the north of the development site and is arising from the public open space. This tree, through proximity to the existing site boundary already encroaches upon the existing structures. These existing structures will be removed but replaced by new structures and only slightly greater range, thereby raising some concern in respect of encroachment over time. The tree's proximity to the site also raises some concern regarding the potential impacts to tree roots considering the intention to replace the existing boundary wall with a plinth railing. However, the calculated root protection zone is only marginally affected within the red line area and thus, consideration of "clause 5.3.1.a) and b)", is considered applicable and thus it is considered the tree can be sustainably retained if care is exercised during the demolition and construction works, for example by using manual means to deal with the demolition and construction works within circa 4.00 metres of the tree's stem. Nonetheless, actions will be necessary in respect of current encroachment and the facilitation of proposed works that will likely involve the application of "Crown Reduction" type tree pruning works (BS3998-2010), both at development time and periodically over time in respect of future

growth and encroachment. This could readily be incorporated into a management agreement between the facilities management and FCC Parks Dept.

In respect of the above and whilst the "set-back" from the site for tree Nos.33 to 35 and the development area is greater, the current young age and small size of these trees will see a great increase in size and possible encroachment issue within two decades. Accordingly, there may be a requirement for management intervention, such as "crown-reduction" type pruning within the medium term.

The above issues as relate to tree Nos.30, 32 and 33 raise issues of sustainability over time, even with the application of pruning management. Therefore, there would be merit in considering by agreement, a combined management and replacement scheme. An example of this might include installing an agreed number of trees of suitable species at more sustainable ranges from the buildings for development over the forthcoming years. During that agreed time, the existing trees could be managed by way of pruning to maintain clearance and avoid encroachment, up until a time whereby the new trees have attained a reasonable stature so as to allow for the removal of tree Nos.30, 32 and 33 without undue loss of amenity to the adjoining area.

Attention is drawn to Goat Willow No.31, that arises from a position outside of the site but directly adjoining (in contact with) the northern boundary wall of the site. This specimen appears to be self-seeded and is most regularly regarded as a weed species and would not normally be selected for planting within amenity areas. In this instance and if retained, ongoing growth will result in damage to the boundary wall, or, should the wall be replaced, the process will result in gross damage to the tree. Accordingly, and regardless of development or not, this tree is recommended for removal.

Combining the above issues and considerations, it appears that no trees can be retained within the subject site and that moreover, the trees arising from close beside but outside of the sites western boundary cannot be retained. Accordingly, and generally in line with the previously permitted development, the apparently retainable tree population will be limited to the public open space to the north of the site.

The extent of tree planting envisaged across the site will in part mitigate the above losses. Details have been provided within the proposed landscape plans as provided by "the big space" Landscape Architecture.

Particulars of Tree Loss

The drawing "D2-AIA-Bradys-08-20" 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 black dashed outlines.

The nature and extent of the proposed development and its unavoidable need to convert or otherwise disturb the existing site conditions effectively requires the removal of all site trees as outlined below-

The site currently supports 5No. category "U" (unsustainable or unsuitable for retention) trees including Nos.1, 5, 9, 15 and 18.

The review area supports a total of 34No. individual trees (and 1No. shrub group), 19 of which arise from outside of the "red line" area, including-

- 5No. category "U" trees
- 4 category "A" trees,
- 17No, category "B" trees,
- 9No. category "C" trees,

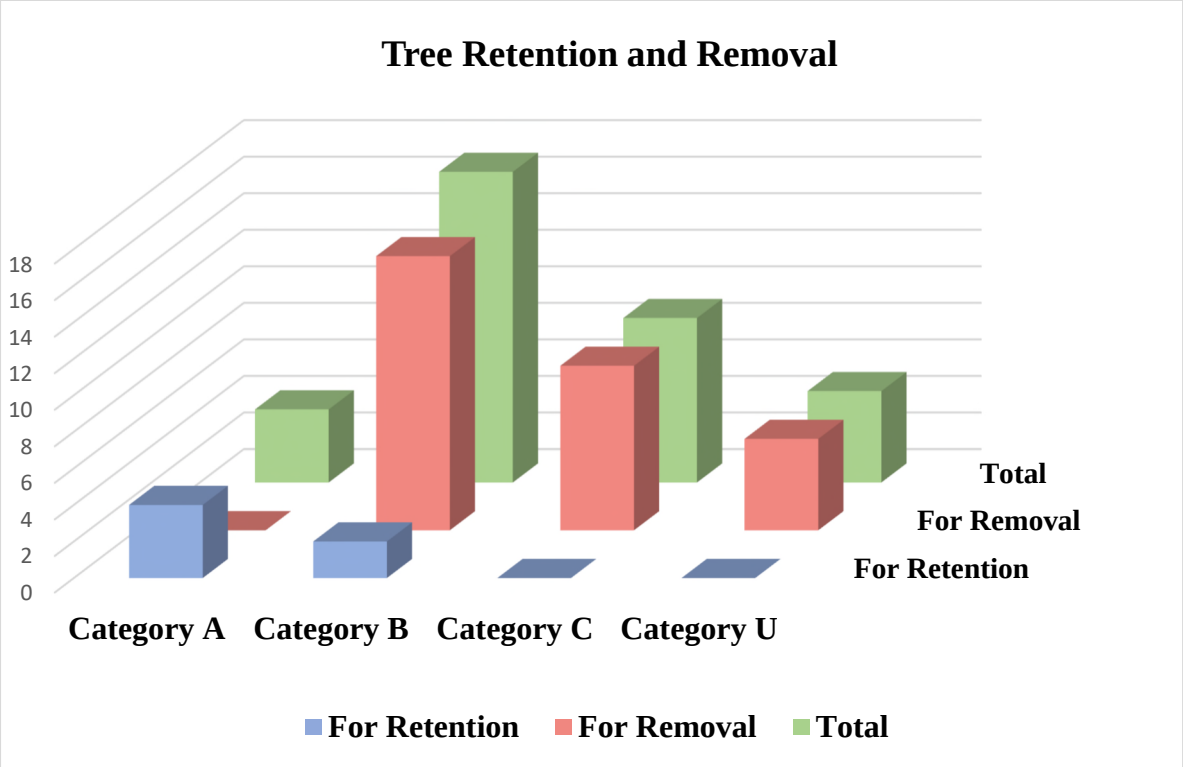
Normally, all category "U" trees will be removed (many require removal regardless of development) including Nos. 1, 5, 9, 15 and 18.

Of the site's "fair" quality, category "B" trees, the development works will require the removal of tree Nos.2, 4, 12, 13, 14, 16, 19, 20, 21, 24, 25, 26, 27, 28 and 29.

Of the site's category "poor" quality "C" trees, the development works appears to require the removal of Nos.3, 6, 8, 10, 11, 17, 22, 23 and 31

The tree loss breakdown for the site will be-

- 5 No. Category U trees
- 15 No. Category B trees
- 9 No. category C trees



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 construction exclusion type tree protection, whether vertical or horizontal, all must conform or equate to the recommendations of Section 9, 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 "D3-TPP-Bradys-08-20".

In this drawing, the edges "Construction Exclusion Zone" is defined by the bold "Orange" lines that represent the proposed location of the primary protective "Construction Exclusion Fencing", with the "Orange" hatched area representing the primary "Construction Exclusion Zone".

The tree protection plan includes the use of special materials and methodologies intended to minimise the impacts of structures near trees. This would include the guidance by a project Arborist and use of manual procedures in respect of the removal of the existing boundary wall and the creation of the new "railed" boundary close to tree No.30 at the north of the site.

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 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 and 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, the proposed development and particularly its unavoidable loss of trees will raise exposure and shelter loss issues in respect of those trees that will remain. For this reason, all retained trees should be reviewed immediately after the primary site clearance works with a view to updating and amending the "preliminary management recommendations" provided in the original tree survey 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

Set out below is a broad and prescriptive method statement, intended to provide advice and guidance for most events, occurrences and issues that arise in respect of trees and tree protection on typical development sites. This statement intends to instruct and to advise regarding the execution of the proposed development works in a manner that will be least detrimental to the retained tree population.

Drawings

This Arboricultural Method Statement must be read with the associated "Tree Protection Plan" drawing, "D3-TPP-Bradys-08-20". This drawing, as was submitted as part of the Arboricultural planning package must be updated and confirmed for "Construction" stage purposes, for example by the inclusion of specific tree protection ranges and dimensions. Accordingly, and in respect of tree protection ranges from any tree, reference must be made to the root protection area radius as defined for that tree within the tree survey table.

Method Statement Use

This Method Statement should be used under the direct guidance of the project Arborist, as site/project specific issues arise, and new information becomes available, it may be amended and adjusted by him/her to address project-specific issues. In this respect, limited "construction management" detail was available at compilation time, and therefore this method statement deals with tree protection in its broadest terms and may require modification to deal with project specific details to this development, e.g. to account for specific plant/machinery/access issues.

Amendments and Modifications

In some situations, and with the adoption of specific ground protection procedures and structures, parts of the above defined "Construction Exclusion Zones" might still be utilised during the construction process. In respect of vehicular/plant/machinery access, the provision of suitable ground protection measures that avoid soil compaction and maintain drainage/percolation and breathability, that are acceptable to the project Arborist and subject to engineering confirmation, can be utilised. Such might include the various form of "roll-out" temporary access surfaces or might include the "three-dimensional cellular confinement systems that utilise specific forms of confined hard-core. The effective use of either system is subject to the avoidance of excavation and level changes, by use upon existing ground surfaces. Where provided, the above systems would allow for the relocation of the "Construction Exclusion Fencing" to exclude and provide access to and across the newly protected areas.

Works Related Impacts

In respect of any necessary and unavoidable structures 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. The adoption of "manual only" procedures so that root damage can be minimised, for example by hand digging or the use of "air-spades" for excavation or trenching, may be required. All such works must be undertaken under the guidance of the project Arborist who will advise on likely repercussions and necessary tree management issues.

Tree Works Specification Updates

It must be noted that many tree management recommendations, as stipulated within the "Preliminary Management Recommendation" section of the primary tree survey, were made prior to any grant of permission, relate to a changing site context and may no longer be applicable, or may require modification to account for the changes that the built project will cause.

General Method Statement

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.

1.0) Overview and Implementation

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.

A review must be undertaken to identify any issues as may have arisen in respect of planning conditions or details as may have changed between the design stage and construction stage development details.

1.2 The project Arborist or another qualified person will oversee the application of all tree protection measures and any necessary modifications to this Method Statement to provide a basis upon which tree protection will be managed on the construction site.

1.3 The tree constraints (radial range) associated with any tree to be retained on site is to be regarded as sacrosanct and is not to be entered for any reason without confirmation by, and agreement with, the project Arborist.

1.4 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.

1.5 As unforeseen tree losses may compromise project planning permissions, it is imperative that issues relating to tree protection 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 including tree felling and cutting as defined in the Arboricultural report.

2.3 The Project Arborist will oversee and liaise with the tree works contractor regarding the nature and extent of tree/woodland access to facilitate felling works.

2.4 On completion of the felling works, the tree management plan will be reviewed by the Project Arborist to address changed context, land use, rates of occupation and use and to account for potential impacts upon the newly built environment, thereby amending (if necessary) the "preliminary Management Recommendations" stipulated in the original Tree Survey.

2.5 Any revised pruning/cutting works will be agreed with the local authority and applied at the earliest possible opportunity.

2.6 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.

2.7 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". This must be completed in a "Progressive" manner, with each section being removed whilst utilizing protection systems still in situ. Such works must be agreed and overseen by Project Arborist.

2.8 At construction works completion stage, all retained trees will be reviewed regarding the condition and longer-term management recommendations and regarding site hand-over.

3.0) Tree Protection

3.1 All tree protection measures must be agreed, overseen and verified by the Project Arborist prior to works commencement and regarding maintenance for the duration of site works

3.2 Tree protection will be based upon drawings "D3-TPP-Bradys-08-20" (Construction version) that relates to all trees for retention, as well as the location of all tree protection measures.

3.3 Unless specifically stipulated by the project Arborist, the default minimum range of protective fencing or construction exclusion fencing is the range stipulated in the primary tree survey for that tree and within the "RPA" (root protection area) column.

3.4 If entry into the "RPA" (Root Protection Area) zones becomes unavoidable, ground protection systems agreed with the project Arborist, that allow for the relocation of the "Construction Exclusion Fencing", will provide for an extension of accessible ground space.

3.5 All construction, works or access areas must be enclosed and defined by protective fencing, this comprising the "Construction Exclusion Zone"

3.6 Such a fence must be fit for purpose and commensurate with the nature of activity expected upon the site and should be 2.00 metres in height, constructed of robust materials and be suitably braced to withstand impact and may include sheet panels attached to timber posts or weld-mesh panels supported upon a scaffold bar system. All footings must be firm and immobile and must not use mobile rubber or cement footings, (an illustration (Fig 1- facsimile of BS5837: 2012, is appended to this document to illustrate a possible option for the construction of the protective fencing)

3.7 The fence should be affixed with notification signs such as "TREE PROTECTION AREA - KEEP OUT"

3.8 Where applicable, 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.

3.9 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 ground.

4.2 Ground protection can comprise the use of proprietary materials/structures 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 structure

4.5 Where proprietary ground protection systems are utilised, it is imperative that the manufacturer's specifications and recommendations are adhered to in full regarding the provision and installation of this type of ground protection.

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 The "RPA" zone associated with all retained trees must be protected from the effects of construction works.
5.3 Amended tree protection measures as agreed with the Project Arborist and including the relocation of fencing and the provision of ground protection will be installed in accordance with the tree protection measures prior to commencement.
5.4 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.
5.5 Preference must be given to manual labour and techniques within the fenced "RPA" zone.
5.6 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 No open trenching will be allowed. All works must be commensurate with the preservation of the affected tree root system.
6.4 Preference will be given to trench-less techniques including Mole-piping, Directional-drilling manual hydro-trenching (high-pressure water), "Air-Spade" or broken-trench techniques.
6.5 All works carried out within the "RPA" zone or "Construction Exclusion Zone" must be agreed with and supervised by the Project Arborist.

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 in respect of possible amendments to the "Preliminary Management Recommendations" and 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.
7.4 Additional works including formative pruning, crown reduction etc., may be nominated for various trees in the interests of mitigating the potential effects of exposure and isolation.
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 All Tree Surgery/Pruning works will be undertaken under the guidance of the Project Arborist; the precise nature and extent of work being agreed before commencement.

7.7 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.
9.3 All persons undertaking works either before or after the principal development (site investigation works, Landscape Contractors) are subject to the above requirements
9.4 Works outside the "Construction Exclusion Zone" must be controlled to create no potential secondary hazard to tree health.
9.5 Large loads accessing the site must be reviewed regarding clearance and potential tree damage.
9.6 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.
9.7 No fires can be lit within 5 metres of any tree canopy extent.
9.8 No tree will be used for support regarding cables, signs etc.
9.9 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.
9.10 Any issue that has the potential to affect site trees must be brought to the attention of the Project Arborist for review and comment.
9.11 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.
9.12 It is likely 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 is likely that changes in site usage, development or other environmental changes will require an amendment of a 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 "D1-TCP-Bradys-08-20" 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 "D1-TCP-Bradys-08-20". 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 April of 2016 for the previously permitted development. It was revisited and updated in July of 2018 and updated in April 2019. 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 proposes 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 summer and 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 *(Fraxinus excelsior)*	M	P	15.00	3.00	7.00	7.50	8.00	8.00	1	875	10.50	A large specimen previously known to be affected by basal decay is now infected by Polyporus squamosus, a pathogen that will result in extensive internal decay. Tree is deteriorating rapidly and will ultimately be subject to mechanical failure. Crown appears to have been subject to impromptu and localised branch shedding.	Remove.	N/A	U
2	Silver Birch *(Betula pendula)*	E/M	G/F	6.50	1.00	1.25	1.25	1.25	1.25	1	143	1.72	Young and still vigorous with substantial potential for continued growth over time. Ivy development is now extended to in excess of 4.00 m.		L	B2
3	Ornamental Cherry *(Prunus variety)*	M	F/P	9.00	1.50	5.00	5.00	6.00	6.50	1	567	6.80	A relatively large Cherry of variable crown vigour. Lower stem exhibits evidence of fungal activity and internal decay. Differing crown form suggests re-suckering and reversion from a planted horticultural variety with much of crown now dominated by Wild Cherry. Crown has sustained prior damage and supports evidence of Phellinus attack. Note is made of extensive dieback decline in deadwood development particularly about north-western crown	Would be considered suitable only for extreme short-term retention, after pruning and subject to regular review.	S	C2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
4	Lime *(Tilia europea)*	E/M	G/F	12.00	1.25	5.50	6.00	4.00	5.00	1	414	4.97	Young and still vigorous, asserting immense potential for continued growth over time. Tree has sustained substantial cutting back on south-western side of crown both at lower levels to maintain footpath clearance and at higher levels because of passage of overhead utility cables. Crown is now notably distorted and deformed. Middle-crown supports notable ivy cover.	Review regard retention context and suitable management.	M	B2
5	Rowan *(Sorbus aucuparia)*	E/M	P	5.00	1.25	1.50	1.00	1.00	1.50	1	162	1.95	Is chronically suppress with much of canopy now obscured by dense Ivy cover.	Remove.	N/A	U
6	Lime *(Tilia europea)*	E/M	G/F	12.00	1.00	5.00	4.50	4.50	4.00	1	337	4.05	Slightly distorted form having sustained localised mechanical damage presumably relating to vehicular passage. Higher south-western crown has been substantially pruned because of passage of overhead utility cables. General vigour and vitality are good asserting immense potential for continued growth over time. Heavily divided crown at 2.25 m raising concern in respect of compression fork development of possible predisposition towards failure.	Review regard retention context.	M	C2
8	Norway Maple *(Acer platanoides)*	E/M	P	7.50	1.25	4.50	5.00	5.00	5.00	1	341	4.09	Central crown apex is now subject to dieback and decline though lower Crown remains vigorous. Growth is now spreading, and tree is considered unsustainable beyond short-term.	Review regularly regarding suitability for retention.	S	C2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
9	Rowan *(Sorbus aucuparia)*	E/M	P	4.50	1.00	2.00	3.00	2.50	2.00	1	169	2.02	Is subject to chronic crown dieback and deadwood development. Is unsuitable for retention.	Remove.	N/A	U
10	Swedish Whitebeam *(Sorbus intermedia)*	S/M	P	3.50	1.00	0.50	2.00	1.25	0.50	1	143	1.72	Appears to be subject to higher Crown decline though this is limited to upper crown twigs only at present.	Review regularly.	S	C2
11	Rowan *(Sorbus aucuparia)*	E/M	F/P	4.25	1.50	2.00	1.50	1.50	2.00	1	153	1.83	Appears to be of reduced vigour with visible elements of mid-crown deadwood.	Review regularly.	S	C2
12	Lawson Cypress *(Chamaecyparis lawsoniana)*	M	F	5.00	0.50	1.50	1.50	1.50	1.50	1	207	2.48	Young and relatively vigorous was have sustained disturbance and minor damage at lower levels. Asserts immense potential for continued growth over time.		M	B2
13	Rowan *(Sorbus aucuparia)*	E/M	F	5.00	1.75	2.00	2.50	1.50	2.00	1	166	1.99	Slightly distorted but maintaining reasonable vigour and vitality.		L	B2
14	Lawson Cypress *(Chamaecyparis lawsoniana)*	M	F	5.00	0.50	1.50	1.50	1.50	1.50	1	207	2.48	Young and relatively vigorous was have sustained disturbance and minor damage at lower levels. Asserts immense potential for continued growth over time.		M	B2
15	Rowan *(Sorbus aucuparia)*	E/M	P	4.00	1.75	1.50	2.00	2.50	2.00	1	159	1.91	appears to be subject to extensive decline with upper 30% of crown apparently dying back. Is unsuitable for retention.	Remove.	N/A	U
16	Lawson Cypress *(Chamaecyparis lawsoniana)*	M	F	5.00	0.50	1.50	1.50	1.50	1.50	1	207	2.48	Young and relatively vigorous was have sustained disturbance and minor damage at lower levels. Asserts immense potential for continued growth over time.		M	B2
17	Rowan *(Sorbus aucuparia)*	S/M	P	3.50	0.50	0.50	0.50	0.50	0.50	1	159	1.91	Is subject to notable dieback and decline about higher crown suggesting limited sustainability.	Review annually regarding ongoing suitability retention.	S	C2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
18	Rowan *(Sorbus aucuparia)*	S/M	F	3.50	0.50	0.50	0.50	0.50	0.50	1	159	1.91	A particularly poor quality with substantial dieback without within crown, consider removal and replacement.	Remove	N/A	U
19	Norway Maple *(Acer platanoides)*	E/M	G/F	9.00	2.25	4.00	4.00	4.50	4.50	1	267	3.21	Young and vigorous with immense potential for continued growth over time. Has sustained minor lower crown pruning.		L	B2
20	Norway Maple *(Acer platanoides)*	E/M	G/F	12.00	3.00	2.50	2.50	2.50	2.00	1	274	3.29	A tall and upright specimen directly adjoining gable wall of existing building. Asserts immense potential for continued growth.		L	B2
21	Norway Maple *(Acer platanoides)*	E/M	G/F	10.00	2.00	2.00	1.50	2.00	2.50	1	220	2.64	Upright and directly adjoining gable wall of existing structure. Asserts immense potential for continued growth over time.		L	B2
22	Norway Maple *(Acer platanoides)*	E/M	F	11.00	2.25	3.00	2.00	4.00	3.50	1	251	3.02	Slightly distorted and directly adjoining gable wall of adjoining structure. Is maintaining good vigour and vitality asserts substantial potential for growth increase over time.		M	C2
23	Norway Maple *(Acer platanoides)*	E/M	F	12.00	3.00	4.00	2.50	3.00	2.50	1	261	3.13	Young and vigorous, maintaining good vigour and vitality but is already been subject to substantial damage affecting north-western most ascending stem. Will require management intervention.		M	C2
24	Norway Maple *(Acer platanoides)*	E/M	F	12.00	3.00	3.00	2.50	3.00	2.50	1	239	2.86	Tall and upright, directly adjoining gable wall of adjoining structure. Asserts immense potential for continued growth over time.		L	B2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
25	Norway Maple *(Acer platanoides)*	E/M	F	11.00	3.00	3.50	2.50	1.50	2.00	1	245	2.94	Slightly one-sided but maintaining good vigour and vitality asserting immense potential for continued growth over time.		L	B2
26	Norway Maple *(Acer platanoides)*	E/M	G/F	11.00	4.00	3.00	3.00	2.00	2.00	1	258	3.09	One-sided but maintaining good general vigour and vitality. Asserts immense potential for continued growth over time.		L	B2
27	Norway Maple *(Acer platanoides)*	E/M	F	9.00	3.50	4.00	1.00	4.50	2.50	1	213	2.56	Notably one-sided and unbalanced away from building and towards road. Young and vigorous asserts immense potential for continued growth over time.		L	B2
28	Norway Maple *(Acer platanoides)*	E/M	G/F	11.00	2.00	3.50	2.00	3.00	2.50	1	239	2.86	Young and vigorous, arising from position directly adjoining gable wall of adjoining building. Asserts immense potential for continued growth over time.		L	B2
29	Norway Maple *(Acer platanoides)*	E/M	G/F	10.00	2.00	4.00	3.50	2.00	3.00	1	360	4.32	Young and vigorous asserting immense potential for continued growth over time.		L	B2
30	Lime *(Tilia europea)*	E/M	G/F	12.00	1.75	5.00	5.00	4.50	4.00	1	309	3.71	Young and vigorous with immense potential for continued growth. Located arising from open space to north of site. Is already of a size where substantial encroachment is occurring regarding existing building		L	B2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
31	Goat Willow *(Salix caprea)*	E/M	F	6.00	0.00	4.00	3.50	2.00	2.00	1	175	2.10	Shrubby mass arising from undergrowth directly adjoining boundary wall. Is unlikely to have been planted and is most likely to be naturally arising. Typically considered as a weed species and not regularly retained within ornamental or commercial planting.		M	C2
32	Lime *(Tilia europea)*	E/M	G/F	10.00	2.00	4.00	4.00	3.50	3.00	1	251	3.02	Slightly unhinged by joining willow but otherwise maintaining good general vigour and vitality.		L	A2
33	Lime *(Tilia europea)*	E/M	G/F	10.00	2.00	3.50	4.00	2.50	2.00	1	220	2.64	Slightly one-sided as result of suppression by nearby Ash but is of otherwise of good form and vigour.		L	A2
34	Lime *(Tilia europea)*	E/M	G/F	10.00	2.25	4.00	4.00	3.50	3.00	1	245	2.94	Of typically good form and vigour asserting immense potential for continued growth over time.		L	A2
35	Lime *(Tilia europea)*	E/M	G/F	9.00	2.25	4.00	3.50	3.00	4.00	1	248	2.98	Young and vigorous asserting immense potential for continued growth over time.		L	A2
SG1	Shrub Group 1 Cherry Laurel *(Prunus laurocerasus)*	M	F	2.25	0.00	n/a	n/a	n/a	n/a	m/s	207	2.48	A large shrubby mass adjoining rear of structure. Is maintaining good vigour and vitality would sustain substantial pruning if required.		M	B2
Note is made that directly adjoining the boundary wall, but within the public open space to the north-east of the subject site, there is substantial but variable shrubbery. This comprises Laurel, Viburnam, Holly, Pyracantha, Berberis, Rosa, etc. The material appears to have been installed to create a buffer/marginal planting between the adjoining open space and the rear of the existing commercial premises.																

Appendix 3

Arboricultural Report and drawings Compiled in August 2019

Arboricultural Report

Trees at Proposed Development at
Brady's Pub
Old Navan Road
Dublin 15
D15 W3FW
August 2019

The Tree File Ltd
Consulting Arborists
Ashgrove House
Kill Avenue
Dun Laoghaire
Co Dublin
01-2804839

Contents

Associated Drawings

This report is to be read with the drawings noted below

	Drawing Title	Drawing Subject
1)	**D1-TCP-Bradys-08-19**	**Tree Constraints Plan** A plan depicting the predevelopment location, size, calculated constraints and simplified tree quality category system
2)	**D2-AIA-Bradys-08-19**	**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)	**D3-TPP-Bradys-08-19**	**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 has been prepared by-
Andy Worsnop Tech Arbor A, NCH Arb (PTI LANTRA)
The Tree File Ltd
Ashgrove House
Kill Avenue
Dun Laoghaire
Co Dublin

Report Brief and Context

This report was requested by "**Bartra Property (Castleknock) Limited**". It comprises an Arboricultural review of the proposed development project. The various elements of this report provide an assessment of the sites existing tree population in respect of suitability for retention and sustainability in their current scenario, as well as an assessment of their potential for sustainable retention in the post-development scenario and the effects of the development process. It also provides information in respect of the necessary tree protection and the avoidance of damage to trees during the construction process, required to achieve sustainable tree retention.

This assessment summarises the Arborists findings and recommendations, arrived at after the screening process and considerations defined within the "Implication Assessment Scope" 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 and 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.

This report must be read with the three associated drawings.

1. The "Tree Constraints Plan" drawing "D1-TCP-Bradys-08-19" that provides a graphic representation of tree survey data, depicting the constraints asserted by the site trees, as well as a categorisation of their condition and potential value.

2. The drawing "Arboricultural Implication Plan" drawing, "D2-AIA-Bradys-08-19" depicts the expected impacts by overlaying the tree constraints information with the architectural and engineering information.

3. The "Tree Protection Plan", "D3-TPP-Bradys-08-19" depicts the location and extent of the tree protection measures required to prevent damage and disturbance to trees intended for retention.

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, the accuracy of this assessment premised on all its elements/recommendations, and the omission or alteration of any part can radically alter outcomes in respect of sustainable tree retention.

Report Summary

The proposed development will, by its nature, result in the substantive modification of much of the site area. Accordingly, there is little potential to retain trees within the “red line” zone.

In some instances, and a because of poor or deteriorating health, such losses are of little concern, in that the affected trees offered little or no sustainability. In many other cases, the small stature and limited visual importance, offers minimal individual visual importance, though the cumulative effect is greater.

The development also amplifies existing issues with off-site trees and particularly, those on the entrance road to Talbot Downs. These trees have been installed within a severely constrained environment and one that would not accommodate mature specimens. This fact when combined with what will be unavoidable disturbance by the proposed works means that they cannot be retained without risk. Accordingly, and notwithstanding good overall health, it is recommended that they be removed and possibly replaced, though any replacement must be chosen and installed in line with what will remain a particularly constrained ground environment. It is noted that during a previous application, this approach was broadly accepted.

Arising from the public open space to the north of the development, two additional trees cause concern. The first, a Lime (No.30) could potentially be disturbed by the proposed works, but only to a minor extent and this could be readily avoided with care at construction time and the adoption of “manual only” procedures, under the guidance of a project Arborist, when working on the boundary treatment within 4.00 metres of the tree stem, though it is considered unlikely that root material will have trespassed beyond the line of this structure. Nonetheless, the tree is close enough to the subject site to see a current crown encroachment on the buildings that will likely require pruning to facilitate works.

Notwithstanding the above, this tree’s crown encroaches upon the existing structures and the proposed structures, thereby raising some concern in respect of encroachment over time. The tree’s proximity to the site also raises some concern regarding the potential impacts to tree roots considering the intention to replace the existing boundary wall with a plinth railing. It is likely that actions will be necessary in respect of current encroachment and the facilitation of proposed works that will likely involve tree pruning works both at development time and periodically over time in respect of future growth and encroachment. This could readily be incorporated into a management agreement between the facilities management and FCC Parks Dept.

Whilst slightly “set-back” from the site boundary, Lime trees Nos.32 and 33 (to a lesser extent Lime Nos.34 and 35) raise similar issues in that their current young age and small size will see a great increase in size and inevitable encroachment issues in time. Accordingly, there may be a requirement for management intervention, such as “crown-reduction” type pruning within the foreseeable future.

As an alternative to accepting potentially onerous and long-term management requirements, there would be merit in considering by agreement, a combined management and replacement scheme. An example of this might include installing an agreed number of trees of suitable species at more sustainable ranges from the buildings for development over the forthcoming years. During that agreed time, the existing trees could be managed by way of pruning to maintain clearance and avoid encroachment, up until

a time whereby the new trees have attained a reasonable stature so as to allow for the removal of tree Nos.30, 32 and 33 without undue loss of amenity to the adjoining area.

Whilst dealing with the same boundary, a second tree, Goat Willow (No.31) appears to be a self-seeded specimen that is arising immediately adjoining the boundary wall. This location is unsustainable, and if retained will result in boundary disturbance and wall damage. Accordingly, it is advised that the tree is removed.

The remaining trees arising from the park area tend to be in excellent health and offer immense sustainability. Nonetheless, the species involved, Lime, suggests that future growth may well see the development of encroachment issues that may require periodic pruning intervention over time.

Site Description

The site in question is broadly square, bounded by the old Navan Road to the south-west and Talbot Downs to the north-west.

The site appears broadly level, comprising a substantially developed and artificial context, being dominated by an existing public house to the north of the site, with much of the remaining site space comprising vehicular access and car parking surfaces.

The Vegetation with which this report deals tends to be located at positions adjoin the boundaries, both within and immediately outside of the site boundary.

Pre-Development Arboricultural Scenario

Tree No.1 is affected by decay brought on by an identified pathogen that will rapidly undermine its mechanical integrity thereby undermining its suitability for retention.

Tree number 3 is of particularly poor quality being affected by decay causing pathogens and thus is of dubious and highly limited retention merit best.

To the south-west of the site and adjoining the old Navan Road boundary, the tree population is highly mixed, including several trees that have effectively failed, others of poor quality and only two of reasonably good quality. Unfortunately, the scenario within which the trees exist is particularly constrained, thereby questioning any realistic longer-term sustainability considering the potential size of as may be attained by species such as Lime.

Tree Nos.19 to 29 comprise an alignment of trees adjoining the entrance to Talbot Downs to the north-west of the site. These trees are relatively young, healthy and still vigorous, asserting immense potential for continued size increase over time. As they arise from a particularly limited ground space between the gable wall of the existing structure and the kerb edge of the adjoining road then some concern exists regarding their sustainability. Currently their encroachment upon the existing building is limited and has been managed by pruning, though ultimately, potential growth in such constrained circumstances grossly undermine any realistic sustainability.

To the north-east of the site, the neighbouring public open space supports several trees, the majority of which are of good condition. Nonetheless, some issues exist, including the proximity of Goat Willow No.31 to the boundary wall and its potential to cause growth related damage over time. Additionally, the current size and proximity of Lime No.30 already sees massive encroachment on the existing building, well illustrating the potential for growth related encroachment upon the site in the future, both from this tree but potentially from tree Nos.32 to 34 in the future.

Nature of Proposed Works and Likely Impacts

Bartra Property (Castleknock) Limited intend to apply to An Bord Pleanála for permission for a strategic housing development at this 0.3,170 ha site at Brady's Public House, Old Navan Road, Dublin 15, D15 W3FW.

The development will principally consist of: the demolition of the existing part 1 to part 2 No. storey over partial basement public house and restaurant building (1,243 sq m) and the construction of a part 1 to part 5 No. storey over basement Build-to-Rent Shared Living Residential Development (6,549 sq m) comprising 210 No. bedspaces (182 No. single occupancy rooms, 4 No. accessible rooms and 12 No. double occupancy rooms).

The development also consists of the provision of communal living/kitchen/dining rooms at each floor level to serve the residents of each floor; communal resident amenity spaces for all residents including tv/cinema room at basement level, gymnasium and lounge/reception area at ground floor level, a library/study at third floor level and a private dining room at fourth floor level; external roof terrace at third floor level (78 sq m) facing north-east, north-west and south-west; external communal amenity courtyards at basement (170 sq m) and ground floor level (336 sq m); external amenity space at basement level accessed from the communal living/kitchen/dining room (30 sq m); balconies at third floor level facing north-east/north-west (14.35 sq m); resident facilities including launderette, linen store, accessible WC and bin store; 2 No. accesses to the public park along the north-eastern boundary; 2 No. car-share parking spaces; a lay-by and delivery bay; emergency gate access to the courtyard (north-west boundary); bicycle parking; boundary treatments; hard and soft landscaping; plant; PV panels; substation; switch room; generator; lighting; and all other associated site works above and below ground.

Whilst the footprint of the proposed structures, buildings, basements, access roads, parking area and paths are readily understandable regarding the spatial requirements, additional and ancillary space is commonly required for construction works and associated activities and access.

Site trees can readily be affected by one of three primary impacts including-

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. A change in site context or a change in occupation or use that makes a tree unsuitable for retention.

Identification of Impacts

The review of likely Arboricultural implications is based upon the recommendations and criteria as defined within BS5837: 2012 Trees in Relation to Design, Demolition and Construction – Recommendations. The assessment attempts to consider both direct and indirect implications, where and if they apply to the subject development. The "assessment" tends to concentrate on any activity that affects the tree, its local environment, or the context within which it might be retained.

This report, its findings and recommendations have arisen from the scrutiny of development proposal drawings as provided by TODD Architects, in the form of AutoCAD drawings "18038-00-200-101-Planning, Ground Floor Plan.dwg" and "18038--10-200-101-Planning, Basement.dwg", drainage and levels information as provided by CS Consulting Group Consulting Engineers in the form of AutoCAD drawing "B094 - 001 Rev B - FOUL AND STORM GROUND FLOOR DRAINAGE_BOUND.dwg", "B094 - 002 Rev B - BASEMENT LEVEL DRAINAGE LAYOUT_BOUND.dwg" and "B094 - 008 - PROPOSED WATERMAINS LAYOUT.dwg" in conjunction with the most recent tree survey data (as appended to this report). Whilst no information was available in respect of proposed any M&E installations, the orientation of the site and the proposal for broad clearance would suggest no likelihood of additional impacts, over and above though already envisaged.

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.

In respect of tree impacts, 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. Additionally, the tree specimens have been evaluated in respect of health, sustainability and suitability for retention within the new context and adjoining the proposed development. Such considerations can readily affect the "predevelopment suitability for retention" scenario.

The perceived development impacts have been illustrated graphically on drawing "D2-AIA-Bradys-08-19", where trees denoted with "Broken Red" crown outlines will be removed and those denoted with "Continuous Green" crown outlines will be retained.

Arboricultural Implications of Proposed Development

The review of trees has noted that some specimens are of particularly poor health and indeed may already constitute a hazard. Such trees, including Nos.1, 5, 7 and 9 must be removed and should not be considered for retention. Such trees might reasonably be disregarded as development impacts.

Other trees on site were found to be of poor health and thus provide minimal sustainability. Most such trees tend to be relatively small, thereby creating a scenario whereby the impact of their loss is greatly diminished.

As noted, the site area is hugely constrained relative to the development proposals. These proposals include the excavation of a basement which, together with the construction of a larger ground floor facility

and the provision of vehicular access, the provision of underground services and other facilities, effectively consumes a large proportion of the site area. Additionally, and over and above the completed structures, it is expected that substantial additional space will be required to facilitate the construction process. As the primary prerequisite to sustainable tree retention is the conservation and preservation of existing ground conditions, then it appears unlikely that this can be attained in this instance.

The proposed development will affect trees both within and adjoining the site. In this respect, notable concerns have arisen regarding the extreme proximity of trees on the access road to Talbot Downs, to the west of the site. These young, healthy but potentially large-growing Norway Maple trees arise from a highly limited and narrow grass margin, little more than 2.00 metres wide and directly adjoining the gable wall of the existing structure. The proximity of the trees to the existing structure ranges between 0.70 and 1.50 metres and the adjoining road raises concerns regarding rooting constraint in a westerly direction.

The species has the potential to attain heights between 15.00 and 25.00 metres and can develop a stem diameter that exceeds 1.00 metre. This scenario raises insurmountable issues of sustainability and a review suggests the trees are, regardless of development, unsustainable beyond the immediate short-term and that retention to maturity and full size would be impossible. This issue will be exacerbated by the proposed works and fears exist that the demolition/removal of the existing structures may, through their extreme proximity to the trees, undermine their stability, safety and thus, suitability for retention. Accordingly, the proposed development will require the removal and/or replacement of these trees.

Should replacement planting be required, then the constrained ground environment must be considered, and any species selection should account for the limited space and potential to disturb adjoining structures and thus be contextually appropriate.

A similar scenario exists in respect of the proximity of one tree (No.30) to the north of the development site and is arising from the public open space. This tree, through proximity to the existing site boundary already encroaches upon the existing structures. These existing structures will be removed but replaced by new structures and only slightly greater range, thereby raising some concern in respect of encroachment over time. The tree's proximity to the site also raises some concern regarding the potential impacts to tree roots considering the intention to replace the existing boundary wall with a plinth railing. However, the calculated root protection zone is only marginally affected within the red line area and thus, consideration of "clause 5.3.1.a) and b)", is considered applicable and thus it is considered the tree can be sustainably retained if care is exercised during the demolition and construction works, for example by using manual means to deal with the demolition and construction works within circa 4.00 metres of the tree's stem. Nonetheless, actions will be necessary in respect of current encroachment and the facilitation of proposed works that will likely involve the application of "Crown Reduction" type tree pruning works (BS3998-2010), both at development time and periodically over time in respect of future growth and encroachment. This could readily be incorporated into a management agreement between the facilities management and FCC Parks Dept.

In respect of the above and whilst the "set-back" from the site for tree Nos.33 to 35 and the development area is greater, the current young age and small size of these trees will see a great increase in size and possible encroachment issue within two decades. Accordingly, there may be a requirement for management intervention, such as "crown-reduction" type pruning within the medium term.

The above issues as relate to tree Nos.30, 32 and 33 raise issues of sustainability over time, even with the application of pruning management. Therefore, there would be merit in considering by agreement, a combined management and replacement scheme. An example of this might include installing an agreed number of trees of suitable species at more sustainable ranges from the buildings for development over the forthcoming years. During that agreed time, the existing trees could be managed by way of pruning to maintain clearance and avoid encroachment, up until a time whereby the new trees have attained a reasonable stature so as to allow for the removal of tree Nos.30, 32 and 33 without undue loss of amenity to the adjoining area.

Attention is drawn to Goat Willow No.31, that arises from a position outside of the site but directly adjoining (in contact with) the northern boundary wall of the site. This specimen appears to be self-seeded and is most regularly regarded as a weed species and would not normally be selected for planting within amenity areas. In this instance and if retained, ongoing growth will result in damage to the boundary wall, or, should the wall be replaced, the process will result in gross damage to the tree. Accordingly, and regardless of development or not, this tree is recommended for removal.

Combining the above issues and considerations, it appears that no trees can be retained within the subject site and that moreover, the trees arising from close beside but outside of the sites western boundary cannot be retained. Accordingly, and generally in line with the previously permitted development, the apparently retainable tree population will be limited to the public open space to the north of the site.

The extent of tree planting envisaged across the site will in part mitigate the above losses. Details have been provided within the proposed landscape plans as provided by “the big space” Landscape Architecture.

Particulars of Tree Loss

The drawing “D2-AIA-Bradys-08-19” 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 black dashed outlines.

The nature and extent of the proposed development and its unavoidable need to convert or otherwise disturb the existing site conditions effectively requires the removal of all site trees as outlined below-

The site currently supports 4No. category “U” (unsustainable or unsuitable for retention) trees including Nos.1, 5, 7 and 9.

The review area supports a total of 35No. individual trees, 19 of which arise from outside of the “red line” area, including-

- 4No. category “U” trees
- 0 category “A” trees,
- 18No, category “B” trees,
- 9No. category “C” trees,

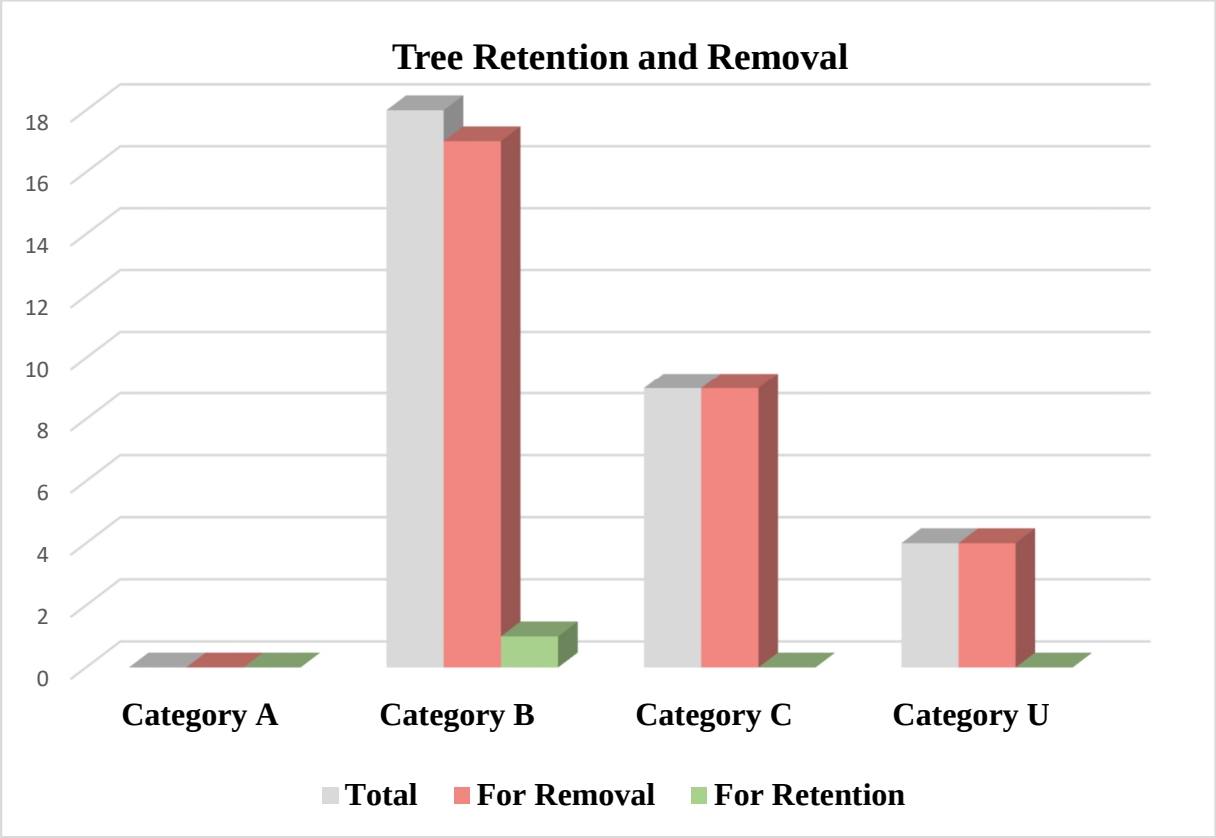
Normally, all category “U” trees will be removed (many require removal regardless of development) (4 items cumulative).

Of the site's "fair" quality, category "B" trees, the development works will require the removal of tree Nos.2, 4, 8, 12, 13, 14, 16, 19, 20, 21, 24, 25, 26, 27, 28, 29 and 30. (17 items cumulative)

Of the site's category "poor" quality "C" trees, the development works appears to require the removal of Nos.3, 6, 10, 11, 15, 17, 22, 23 and 31 (9 items cumulative).

The tree loss breakdown for the site will be-

- 4 No. Category U trees
- 17 No. Category B trees
- 9 No. category C trees



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 construction exclusion type tree protection, whether vertical or horizontal, all must conform or equate to the recommendations of Section 9, 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 "D3-TPP-Bradys-08-19".

In this drawing, the edges “Construction Exclusion Zone” is defined by the bold “Orange” lines that represent the proposed location of the primary protective “Construction Exclusion Fencing”, with the “Orange” hatched area representing the primary “Construction Exclusion Zone”.

The tree protection plan includes the use of special materials and methodologies intended to minimise the impacts of structures near trees. This would include the guidance by a project Arborist and use of manual procedures in respect of the removal of the existing boundary wall and the creation of the new “railed” boundary close to tree No.30 at the north of the site.

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 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 and 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, the proposed development and particularly its unavoidable loss of trees will raise exposure and shelter loss issues in respect of those trees that will remain. For this reason, all retained trees should be reviewed immediately after the primary site clearance works with a view to updating and amending the “preliminary management recommendations” provided in the original tree survey 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

Set out below is a broad and prescriptive method statement, intended to provide advice and guidance for most events, occurrences and issues that arise in respect of trees and tree protection on typical development sites. This statement intends to instruct and to advise regarding the execution of the proposed development works in a manner that will be least detrimental to the retained tree population.

Drawings

This Arboricultural Method Statement must be read with the associated "Tree Protection Plan" drawing, "D3-TPP-Bradys-08-19". This drawing, as was submitted as part of the Arboricultural planning package must be updated and confirmed for "Construction" stage purposes, for example by the inclusion of specific tree protection ranges and dimensions. Accordingly, and in respect of tree protection ranges from any tree, reference must be made to the root protection area radius as defined for that tree within the tree survey table.

Method Statement Use

This Method Statement should be used under the direct guidance of the project Arborist, as site/project specific issues arise, and new information becomes available, it may be amended and adjusted by him/her to address project-specific issues. In this respect, limited "construction management" detail was available at compilation time, and therefore this method statement deals with tree protection in its broadest terms and may require modification to deal with project specific details to this development, e.g. to account for specific plant/machinery/access issues.

Amendments and Modifications

In some situations, and with the adoption of specific ground protection procedures and structures, parts of the above defined "Construction Exclusion Zones" might still be utilised during the construction process. In respect of vehicular/plant/machinery access, the provision of suitable ground protection measures that avoid soil compaction and maintain drainage/percolation and breathability, that are acceptable to the project Arborist and subject to engineering confirmation, can be utilised. Such might include the various form of "roll-out" temporary access surfaces or might include the "three-dimensional cellular confinement systems that utilise specific forms of confined hard-core. The effective use of either system is subject to the avoidance of excavation and level changes, by use upon existing ground surfaces. Where provided, the above systems would allow for the relocation of the "Construction Exclusion Fencing" to exclude and provide access to and across the newly protected areas.

Works Related Impacts

In respect of any necessary and unavoidable structures 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. The adoption of "manual only" procedures so that root damage can be minimised, for example by hand digging or the use of "air-spades" for excavation or trenching, may be required. All such works must be undertaken under the guidance of the project Arborist who will advise on likely repercussions and necessary tree management issues.

Tree Works Specification Updates

It must be noted that many tree management recommendations, as stipulated within the "Preliminary Management Recommendation" section of the primary tree survey, were made prior to any grant of permission, relate to a changing site context and may no longer be applicable, or may require modification to account for the changes that the built project will cause.

General Method Statement

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.

1.0) Overview and Implementation

1.1 **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 A review must be undertaken to identify any issues as may have arisen in respect of planning conditions or details as may have changed between the design stage and construction stage development details.

1.2 The project Arborist or another qualified person will oversee the application of all tree protection measures and any necessary modifications to this Method Statement to provide a basis upon which tree protection will be managed on the construction site.

1.3 The tree constraints (radial range) associated with any tree to be retained on site is to be regarded as sacrosanct and is not to be entered for any reason without confirmation by, and agreement with, the project Arborist.

1.4 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.

1.5 As unforeseen tree losses may compromise project planning permissions, it is imperative that issues relating to tree protection 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 including tree felling and cutting as defined in the Arboricultural report.

2.3 The Project Arborist will oversee and liaise with the tree works contractor regarding the nature and extent of tree/woodland access to facilitate felling works.

2.4 On completion of the felling works, the tree management plan will be reviewed by the Project Arborist to address changed context, land use, rates of occupation and use and to account for potential impacts upon the newly built environment, thereby amending (if necessary) the "preliminary Management Recommendations" stipulated in the original Tree Survey.

2.5 Any revised pruning/cutting works will be agreed with the local authority and applied at the earliest possible opportunity.

2.6 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.

2.7 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". This must be completed in a "Progressive" manner, with each section being removed whilst utilizing protection systems still in situ. Such works must be agreed and overseen by Project Arborist.

2.8 At construction works completion stage, all retained trees will be reviewed regarding the condition and longer-term management recommendations and regarding site hand-over.

3.0) Tree Protection

3.1 All tree protection measures must be agreed, overseen and verified by the Project Arborist prior to works commencement and regarding maintenance for the duration of site works

3.2 Tree protection will be based upon drawings "D3-TPP-Bradys-08-19" (Construction version) that relates to all trees for retention, as well as the location of all tree protection measures.

3.3 Unless specifically stipulated by the project Arborist, the default minimum range of protective fencing or construction exclusion fencing is the range stipulated in the primary tree survey for that tree and within the "RPA" (root protection area) column.

3.4 If entry into the "RPA" (Root Protection Area) zones becomes unavoidable, ground protection systems agreed with the project Arborist, that allow for the relocation of the "Construction Exclusion Fencing", will provide for an extension of accessible ground space.

3.5 All construction, works or access areas must be enclosed and defined by protective fencing, this comprising the "Construction Exclusion Zone"

3.6 Such a fence must be fit for purpose and commensurate with the nature of activity expected upon the site and should be 2.00 metres in height, constructed of robust materials and be suitably braced to withstand impact and may include sheet panels attached to timber posts or weld-mesh panels supported upon a scaffold bar system. All footings must be firm and immobile and must not use mobile rubber or cement footings, (an illustration (Fig 1-facsimile of BS5837: 2012, is appended to this document to illustrate a possible option for the construction of the protective fencing)

3.7 The fence should be affixed with notification signs such as "TREE PROTECTION AREA - KEEP OUT"

3.8 Where applicable, structures such as "lock-ups", offices or other temporary site building, <u>not requiring excavation or underground ducting</u>, 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.

3.9 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 ground.

4.2 Ground protection can comprise the use of proprietary materials/structures 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 structure

4.5 Where proprietary ground protection systems are utilised, it is imperative that the manufacturer's specifications and recommendations are adhered to in full regarding the provision and installation of this type of ground protection.

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 The "RPA" zone associated with all retained trees must be protected from the effects of construction works.
5.3 Amended tree protection measures as agreed with the Project Arborist and including the relocation of fencing and the provision of ground protection will be installed in accordance with the tree protection measures prior to commencement.
5.4 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.
5.5 Preference must be given to manual labour and techniques within the fenced "RPA" zone.
5.6 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 No open trenching will be allowed. All works must be commensurate with the preservation of the affected tree root system.
6.4 Preference will be given to trench-less techniques including Mole-piping, Directional-drilling manual hydro-trenching (high-pressure water), "Air-Spade" or broken-trench techniques.
6.5 All works carried out within the "RPA" zone or "Construction Exclusion Zone" must be agreed with and supervised by the Project Arborist.

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 in respect of possible amendments to the "Preliminary Management Recommendations" and 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.
7.4 Additional works including formative pruning, crown reduction etc., may be nominated for various trees in the interests of mitigating the potential effects of exposure and isolation.
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 All Tree Surgery/Pruning works will be undertaken under the guidance of the Project Arborist; the precise nature and extent of work being agreed before commencement.
7.7 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.

9.3 All persons undertaking works either before or after the principal development (site investigation works, Landscape Contractors) are subject to the above requirements

9.4 Works outside the "Construction Exclusion Zone" must be controlled to create no potential secondary hazard to tree health.

9.5 Large loads accessing the site must be reviewed regarding clearance and potential tree damage.

9.6 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.

9.7 No fires can be lit within 5 metres of any tree canopy extent.

9.8 No tree will be used for support regarding cables, signs etc.

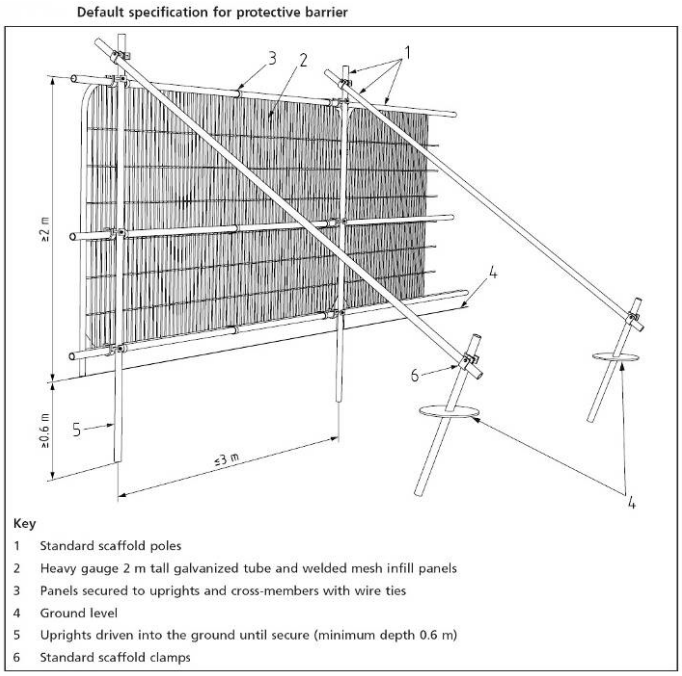
9.9 The trees should be reviewed on a regular basis throughout the development process and on completion. At that time, additional recommendations regarding tree management may be required.

9.10 Any issue that has the potential to affect site trees must be brought to the attention of the Project Arborist for review and comment.

9.11 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.

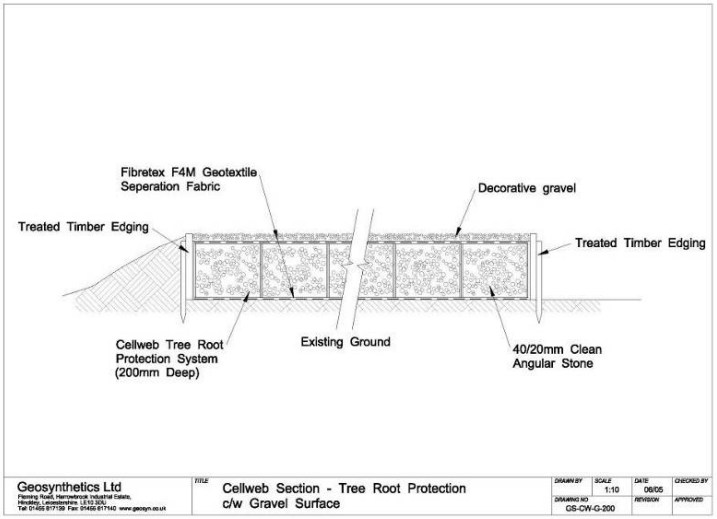
9.12 It is likely that liaison/agreement will be required with the Local Planning Authority regarding compliance with, as well as the verification of the required tree protection measures.

Fig 1



This image illustrates one possible option for the construction of the "Construction Exclusion Zone" protective fencing.

Fig 2



This image shows a proprietary brand of "Cellular Confinement" system that will provide load-bearing capacity for vehicular passage while preserving the ground environment beneath the system.

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 is likely that changes in site usage, development or other environmental changes will require an amendment of a 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 "D1-TCP-Bradys-08-19" 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 "D1-TCP-Bradys-08-19". 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 April of 2016 for the previously permitted development. It was revisited and updated in July of 2018 and updated in April 2019. 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 proposes 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 summer and 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 *(Fraxinus excelsior)*	M	P	15.00	3.00	7.00	7.50	8.00	8.00	1	875	10.50	A large specimen previously known to be affected by basal decay is now infected by Polyporus squamosus, a pathogen that will result in extensive internal decay. Tree is deteriorating rapidly and will ultimately be subject to mechanical failure.	Remove.	N/A	U
2	Silver Birch *(Betula pendula)*	E/M	G/F	6.50	1.00	1.25	1.25	1.25	1.25	1	143	1.72	Young and still vigorous with substantial potential for continued growth over time.		L	B2
3	Ornamental Cherry *(Prunus variety)*	M	F/P	9.00	1.50	5.00	5.00	6.00	6.50	1	567	6.80	A relatively large Cherry of variable crown vigour with note of dieback and decline evident about western crown. Lower stem exhibits evidence of fungal activity and internal decay. Differing crown form suggests re-suckering and reversion from a planted horticultural variety with much of crown now dominated by Wild Cherry. Crown has sustained prior damage and supports evidence of Phellinus attack.	Would be considered suitable only for extreme short-term retention, after pruning and subject to regular review.	S	C2

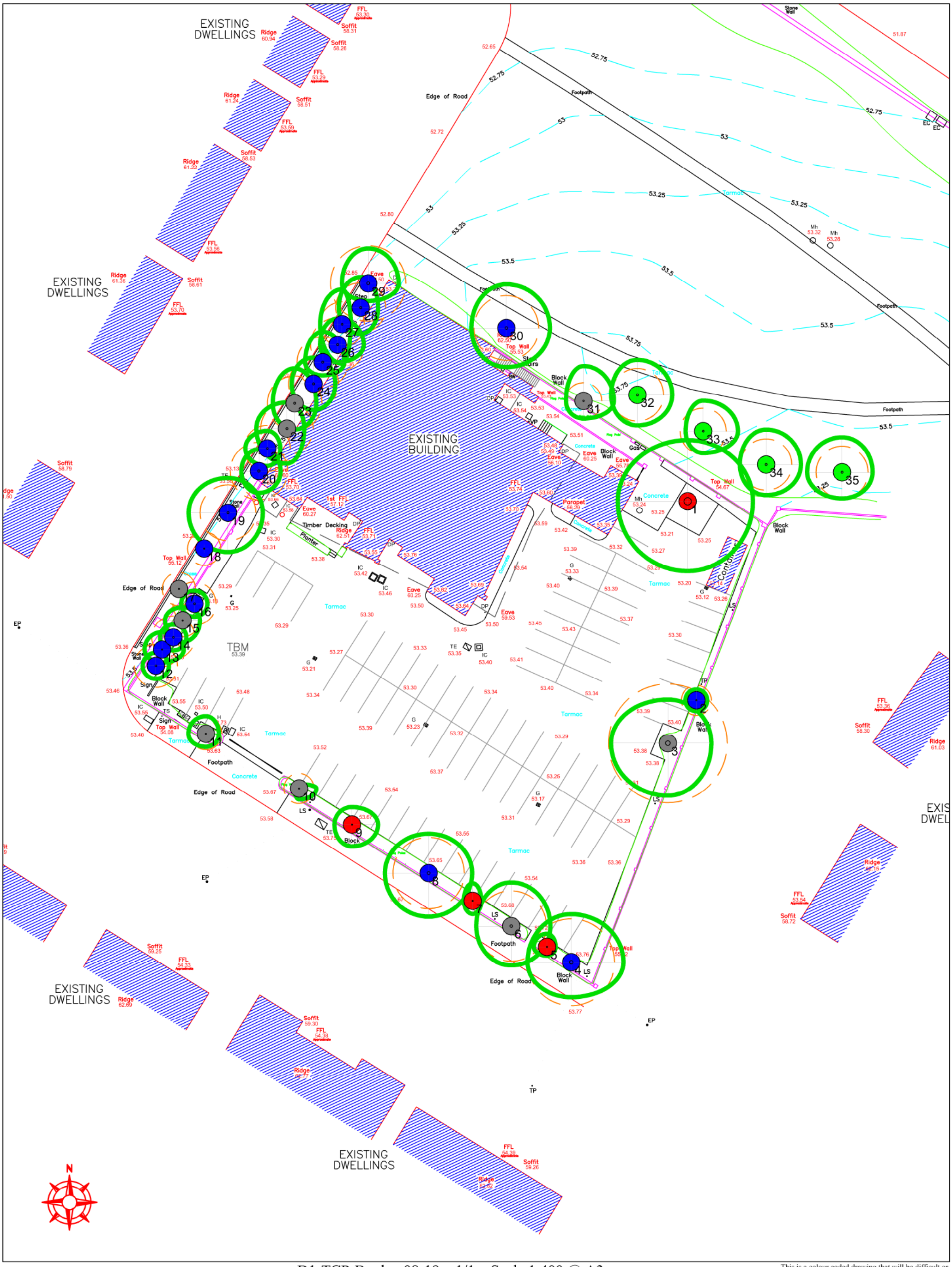
No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
4	Lime *(Tilia europea)*	E/M	G/F	12.00	1.25	5.50	6.00	4.00	5.00	1	414	4.97	Young and still vigorous, asserting immense potential for continued growth over time. Tree has sustained substantial cutting back on south-western side of crown both at lower levels to maintain footpath clearance and at higher levels because of passage of overhead utility cables. Crown is now notably distorted and deformed. Middle-crown supports notable ivy cover.	Review regard retention context and suitable management.	M	B2
5	Rowan *(Sorbus aucuparia)*	E/M	P	5.00	1.25	1.50	1.00	1.00	1.50	1	162	1.95	Chronically suppressed with coalescing correction between coalescing grounds of tree Nos.4 and 6. Is no longer sustainable.	Remove.	N/A	U
6	Lime *(Tilia europea)*	E/M	G/F	12.00	1.00	5.00	4.50	4.50	4.00	1	337	4.05	Slightly distorted form having sustained localised mechanical damage presumably relating to vehicular passage. Higher south-western crown has been substantially pruned because of passage of overhead utility cables. General vigour and vitality are good asserting immense potential for continued growth over time. Heavily divided crown at 2.25 m raising concern in respect of compression fork development of possible predisposition towards failure.	Review regard retention context.	M	C2
7	Rowan *(Sorbus aucuparia)*	E/M	D	5.00	1.00	2.00	1.00	1.50	1.00	1	166	1.99	Completely dead and in need of removal.	Remove	N/A	U

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
8	Norway Maple *(Acer platanoides)*	E/M	P	7.50	1.25	4.50	5.00	5.00	5.00	1	341	4.09	Central crown apex is now subject to dieback and decline though lower Crown remains vigorous. Growth is now spreading, and tree is considered unsustainable beyond short-term.	Review regularly regarding suitability for retention.	S	C2
9	Rowan *(Sorbus aucuparia)*	E/M	P	4.50	1.00	2.00	3.00	2.50	2.00	1	169	2.02	Is subject to chronic crown dieback and deadwood development. Is unsuitable for retention.	Remove.	N/A	U
10	Swedish Whitebeam *(Sorbus intermedia)*	S/M	P	3.50	1.00	0.50	2.00	1.25	0.50	1	143	1.72	Appears to be subject to higher Crown decline though this is limited to upper crown twigs only at present.	Review regularly.	S	C2
11	Rowan *(Sorbus aucuparia)*	E/M	F/P	4.25	1.50	2.00	1.50	1.50	2.00	1	153	1.83	Appears to be of reduced vigour with visible elements of mid-crown deadwood.	Review regularly.	S	C2
12	Lawson Cypress *(Chamaecyparis lawsoniana)*	M	F	5.00	0.50	1.50	1.50	1.50	1.50	1	207	2.48	Young and relatively vigorous was have sustained disturbance and minor damage at lower levels. Asserts immense potential for continued growth over time.		M	B2
13	Rowan *(Sorbus aucuparia)*	E/M	F	5.00	1.75	2.00	2.50	1.50	2.00	1	166	1.99	Slightly distorted but maintaining reasonable vigour and vitality.		L	B2
14	Lawson Cypress *(Chamaecyparis lawsoniana)*	M	F	5.00	0.50	1.50	1.50	1.50	1.50	1	207	2.48	Young and relatively vigorous was have sustained disturbance and minor damage at lower levels. Asserts immense potential for continued growth over time.		M	B2
15	Rowan *(Sorbus aucuparia)*	E/M	P	4.00	1.75	1.50	2.00	2.50	2.00	1	159	1.91	Is subject to notable dieback and decline about higher crown suggesting limited sustainability.	Review annually regarding ongoing suitability retention.	S	C2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
16	Lawson Cypress *(Chamaecyparis lawsoniana)*	M	F	5.00	0.50	1.50	1.50	1.50	1.50	1	207	2.48	Young and relatively vigorous was have sustained disturbance and minor damage at lower levels. Asserts immense potential for continued growth over time.		M	B2
17	Rowan *(Sorbus aucuparia)*	S/M	P	3.50	0.50	0.50	0.50	0.50	0.50	1	159	1.91	Is subject to notable dieback and decline about higher crown suggesting limited sustainability.	Review annually regarding ongoing suitability retention.	S	C2
18	Rowan *(Sorbus aucuparia)*	S/M	F	3.50	0.50	0.50	0.50	0.50	0.50	1	159	1.91	Young and recently installed specimen.		L	B2
19	Norway Maple *(Acer platanoides)*	E/M	G/F	9.00	2.25	4.00	4.00	4.50	4.50	1	267	3.21	Young and vigorous with immense potential for continued growth over time. Has sustained minor lower crown pruning.		L	B2
20	Norway Maple *(Acer platanoides)*	E/M	G/F	12.00	3.00	2.50	2.50	2.50	2.00	1	274	3.29	A tall and upright specimen directly adjoining gable wall of existing building. Asserts immense potential for continued growth.		L	B2
21	Norway Maple *(Acer platanoides)*	E/M	G/F	10.00	2.00	2.00	1.50	2.00	2.50	1	220	2.64	Upright and directly adjoining gable wall of existing structure. Asserts immense potential for continued growth over time.		L	B2
22	Norway Maple *(Acer platanoides)*	E/M	F	11.00	2.25	3.00	2.00	4.00	3.50	1	251	3.02	Slightly distorted and directly adjoining gable wall of adjoining structure. Is maintaining good vigour and vitality asserts substantial potential for growth increase over time.		M	C2
23	Norway Maple *(Acer platanoides)*	E/M	F	12.00	3.00	4.00	2.50	3.00	2.50	1	261	3.13	Young and vigorous, maintaining good vigour and vitality but is already been subject to substantial damage affecting north-western most ascending stem. Will require management intervention.		M	C2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
24	Norway Maple *(Acer platanoides)*	E/M	F	12.00	3.00	3.00	2.50	3.00	2.50	1	239	2.86	Tall and upright, directly adjoining gable wall of adjoining structure. Asserts immense potential for continued growth over time.		L	B2
25	Norway Maple *(Acer platanoides)*	E/M	F	11.00	3.00	3.50	2.50	1.50	2.00	1	245	2.94	Slightly one-sided but maintaining good vigour and vitality asserting immense potential for continued growth over time.		L	B2
26	Norway Maple *(Acer platanoides)*	E/M	G/F	11.00	4.00	3.00	3.00	2.00	2.00	1	258	3.09	One-sided but maintaining good general vigour and vitality. Asserts immense potential for continued growth over time.		L	B2
27	Norway Maple *(Acer platanoides)*	E/M	F	9.00	3.50	4.00	1.00	4.50	2.50	1	213	2.56	Notably one-sided and unbalanced away from building and towards road. Young and vigorous asserts immense potential for continued growth over time.		L	B2
28	Norway Maple *(Acer platanoides)*	E/M	G/F	11.00	2.00	3.50	2.00	3.00	2.50	1	239	2.86	Young and vigorous, arising from position directly adjoining gable wall of adjoining building. Asserts immense potential for continued growth over time.		L	B2
29	Norway Maple *(Acer platanoides)*	E/M	G/F	10.00	2.00	4.00	3.50	2.00	3.00	1	360	4.32	Young and vigorous asserting immense potential for continued growth over time.		L	B2
30	Lime *(Tilia europea)*	E/M	G/F	12.00	1.75	5.00	5.00	4.50	4.00	1	309	3.71	Young and vigorous with immense potential for continued growth. Located arising from open space to north of site. Is already of a size where substantial encroachment is occurring regarding existing building		L	B2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
31	Goat Willow *(Salix caprea)*	E/M	F	6.00	0.00	4.00	3.50	2.00	2.00	1	175	2.10	Shrubby mass arising from undergrowth directly adjoining boundary wall. Is unlikely to have been planted and is most likely to be naturally arising. Typically considered as a weed species and not regularly retained within ornamental or commercial planting.		M	C2
32	Lime *(Tilia europea)*	E/M	G/F	10.00	2.00	4.00	4.00	3.50	3.00	1	251	3.02	Slightly unhinged by joining willow but otherwise maintaining good general vigour and vitality.		L	A2
33	Lime *(Tilia europea)*	E/M	G/F	10.00	2.00	3.50	4.00	2.50	2.00	1	220	2.64	Slightly one-sided as result of suppression by nearby Ash but is of otherwise of good form and vigour.		L	A2
34	Lime *(Tilia europea)*	E/M	G/F	10.00	2.25	4.00	4.00	3.50	3.00	1	245	2.94	Of typically good form and vigour asserting immense potential for continued growth over time.		L	A2
35	Lime *(Tilia europea)*	E/M	G/F	9.00	2.25	4.00	3.50	3.00	4.00	1	248	2.98	Young and vigorous asserting immense potential for continued growth over time.		L	A2
SG1	Shrub Group 1 Cherry Laurel *(Prunus laurocerasus)*	M	F	2.25	0.00	n/a	n/a	n/a	n/a	m/s	207	2.48	A large shrubby mass adjoining rear of structure. Is maintaining good vigour and vitality would sustain substantial pruning if required.		M	B2
Note is made that directly adjoining the boundary wall, but within the public open space to the north-east of the subject site, there is substantial but variable shrubbery. This comprises Laurel, Viburnam, Holly, Pyracantha, Berberis, Rosa, etc. The material appears to have been installed to create a buffer/marginal planting between the adjoining open space and the rear of the existing commercial premises.																



D1-TCP-Bradys-08-19 1/1 _ Scale 1:400 @ A3

This is a colour coded drawing that will be difficult or impossible to interpret if reproduced in black and white

Ashgrove House
Kill Avenue
Dun Laoghaire
Co Dublin

Tel. 01 2804839
mob. 086-3819011
e-mail - thetreefile@eircom.net

The Tree File
Consulting Arborists

This Drawing Must Be Read in Conjunction with the Associated Arboricultural Report

- Category "A" Trees (Green Button)
- Category "B" Trees (Blue Button)
- Category "C" Trees (Gray Button)
- Category "U" Trees (Red Button)

Graphic Representation of Tree and Protection Zone

Canopy Extent
Cardinal Radii
Category Code
Stem Circumference
Root Protection Area (RPA)

Canopy depicts natural asymmetry or imbalance and is scaled to account for north, east, west and south radii.
This area relates the "RPA" (root protection area) radius as defined in the Tree Survey Table and is measured from the tree centre.

Client: Bartra Property (Castleknock) Limited

Scale: 1:400 @ A3 Date: August 2019

Project: Tree Survey, Brady's Pub, Old Navan Road, Dublin 15

Description: Tree Constraints Plan

This Drawing is Copyright - © The Tree File Ltd 2019

D2-AIA-Bradys-08-19 1/1 _ Scale 1:400 @ A3

This is a colour coded drawing that will be difficult or impossible to interpret if reproduced in black and white

Ashgrove House
Kill Avenue
Dun Laoghaire
Co Dublin

Tel. 01 2804839
mob. 086-3819011
e-mail - thetreefile@eircom.net

The Tree File
Consulting Arborists

This Drawing Must Be Read in Conjunction with the Associated Arboricultural Report

Trees Intended for Retention - Solid Green Crown Outline

Trees Intended for Removal In Conjunction With Development Works- Broken Red Crown Outline

Client: Bartra Property (Castleknock) Limited

Scale: 1:400 @ A3 Date: August 2019

Project: Tree Survey, Brady's Pub, Old Navan Road, Dublin 15

Description: Tree Imapacts Assessment Plan

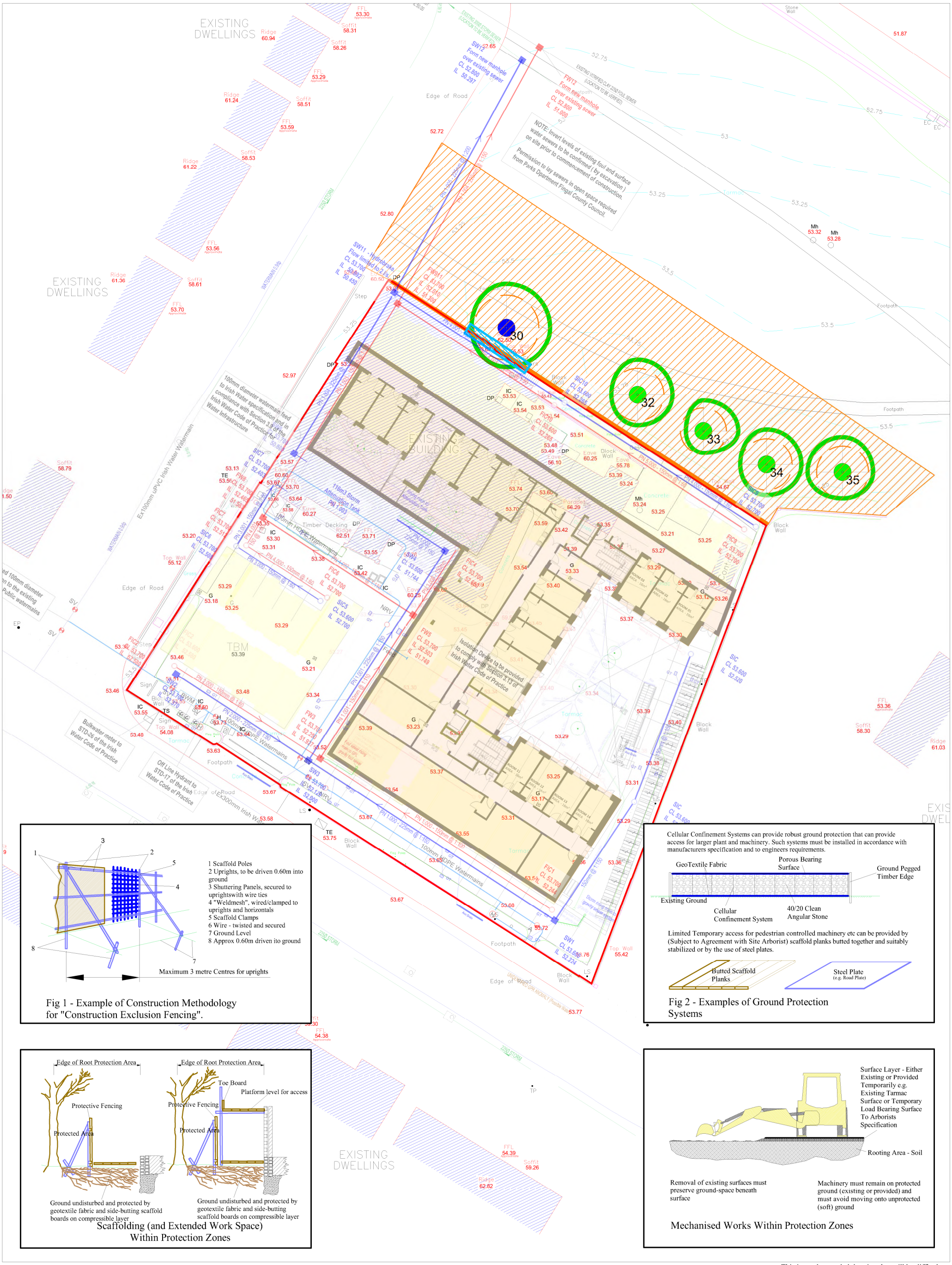


Fig 1 - Example of Construction Methodology for "Construction Exclusion Fencing".

Cellular Confinement Systems can provide robust ground protection that can provide access for larger plant and machinery. Such systems must be installed in accordance with manufacturers specification and to engineers requirements.

Limited Temporary access for pedestrian controlled machinery etc can be provided by (Subject to Agreement with Site Arborist) scaffold planks butted together and suitably stabilized or by the use of steel plates.

Fig 2 - Examples of Ground Protection Systems

Scaffolding (and Extended Work Space) Within Protection Zones

Mechanised Works Within Protection Zones

D3-TPP-Bradys-08-19 1/1 _ Scale 1:400 @ A3

This is a colour coded drawing that will be difficult or impossible to interpret if reproduced in black and white

Ashgrove House
Kill Avenue
Dun Laoghaire
Co Dublin

Tel. 01 2804839
mob. 086-3819011
e-mail - thetreefile@eircom.net

The Tree File
Consulting Arborists

This Drawing Must Be Read in Conjunction with the "Arboricultural Method Statement" at "Appendix 1" of the Associated Arboricultural Report

N

Location Of Primary Construction Exclusion Fencing

Area Of Primary Construction Exclusion Fencing

Location Of Controlled, Low Impact (Manual) Works

Client: Bartra Property (Castleknock) Limited

Scale: 1:400 @ A3 Date: August 2019

Project: Tree Survey, Brady's Pub, Old Navan Road, Dublin 15

Description: Tree Protection Plan