

**Arboricultural Report  
Trees at Proposed Site at  
The Grove  
Goatstown  
Dublin 14**

**January 2021**

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### Associated Drawings

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

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



# **1 Report Summary**

- 1.1 This report intends to provide a realistic assessment of the Arboricultural implications of the proposed development on trees within and directly adjoining the site. This is an updated report and includes amendments relating to changes adopted in light of issues and recommendations discussed at preplanning stage.
- 1.2 Particularly, there have been adjustments to the proposed layout that has allowed for increased tree retention. This is most pertinent to the site's western boundary, where "Tree line 3" is now retained in its entirety, as are tree nos. 74 and 75, thereby greatly improving site screening in this area and tree retention for the site. This provides for a further increase in tree and tree line retention in comparison to the previously permitted development (ABP Ref. PL06D.304420) by allowing for the retention of 2 additional trees and circa 40 metres of tree line.
- 1.3 This report also addresses the requirement to better explain the rationale behind the apparent conflict between the design proposals in respect of trees and the site being subject to an objective to "protect and preserve trees and woodland". This has been addressed in greater detail in "Section 8" of this report, but primarily relates to particularly onerous issues relating to sustainable tree retention in some areas of the site.
  - 1.3.1 As part of the design process, it was considered that trees adjoining the boundaries offered greatest amenity value and screening to neighbours, as well as offering the greatest potential for protection during construction and therefore for sustainable retention. By contrast, many of those trees toward the centre of the site are small and of little visual significance. More importantly, they could be readily replaced with new stock, elsewhere on the site and therefore should not be considered as a constraint to development, as their loss could be readily mitigated and made good.
  - 1.3.2 Additionally and though many of the centrally located trees are still small, the species encountered often include large growing trees such as Sycamore, Oak, Ash and Scots Pine. Such trees cannot be considered suitable for highly urbanised context and would require consideration of mature sizes to account for realistic sustainability. In this respect, the efficient use of site space could not include set-asides enough to allow for the retention of trees that could readily exceed 20 to 30 metre in height and spread.
- 1.4 In respect of the broader development, sustainable tree retention is subject to many factors as explained in "Section 6" of this report. Fundamentally this relates to the preservation and conservation of specific amounts of ground space associated with any tree intended for retention. Therefore and to provide the necessary quantum student accommodation we must consider all unavoidably associated modern standards of development, including "DMURS" compliant access roads and parking, "Part M" compliant access and the provision of standard modern underground infrastructure including "SuDS" compliant drainage and other underground services. These considerations combine to create great demands on available space, particularly towards the centre of the site.
- 1.5 Issues of contested space and trees have been addressed by design and consideration. The intention is, as far as practicably possible, to retain many of the site's trees, particularly where their location is significant to neighbours of the site. Elsewhere,

limited significance within the existing landscape and the ease with which that they will be replaced with new stock, has been addressed in the landscape scheme for the site. Overall, it should be noted that the proposed development will provide a substantial gain in both tree numbers and tree sustainability in comparison to the “do nothing” scenario. Particularly and in respect to the previously permitted development (ABP Ref. PL06D.304420) 4 additional individual trees and circa 100metres of tree line are to be retained in this proposal.

- 1.6 In line with “BS 5837, Trees in Relation to Design, Demolition and Construction – Recommendations”, this report deals with 57 trees and two tree lines that are within or directly adjoining the site. Within the site area, we note 8no. poor quality, dead, dying or otherwise unsustainable trees (category U) trees. We also note 48no. sustainable trees (category B or C trees).
- 1.7 Of the 48no. sustainable trees described in the review, the development will require the loss of 26no trees and circa 10 to 15 metres of tree line, and will see the retention of 24no. trees/groups, including circa 100 metres of tree lines.
- 1.8 When considering the extensive planting indicated as part of the proposed landscape scheme, we note the planting of trees, shrubs and hedging material. Particularly, we note the planting of 56no. new trees, that will include visually significant trees of between 5.00 and 7.00 metres tall when planted.
- 1.9 In line with the above, we note that the proposed development of the site will result in a net gain of 22no. trees, increasing the total number of sustainable trees of the site from the current 48 sustainable trees, to 78 no. trees and circa 100meters of tree line in two groups.

## **2 Introduction**

- 2.1 This report was commissioned by-  
**Colbeam Limited**

This report has been prepared by-  
Andy Worsnop Tech Arbor A, NCH Arb (PTI LANTRA)  
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### **Report Brief**

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

### **Report Context**

- 2.3 This report includes a Arboricultural review of the proposed development project. This includes an assessment of the sites existing tree population within its current context, as well as an assessment of their potential for sustainable retention in the post-development scenario and the likely effects and repercussions of the development and construction process upon those trees. It also provides information regarding the necessary tree protection and the avoidance of damage to trees during the construction process, necessary to achieve sustainable tree retention.
- 2.4 This assessment summarises the Arborists findings and recommendations, arrived at after reviewing the proposed project details as provided, and after an evaluation of trees as defined and described in the tree survey at “Appendix 2”. This report also includes a preliminary “Arboricultural Method Statement” at “Appendix 1” as well as a Tree Protection Plan that illustrates the requisite conservation and protection methodologies necessary to maintain tree sustainability. This report is not intended as a critique of the proposed development but is an impartial assessment of the development implications relating to the sustainable retention of trees, whether that be any, some, or all trees. This report is for planning purposes only and may be deficient for construction phase use.

## **Report Limitations**

- 2.5 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.
- 2.6 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.
- 2.7 In line with the “design” stage of the development proposals, 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.
- 2.8 Accordingly, this assessment is premised on all its elements/recommendations, and the omission or alteration of any part of it, particularly the application of tree protection methodologies, can radically alter outcomes in respect of sustainable tree retention.

### **3 Site Description**

- 3.1 The site in question is broadly rectangular, located to the south-western portion of a neighbouring Our Lady's Grove campus and to the west of an existing residential development.
- 3.2 The site includes an after school facility, a portion of which is in significant disrepair, and areas of hardstanding, as well as more open spaces and spaces that are suggestive of prior garden areas. The site area's tree population is quite dispersed with a large proportion being located about boundaries or along prior site features, buildings or paths.
- 3.3 The site supports only a slight slope, descending to the north-west and at the time of review exhibited no signs of drainage issues.
- 3.4 The site has been designated under the current Dun Laoghaire Rathdown County Council Planning Development Plan 2016-2022 with an objective "To protect and preserve Trees and Woodlands"

### **4 Pre-Development Arboricultural Scenario**

- 4.1 The site's tree population is hugely diverse by way of tree conditions, age and size. There appears to have been planting undertaken on a periodic basis with trees including some relatively small specimens apparently installed within the last decade through to a small proportion of fully mature trees that appear likely to relate to prior agricultural landscape.

#### Centrally Located Trees

- 4.2 About the centre of the site, there are two notable alignments, one running north-south and the other running east-west. Whilst the north-south alignment is dominated by relatively young trees, typically only 10 – 15 years of age, the adjoining east-west running alignment supports several Ash from a more historic alignment. Unfortunately, many of these trees are in particularly poor condition with some having suffered chronic failure during recent storms.
- 4.3 The cumulative effect of the centrally located trees is one where the larger, more visually significant trees tend to be those of least sustainability and invariably include those requiring immediate removal. The better-quality trees tend to be relatively small and visually insignificant raising for consideration, notwithstanding some relatively healthy trees, the benefits of retention considering the ease with which they can be replaced.

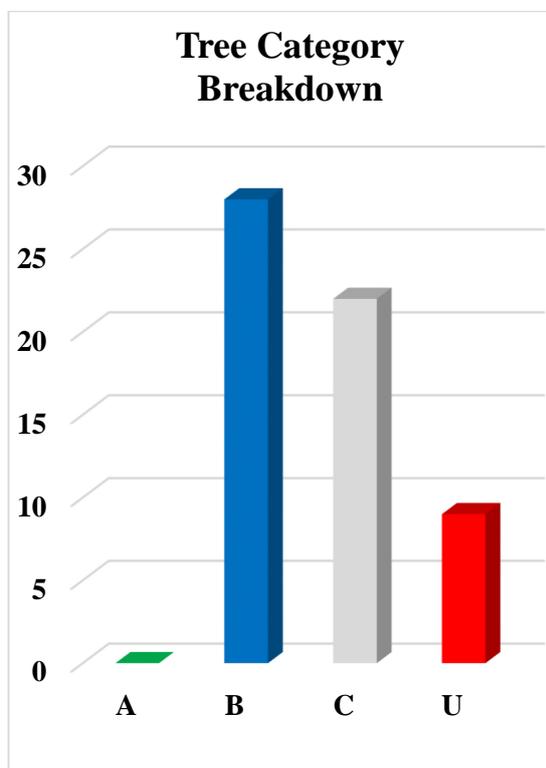
#### Boundary Trees

- 4.4 Sustainability issues arise elsewhere on the site and particularly regarding the conifer-based alignments. Substantial concern relates to "Hedge 1" adjoining the southern portion of the western boundary and "Tree line 2" adjoining the eastern portion of the southern boundary. These alignments are dominated by Leyland Cypress that are already mature and have not benefited from any management. There is evidence to suggest that "Hedge 1" has been decapitated in the past, this likely being the cause for exacerbated spread and trespass both across the boundary line and into the site. These

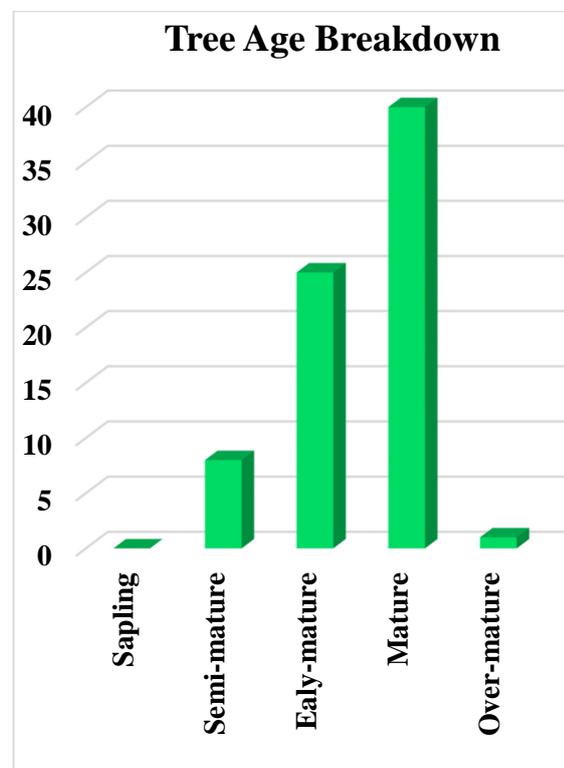
trees currently of poor quality and many exhibiting signs of disease attack, decline and deterioration.

4.5 A similar scenario relates to “Tree Line 2” in that this particularly large alignment of trees has not benefited from management over time. Accordingly, they have attained particularly large sizes, substantially overhanging the boundary with neighbours to the south and encroaching heavily into the site.

4.6 Both alignments of trees must be regarded with caution regarding any realistic sustainability. Their format and makeup is typical of hedges and alignments highlighted in respect of the UK based “High Hedges” legislation that deals with such material considering its unsustainability and management issues over time. Both alignments have greatly surpassed any potential for manageable retention and indeed both are exhibiting evidence of mechanical and physical deterioration of a nature that cannot be managed or addressed. Accordingly, and notwithstanding their visual significance within the current landscape, it would be advised that they be removed and potentially replaced, regardless of any site development works.

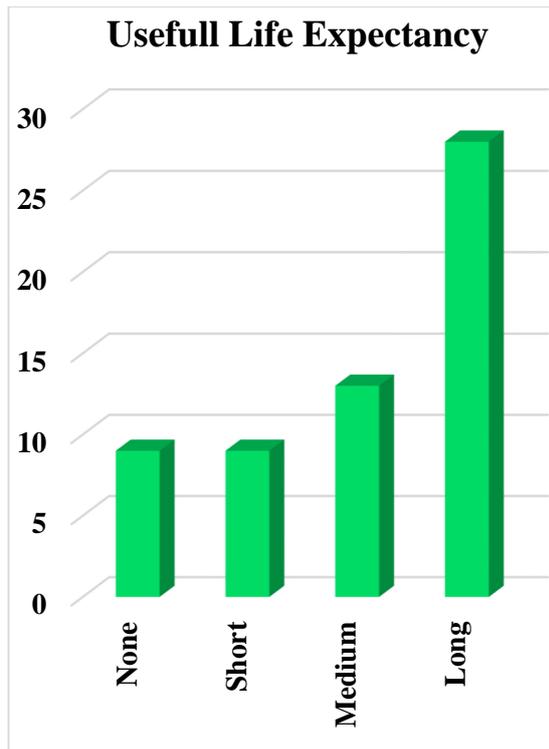


Graph 1

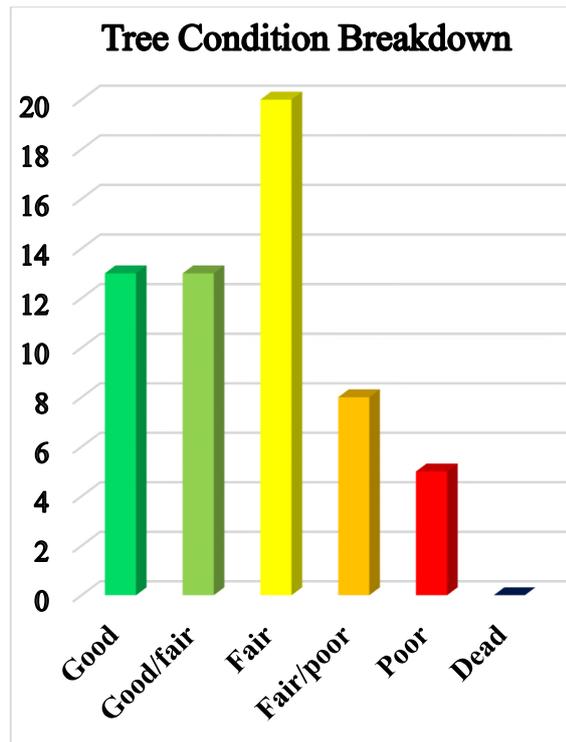


Graph 2

4.7 As can be seen from the graphs, there is some diversity across the review population. The population is dominated by older, more mature trees, thereby suggesting likely issues regarding sustainability and a need for new planting. By comparison and improving sustainability, we note that the tree categorisation is dominated by category “B” and “C” trees and that tree conditions are dominated by “good” to “fair” quality trees. These factors appear to be corroborated by the “life expectancy graph that is dominated by trees offering “long term” potential. Notwithstanding the above, we note that the site still supports a number of trees categorised as being of “poor quality”, are of category “U” status and offer no realistic sustainability. Such trees are considered unsuitable for retention.



Graph 3



Graph 4

## **5 Planning Scenario in Respect of Tree**

- 5.1 In respect of planning, it is noted that “Dun Laoghaire Rathdown County Council” includes numerous references to trees and woodlands, as well as their retention, within their planning documentation. Such references include-
- 5.2 In respect of trees as they relate to planning issues within the DunLaoghaire Rathdown Council area, note is made of two principal areas of guidance including the County Development Plan 2016 – 2022, and the DunLaoghaire Rathdown tree strategy document: A Tree Strategy for Dún Laoghaire-Rathdown 2011 – 2015)
- 5.2.1 **Chapter 2, Sustainable Communities Strategy**  
2.1.3.5 Policy RES5: Institutional Lands notes the retention of trees in development proposals
- 5.2.2 **Chapter 4, Green County Strategy**  
4.1.3.1 Policy LHB19: Protection of Natural Heritage and the Environment\*  
4.1.3.5 Policy LHB23: Non-Designated Areas of Biodiversity Importance\*  
4.1.3.6 Policy LHB24: County-Wide Ecological Network\*  
4.1.3.8 Policy LHB26: Hedgerows\*  
4.2.2.6 Policy OSR7: Trees and Woodland\* (Tree Strategy for the County – ‘DLR TREES 2011-201)
- 5.2.3 **Chapter 8, Principles of Development**  
8.1.2.4 Policy UD7: Urban Tree Planting\* (DLR TREES: A Tree Strategy for Dún Laoghaire-Rathdown 2011 – 2015)

8.2.3.2 Quantitative Standards, (ii) Residential Density (where lower densities may be considered or in sites where mature tree coverage prevents minimum densities being achieved across the entire site)

8.2.3.4 Additional Accommodation in Existing Built-up Areas, (vii) Infill, Infill development shall retain the physical character of the area including features such as boundary walls, pillars, gates/gateways, trees, landscaping, and fencing or railings.

8.2.3.5 Residential Development – General Requirements, (vi) Bonds To ensure the satisfactory completion of development works, such as roads, surface water drainage, public lighting and open space, including the protection of trees, on a site which has been the subject of a grant of permission, a bond or cash lodgement may be required until the development has been satisfactorily completed.

8.2.4.9 Vehicular Entrances and Hardstanding Areas, Impacts on features like boundary walls and pillars, and roadside grass verges and trees outside properties will require to be considered, and entrances may be relocated to avoid these.

(v) Financial Contributions

Where an existing on-street car parking space requires removal to facilitate a new or widened vehicular entrance, and cannot be conveniently relocated within the public domain, then a financial contribution will be required in accordance with the terms and conditions of the Transportation Section and Water Services Department.

Likewise, where a tree, located on-street, requires removal to facilitate a new or widened vehicular entrance and cannot be conveniently relocated within the public domain then a financial contribution will be required in lieu.

8.2.7.2 Sensitive Landscapes and Site Features

Existing site features such as specimen trees, stands of mature trees, hedgerows, rock outcrops and water features are properly identified and retained where appropriate and new planting or other landscaping appropriate to the character of the area will be provided

8.2.8.3 Public/Communal Open Space – Quality

Fragmented open spaces within a development layout, which result specifically from the necessity to protect existing site features (for example a stand of mature trees) may not be included in the calculation open space requirements, as they are necessary to ensure the protection of existing amenities

8.2.8.6 Trees and Hedgerows

New developments shall be designed to incorporate, as far as practicable, the amenities offered by existing trees and hedgerow and new developments shall have regard to objectives to protect and preserve trees and woodlands as identified on the County Development Plan Maps. Arboricultural assessments carried out by an independent, qualified arborist shall be submitted as part of planning applications for sites that contain trees or other significant vegetation. The assessment shall contain a tree survey, implications assessment and method statement. The assessment will inform the proposed layout in relation to the retention of the maximum number of significant and good quality trees and hedgerows. Tree and hedgerow protection shall be carried out in accordance with BS 5837 (2012) ‘Trees in Relation to Design, Demolition and Construction – Recommendations’

Where it proves necessary to remove trees to facilitate development, the Council will require the commensurate planting or replacement trees and other plant material. This will be implemented by way of condition. A financial bond may be required to ensure protection of existing trees and hedgerows during and post construction.

Chapter 8 Development Management

8.2.11.2 Architectural Heritage – Protected Structures

(iii) Development in Proximity to a Protected Structure Any proposal for development will be assessed in terms of the following: Impact on existing features and important landscape elements including trees, hedgerows and boundary treatments.

- 5.3 Specific to the site and though the site supports no specific “tree preservation orders” note is made of a designated objective to “protect and preserve trees and woodlands”. This objective requires that “as far as practicably possible” trees and woodlands should be retained within new development, but that where this is not practicable, then the council would require commensurate planting or replacement trees.

## **6 Construction Activities and their Effect on Trees**

### **General**

- 6.1 Sustainable tree retention is costly in respect of available space and there is a substantial difference between physically keeping a tree in situ and gaining any realistic expectation of it surviving into the future and remaining safe.
- 6.2 Trees are living organisms, reliant upon a continuity of environmental factors and particularly the soil, the changing of which can easily undermine health and sustainability. As a perennial plant, a trees nature is to necessarily become larger on an annual basis. The survival of the plant and its funding of continued growth requires a minimum import of water and various nutrients, a large proportion of which are provided by the soil in which the tree is rooted. Any change to these conditions, has the potential to affect a tree’s metabolism, health, and sustainability. This includes affects that would denature the soil, compress, or compact it, cap or seal it, change its structure or hydrology.
- 6.3 Development works can result in the loss, alteration or denaturing of this ground and thereby is contrary to sustainable tree retention. Any action that affects or denatures the existing soil environment in respect of gas flux, hydrology or soil strength can quickly make a soil incapable of supporting plant function. Therefore, these effects must be avoided in the areas necessary to any tree intended for retention.
- 6.4 BS 5837:2012: Trees in relation to design, demolition, and construction - Recommendations, is a broadly accepted standard, that sets out guidelines and parameters by which we can assess impacts to, and protect trees from damage and disturbance, thereby providing a realistic expectation for sustainable tree retention. The standard sets out a procedure and calculations whereby a minimum amount of ground space can be defined in respect of the requirement for the maintenance of a tree of any particular size. This calculation is based primarily on tree size considering issues of hydrological capacity, nutrient availability, and anchorage. The standard generates a “root protection area” (RPA) intended to define a minimum zone of conservation and preservation centred about a tree of a given size. This area is typically expressed in a symmetrical fashion and most commonly as a circle about the tree stem.
- 6.5 However, it is appreciated that physiological issues can influence rooting patterns and can radically alter the symmetry of a rooting pattern. Examples of “RPA” distortion includes natural physical features such as bedrock or watercourses, as well as man-made features such as paths, roads, or other structures. These features all involve ground space that cannot be accessed by plant roots and therefore act as barriers to natural root

development. This typically relates to anaerobic conditions or high soil strength or a high CBR's (California Bearing Ratio)

### **Construction Specific Issues**

- 6.8 New buildings, roads, or other structures or their foundations (and/or basements) require the excavation of ground space. Foundation digs are often substantially larger than the building footprint, with depth often requiring safety related battering or benching of the excavation edges to avoid collapse. Many structures, including roads and paths, require that the ground beneath is compacted to provide a necessary bearing ratio. The combination of these typically results in the loss or denaturing of the soil volume that a tree would be reliant upon. Underground services require excavation and trenching, with the added complication that gravity led systems can often require the modification of ground levels to achieve necessary gradients and minimum overburdens, a factor that can often influence the finished levels of both the roads and buildings.
- 6.9 Most modern construction involves the use of substantial plant, equipment, and vehicles. The movement and activity of such machinery quickly denatures the ground, destroying the soil profile and structure, making them inhospitable and of no use to the supported trees.
- 6.10 Though beyond the scope of this report, consideration might be given the broader changes to the ground environment, for example relating to possible hydrological changes about the broader development area.

### **Issues of Non-Compliance**

- 6.13 Where minimum tree protection extents cannot be achieved, the likely issues must be considered in two forms. Firstly, affects to sustainability and long-term retention, as well as potential safety issues during the retention period. Affected trees might still provide benefits of interim and short-term retention, for example during the establishment of new plantings. At the same time, consideration must be given to any direct physical effect on tree root systems or exposure, that can affect stability and safety, thereby requiring that considerations be given to site safety factors during any retention period.
- 6.14 In considering the above, we must be appreciated that any benefits gained by short to medium term retention, will be subject to ongoing and regular review, with regard to any developing symptoms of ill-health. In this respect, short to medium term retention might be achieved either with or without other or ongoing management input.
- 6.15 Unfortunately, tree health-related affects, issues and symptoms tend only to manifest themselves over time and only the most severe impact generates immediate effects. Tree damage relating to environmental change and disturbance can often result in a slow deterioration and decline, sometimes only becoming apparent after some years (2 – 5 years) with a slow deterioration where death may not occur for anything between 3 and 15 years. Understanding the timescale of possible interim benefits must appreciate the fact that its full extent or rate cannot be quantified at an early stage.

## **Contextual Issues**

- 6.16 Some of the tree losses are of limited concern because of poor-quality, ill-health or ongoing deterioration, where the potential for and longevity of keeping such trees would be limited regardless of any site development. This would apply to the “Category U” trees including Nos.52, 54, 56, 59, 70, 77, 71 and 72.
- 6.17 Where the site’s current context will be changed in respect of occupation and use of space near trees, there may develop repercussions that require further scrutiny after first site clearance and felling works. Some trees may require specific attention, including structural pruning improve their safety status within the changed context as well as to deal with issues of exposure and shelter loss.
- 6.18 Tree canopy cover varies by species and can change by season. Therefore, their relationship with the post development site must be considered in respect of additions issues, including shadow-cast and light admission and littering.
- 6.19 While the retention of trees within a development is commendable, tree retention close to buildings must consider the blockage of views and light, and the possible effects on daylight analysis. Trees can have a material effect on these issues and can lead to post development request for more tree removal, for example based on a requirement for artificial light during daylight hours.
- 6.20 Deciduous tree shed leaves each autumn that can be subject to local wind patterns, creating local drifts and accumulations. Such issues may require management and can lead to drainage issues including the blockage of drains and gullies.

## **7 Nature of Project Works**

- 7.1 The development will principally consist of: the construction of a Student Accommodation development containing 698 No. bedspaces with associated facilities located in 8 No blocks, which range in height from part 3 No. storeys to part 6 No. storeys over part lower ground floor level (7 No. storeys as viewed from an internal courtyard). Some 679 No. bedspaces are provided in 99 No. clusters ranging in size from 5 No. bedspaces to 8 No. bedspaces, each with a communal Living/Kitchen/Dining room. The remaining 19 No. bedspaces are accessible studios. The includes the provision of communal residential amenity space at lower ground floor level (349 sq m) including the provision of a movie room (108 sq m), a music room (42 sq m) and a laundry (37 sq m); communal residential amenity space (1,356 sq m) at ground floor level including the provision of a gym (228 sq m), reception desk and seating area (173 sq m), a common room (338 sq m), a study space (104 sq m), a library (64 sq m), a yoga studio (74 sq m), a prayer room (33 sq m) and group dining (33 sq m).

The development also includes staff and administrative facilities (195 sq m); 9 No. car parking spaces; 4 No. motorcycle parking spaces; 860 No. cycle parking spaces; refuse stores; signage; an ESB substation and switchroom; boundary treatments; green roofs; PV panels; hard and soft landscaping; plant; lighting; and all other associated site works above and below ground. The development includes the demolition of part of the Goatstown Afterschool building (558 sq m) and the construction of a new external wall

to the remaining open, in addition to the demolition of a prefabricated structure adjacent to the Afterschool building (161 sq m).

- 7.2 Considering the scope and scale of the proposed development, it is considered likely that most of the issues dealt with at “Construction Works and Trees” above, will apply at various points and particularly regarding-
- a) Direct conflict with proposed structures, thus requiring tree removal.
  - b) A partial conflict where the “Root Protection Area” is encroached upon by works or ground amendments and cannot be preserved/protected in full.
  - c) Environmental damage e.g. compaction, capping, sealing – changing the existing ground environment to one that can no longer support tree root function.
  - d) Construction activity and the use of large plant and machinery that can denature the ground.
  - e) A change in site context or a change in occupation or use that makes a tree unsuitable for retention.

## **8 Arboricultural Considerations and Design Iterations**

- 8.1 The primary issue with this and all developments is the consumption of available space. This relates to a combination of minimum unit delivery requirements with the provision of all standard infrastructure and facilities. Particularly, we find that over and above the primary buildings, the provision of DMURS compliant roads and access, the associated requirement to provide “Part M” compliant pedestrian access, as well as all elements of underground infrastructure including drainage, SuDS and other utilities, combine to require the unavoidable conversion or excavation of available site space. The greater proportion of these requirements result in the loss of ground space or its conversion to a degree greatly beyond any capacity to sustainably retain trees.
- 8.2 The primary survey was carried out in April of 2016 and was reviewed in June of 2017, July 2018, February of 2019 and June of 2020. The information from these surveys provided an early appreciation of the site’s tree cover, its quality, condition, and the constraints it presented.
- 8.3 The design process took note of the constraints presented by trees as well as to comments made at the consultation stage in June of 2020, with subsequent design amendments allowing for increased tree retention under the current design.
- 8.4 From the design outset, the location and nature of the tree population was considered. This includes the relationship between the site and its neighbours, as well as the sustainability of trees within the site. This led to an appreciation that the trees located near the boundaries performed important screening and therefore were considered important to the development.
- 8.5 In contrast to the above, the sustainable retention of trees, was considered elsewhere. At the centre of the site, it was appreciated that tree retention would severely affect the efficient use of space. This was particularly pertinent in that many of the species encountered were large growing species, including Ash, Sycamore, Scots Pine and Oak, all of which can exceed 20 metres in height and similar dimensions in spread. Accordingly, any design intending to see the sustainable retention of such trees must include a set-aside that allows for this growth. This means that the sustainable retention

of such trees would constitute a massive constraint to development by way of sterilisation of space.

- 8.6 In line with the above, similar considerations can be applied to the existing smaller trees, including species such as Turkish Hazel, Silver Birch, Weeping Birch, Swedish Whitebeam, Cherry and Hawthorn. Such trees include small and medium sized trees at maturity, that could offer a greater degree of sustainability within a developed context. However, these trees are current rather small, most being between 3.00 and 7.00 metres tall at present. Accordingly, they can be replaced with ease with new stock, at positions that do not compromise the efficient use of space, but at the same time providing for a “no loss” scenario at completion.
- 8.7 At first sight, the expected tree losses would appear to contradict the planning objective to “protect and preserve trees and woodland” applicable to the subject site. However, the objective is qualified as being “as far as practicable” and furthermore notes that if in some instance tree removal is necessary, that “the council will require commensurate planting”. This planting has been accounted for within the landscape scheme associated with this application, that defines a planting extent that greatly exceeds tree losses. In this respect it might be asserted that the development will result in net Arboricultural gains and tree numbers, when compared with the “do nothing” scenario.

## **9 Identification of Development Impacts to Trees**

- 9.1 The expected tree impacts have been represented graphically on the tree impacts drawing “**The Grove Tree Impacts Plan**”, as well as within the narrative of this report. This drawing combines the tree constraints plan information with the current stage development details including the architectural and services layouts below, thereby allowing for simple direct comparisons to be made between the existing site context and the development proposals in respect of new structures.
- 9.2 In this drawing, trees denoted with “Broken Pink” crown outlines are to be removed and those denoted with “Continuous Green” crown outlines are to be retained.
- 9.3 Detail of the development proposals where gained from drawings provided by-
- Stephen Marshall Urbanism Limited –Masterplan
  - DBFL Consulting Engineers – Drainage and Engineering information overlaid on Masterplan
  - “the big space” Landscape Architecture – Landscape Design
- 9.4 The evaluation is primarily based on minimum protection ranges as defined paragraphs 4.6.1, 4.6.2 and 4.6.3 of BS 5837:2012. 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.
- 9.5 The broader assessment attempts to consider both direct and indirect implications, based on perceived construction requirements, as well as how a tree will likely interact with the development in respect of growth, hazard development, light blockage and other social concerns in respect of the changing context, including its effect on tree amenity value.

## **10 Tree Retention and Loss**

- 10.1 The drawing “The Grove Tree Impacts Plan” comprises the tree survey drawings overlaid by the development drawings, thus providing a graphic representation of the relationship between tree constraints and the development elements. In this drawing, the trees that will be removed, are highlighted in “pink dashed” outlines.
- 10.2 The review area supports a total of 57No. individual trees and 2No. lines/groups, totalling some 59No. discussed items, including-
- 28No, category “B” trees,
  - 20No. category “C” trees and 2No. Groups/lines
  - 9No. category “U” trees
- 10.3 Normally, all poor-quality category “U” trees will be removed (many needing removal regardless of development) including Nos.44, 52, 54, 56, 59, 70, 72 and 71.
- 10.4 Note is made that tree no.77 has been categorised as a “U” grade tree. While this tree is recommended for removal, its location outside of the site area means that removal can only be undertaken by its owner.
- 10.5 Within the site area, and excluding the category “U” trees, we note a potentially sustainable and retainable total of some 51 no. items, including two groups.
- 10.6 Of the site’s “fair” quality, category “B” trees, the development works will require the removal of tree Nos. 37 to 40, 42, 43, 46, 48, 49, 51, 53, 60 to 67 and 69.

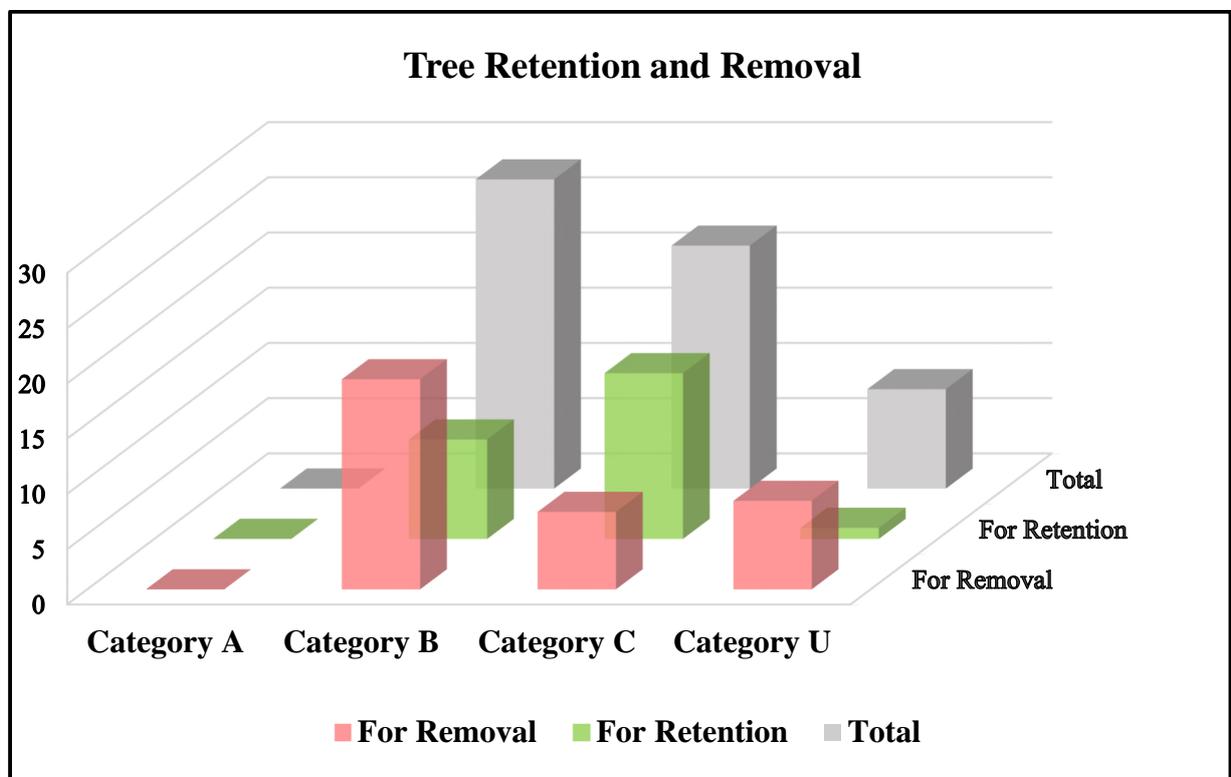


Fig 5 Graphic Representation of Tree Loss/Retention Scenario

- 10.7 Of the site’s category “poor” quality “C” trees, the development works appears to

require the removal of Nos. 41, 45, 47, 55, 57, 58 and 68.

- 10.8 The tree loss breakdown for the site will be-
- No Category A trees
  - 19No. Category B trees
  - 7No. category C trees
  - 8No. category U trees
- 10.9 Total development related tree loss - 34 trees
- 10.10 These tree losses provide for a notable improvement in comparison to the previously permitted development (ABP Ref. PL06D.304420). The current proposal will see the retention of 4no. additional individual trees and circa 110 metres of tree line as formed by Tree Line 2 and Tree Line 3.
- 10.11 Reviewing the proposed development en-masse and accounting for cumulative losses and gains, we note the planting of 56no. new trees, this will result in a net gain of 22no. trees/items within the developed context.

## **11 Tree Protection within the Scope of a Development**

- 11.1 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.
- 11.2 In respect of tree protection, whether vertical or horizontal, all must conform or equate to the recommendations of Section 6, BS5837: 2012, must be fit for purpose and commensurate with the nature of development and the expected day-to-day activities of the site works.
- 11.3 This report provides a “Preliminary Arboricultural Method Statement” at “Appendix 1” to this report, as well as the associated “Tree Protection Plan” drawing “The Grove Tree Protection Plan”.
- 11.4 In the drawing, the “Construction Exclusion Zone” is defined by an orange hatching with bold “Orange” lines representing the proposed location of the primary protective “Construction Exclusion Fencing”.
- 11.5 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. This drawing may require referral to a figured and dimensioned, “construction stage” version of the “Tree Protection Plan” drawing. All recommended protection measures will be installed before the commencement of any site works and must remain in situ (unless under the guidance of the site Arborist) until the completion of all site works.

## **12 Preliminary Management Recommendations**

- 12.1 Provided in the tree survey table (Table 1) are “Preliminary Management Recommendations”. These recommendations relate to the trees as they existed at the time of the tree review. Therefore and in line with the changing context of the site, such

recommendations may no longer apply. Examples include where the felling of trees or other specific works are necessary to facilitate development requirements.

- 12.2 Many of the concerns raised in the tree survey relate to evidence suggesting mechanical failure to trees, ill-health or contextual issues. These may continue to a point where a trees suitability for retention may change over time.
- 12.3 Additionally, any development related loss of trees can result in exposure and shelter loss issues. Therefore all retained trees must be reviewed immediately after the primary site clearance works. This will allow for the updating and amending the “preliminary management recommendations” of the primary survey. Such amendments would address such issues as may arise and may include additional structural pruning works . Regular reviews of all retained trees must be maintained, so that early and prompt intervention and action can be applied as required.

### **13 Bibliography**

- 13.1 British Standards Institution (2010) BS 3998:2010: Tree Work - Recommendations. London: British Standards Institution.
- 13.2 British Standards Institution (2012) BS 5837:2012: Trees in Relation to Design, Demolition and Construction - Recommendations. London: British Standards Institution.
- 13.3 Jackson, R.B et al (1996) A Global Analysis for Root Distribution in Terrestrial Biomes *Oecologia*, 108 (1996) pp389-411, Springer Verlag
- 13.4 Lonsdale, D. (2005) *Principals of Tree Hazard Assessment and Management*, London, TSO
- 13.5 Mattheck, C. and Breloer, H. (1994) *The Body Language of Trees*, London, TSO
- 13.6 Roberts, J. and Jackson, N. and Smith, M. (2006) *Tree Roots in the Built Environment*, London, TSO
- 13.7 Strouts, R.G. and Winter, T.G. (1994) *Diagnosis of Ill-Health in Trees*, London, HMSO

## **A1 Appendix 1 - Arboricultural Method Statement (and Tree Protection Plan)**

### **Method Statement Outline**

- A1.1 This method statement intends to provide guidance in respect of tree protection on a development site. This is a broad and prescriptive method statement, intended to provide general advice and guidance in respect of trees and tree protection on a typical development site, dealing with issues known at planning stage.
- A1.2 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.
- A1.3 This method statement addresses, amongst others, two primary issues, those being –
- a) The avoidance/prevention of physical damage to a tree to be retained.
  - b) The avoidance/prevention of physical damage or disturbance to the ground/earth upon which a tree is reliant.

### **Drawings**

- A1.4 This Arboricultural Method Statement must be read with the associated “Tree Protection Plan” drawing, “The Grove Tree Protection Plan”. The “planning stage” drawing must be updated for “Construction” stage purposes, to include tree protection ranges/dimensions as defined for that tree within the tree survey table or unless otherwise defined by the project Arborist.

### **Method Statement Use**

- A1.5 This Method Statement should be used under the direct guidance of the project Arborist. As limited “construction stage” detail was available at planning stage, it may require amendment and adjustment to address construction stage issues.

### **Amendments and Modifications to Tree Protection Plan**

- A1.6 Any amendment to the tree protection plan must be agreed with the project Arborist, including the adoption of specific methodologies and/or procedures and structures for access into/use of certain parts of the above defined “Construction Exclusion Zones”. Such procedures, including the provision of suitable ground protection may allow for the relocation of the “Construction Exclusion Fencing” to provide access to and across the previously protected areas.

### **Works Related Impacts**

- A1.7 In respect of any necessary and unavoidable structures/works required within or entry into the “RPA” zone, all efforts must be made to minimise impacts. Aerial issues may require “access facilitation pruning” or clearance pruning. Subterranean works that require excavation must, by design, location, and action, minimise impacts to trees.

## **Tree Works Specification Updates**

- A1.8 Many of the tree management recommendations stipulated within the “Preliminary Management Recommendation” section of the primary tree survey, relate to the “as was” site scenario. Because of changing site contexts, these may no longer apply and may require modification to account for the changes that the built project will cause.

## **General Method Statement**

### **1.0) Overview and Implementation**

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

### **2.0) Works Sequence**

- 2.1 No construction related works or mechanised site access will occur until the agreed level of tree protection, in accordance with the “Tree Protection Plan”, is completed.
- 2.2 The only exception to the above will relate to the undertaking of tree works and felling as defined in the Arboricultural report and/or grant of permission.
- 2.3 On completion of tree felling/site clearance works, the tree management plan will be reviewed, accounting for (if necessary) the updating of the “preliminary Management Recommendations” stipulated in the original Tree Survey.
- 2.4 Any revised pruning/cutting works will be agreed with the local authority and applied at the earliest possible opportunity.
- 2.5 After the completion of primary tree clearance, but prior to the commencement of construction works, all “Construction Exclusion” and “Protective” fencing must be erected and “signed-off” as complete, by the Project Arborist.

- 2.6 Only on completion of all construction works will any/all tree protective measures be removed, and only then in a manner, that does not compromise the “Protection Zones”. Such works must be agreed and overseen by Project Arborist.
- 2.7 At construction works completion stage, all retained trees will be reviewed regarding their condition and longer-term management recommendations and regarding site hand-over,

### **3.0) Tree Protection**

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

### **4.0) Provision of Ground Protection (If Required)**

- 4.1 No vehicular/mechanised access whatsoever will be allowed onto unprotected “Construction Exclusion Area” ground.
- 4.2 Ground protection can comprise the use of proprietary materials/structures (installed to manufacturer’s specifications and recommendations) or procedures that avoid ground damage/disturbance/compaction, or the use of procedures that avoid such effects e.g. manual/pedestrian installation procedures.
- 4.3 Any system utilised must effectively spread load-weight, avoid compaction, maintain drainage/percolation/aeration, and be installed in a manner that avoids these issues.

- 4.4 Newly provided access will be strictly limited to the area of the new protection structure.
- 4.6 Protection installation will require a progressive laying down of ground protection, with previously laid material providing vehicular access to the next zone will be accepted as an approved methodology.

### **5.0) Works within “RPA” Zone**

- 5.1 Only works and construction practices, agreed with the Project Arborist prior to commencement, will be allowed in the “RPA” area.
- 5.2 All works will be undertaken under the supervision and guidance of the Project Arborist who will have the authority to stop works if activities are considered such as to have the potential to damage trees.
- 5.3 Preference must be given to manual labour and techniques within the fenced “RPA” zone.
- 5.4 On completion of the required works, the area will be inspected by the Project Arborist regarding the reinstatement of the original protection and the relocation of the protective fencing to a position relating to the original “RPA” area.

### **6.0) Service Installation**

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

### **7.0) Tree Management and Works**

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

- 7.6 On completion of site works, the retained tree population will be reviewed and re-evaluated regarding its ongoing condition and the likely requirements of any ongoing or future monitoring or management needs.

## **8.0) Demolition**

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

## **9.0) Ancillary Precautions**

- 9.1 The methodologies as set out in this document apply to all undertakers of work upon or adjoining the site as may require access to the “Construction Exclusion Zone” or the “RPA” area of any tree.
- 9.2 This document will be disseminated to all persons requiring access to the work site, with all persons undertaking works either before or after the principal development (site investigation works, Landscape Contractors) are subject to the above requirements
- 9.3 Works outside the “Construction Exclusion Zone” must be controlled to create no potential secondary hazard to tree health.
- 9.4 Large loads accessing the site must be reviewed regarding clearance and potential tree damage.
- 9.5 Care must be taken regarding materials that may contaminate the ground. No concrete mixings, diesel or fuel, washings or any other liquid material may be discharged within 10 metres of a tree.
- 9.6 No fires can be lit within 5 metres of any tree canopy extent.

- 9.7 No tree will be used for support regarding cables, signs etc.
- 9.8 The trees should be reviewed on a regular basis throughout the development process and on completion. At that time, additional recommendations regarding tree management may be required.
- 9.9 Any issue that has the potential to affect site trees must be brought to the attention of the Project Arborist for review and comment.
- 9.10 Any circumstances that become known whilst the development project is ongoing that either involves trees or access to/works within the construction exclusion zone must be brought to the attention of the Project Arborist for evaluation and advice regarding approach and methodology.
- 9.11 It is possible that liaison/agreement will be required with the Local Planning Authority regarding compliance with, as well as the verification of the required tree protection measures.

## **A2 Appendix 2 - Tree Survey**

### **Nature of Survey**

- A2.1 The criteria put forward in “BS5837:2012 – Trees in Relation to Design, Demolition and Construction – Recommendations” have provided a basis for this report.
- A2.2 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.
- A2.3 The survey, its findings and management recommendations relate to the site and the conditions thereon at the time of the survey. It relates to a “do nothing” or “as is” scenario and intends to provide an impartial representation of the site’s tree population, regardless of any possible development works. It is likely that changes in site usage, development or other environmental changes will require an amendment of any tree’s potential retention status and its preliminary management recommendations, and in some instances, may require the re-classification of a tree’s suitability for retention.

### **Drawing References**

- A2.4 The survey must be read with the “Tree Constraints Plan” drawing “The Grove Tree Constraints Plan” regarding the representation of tree positions, crown forms, “RPA” extents and colour reference to category systems. Trees omitted from the supplied drawing may be “sketched in” to “The Grove Tree Constraints Plan”. Any such trees should be located and plotted by professional means to identify the constraints such trees have upon the site.
- A2.5 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.
- A2.6 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”.
- A2.7 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**

A2.8 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**

A2.9 The primary survey was carried out in April of 2016 and was reviewed in June of 2017, July 2018, February of 2019 and June of 2020. The information from these surveys provided an early appreciation of the site's tree cover, its quality, condition, and the constraints it presented. 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.

A2.10 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 be estimated only.

### **Inspection and Evaluation Limitations and Disclaimers**

A2.11 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.

A2.12 The survey is not a safety assessment and the parameters reviewed within this survey context would be substantially deficient in extent to provide for a reliable safety assessment. The survey is intended to provide a general and qualitative review to assist in gauging the suitability of an individual tree for retention within a development context. All trees are subject to impromptu failure and damage. The assessment of risk as may be presented by a tree requires the review of numerous factors more than those noted herein and as such, remains outside the scope of this document and any attempt to use the information herein for such purposes will render the information invalid.

A2.13 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.

A2.14 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.

A2.15 Throughout the undertaking of the survey, several factors acted against the inspectors, contriving to reduce the accuracy of the survey.

### **Seasonality**

A2.16 The various surveys have been carried out during many seasons. 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**

<b>Species</b>	Refers to the specific tree species
<b>Age</b>	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.
<b>Tree Dimensions</b>	All dimensions are in meters. See notes regarding limitation of accuracy.
<b>Ht.</b>	Tree Height
<b>CH</b>	Lowest canopy height
<b>N, E, S, W</b>	Tree Canopy Spread measured by radii at north, east, south, and west
<b>Dia.</b>	Stem diameter at approx. 1.50m from ground level.
<b>RPA</b>	Root Protection Area, as a radius measured from the tree's stem centre.

<b>Con</b>		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
<b>Structural Condition</b>		Information on structural form, defects, damage, injury, or disease supported by the tree
<b>PMR – Preliminary Management Recommendations</b>		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.
<b>Retention Period</b>		
S – Short		Typically, 0 -10 years
M – Medium		Typically, 10 -20 years
L – Long		Typically, 20 – 40 years
L+		Typically, more than 40 years
<b>Category System</b>		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 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
35	Ash ( <i>Fraxinus excelsior</i> )	S/M	F	5.00	1.75	3.50	3.50	2.50	3.00	1	271	3.25	Young and vigorous specimen arising from position directly adjoining the existing boundary wall where continued growth asserts immense potential for structural damage. Trees regarded as being unsustainable.	Consider early removal.	S	C2
36	Ash ( <i>Fraxinus excelsior</i> ) Group	S/M	F	5.50	2.00	2.50	2.50	2.50	2.50	1	175	2.10	A group of 3 close-proximity stems combining to create a singular broader crown form. Vigour and vitality are good with trees asserting immense potential for continued growth over time. Proximity to boundary wall makes trees unsustainable with high likelihood of structural damage.	Consider early removal.	S	C2
37	Ash ( <i>Fraxinus excelsior</i> )	E/M	G	5.50	0.50	3.50	3.50	3.50	3.50	1	280	3.36	Young and vigorous specimen of good condition, asserting immense potential for continued growth over time.		L	B2
38	Turkish Hazel ( <i>Corylus colurna</i> )	E/M	G	7.00	1.75	3.00	3.00	3.00	3.00	1	232	2.79	Young and vigorous supporting notable potential for continued growth over time.		L	B2
39	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	G	8.50	1.00	4.50	5.00	4.00	4.50	1	407	4.89	Young and vigorous asserting immense potential for continued growth over time.		L	B2
40	Turkish Hazel ( <i>Corylus colurna</i> )	E/M	G	7.50	1.50	3.00	3.00	3.00	3.00	1	277	3.32	Young and vigorous with substantial potential for continued growth.		L	B2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
41	Silver Birch ( <i>Betula pendula</i> )	E/M	G	5.00	0.50	2.00	2.50	1.50	1.50	1	150	1.80	Young and broadly vigorous but is heavily suppressed on southern side with deadwood development.	Review regularly.	M	C2
42	Ash ( <i>Fraxinus excelsior</i> )	E/M	F	8.00	1.50	3.00	4.00	3.50	4.00	1	312	3.74	Young and vigorous but has sustained notable wound on south-western side of principal stem.	Review regularly.	L	B2
43	Turkish Hazel ( <i>Corylus colurna</i> )	E/M	G/F	7.00	1.25	3.00	3.00	3.00	3.00	1	255	3.06	Young and vigorous with substantial potential for continued growth over time.		L	B2
44	Ash ( <i>Fraxinus excelsior</i> )	M	P	13.00	2.00	6.50	7.00	6.00	6.50	1	732	8.79	A once larger specimen has sustained ongoing and repeated crown failure with remaining crown now supporting numerous areas of decay and cavity development. Vigour and vitality are variable with deadwood development and evidence of decline. Tree is unsustainable raises concern with regard to proximity to existing prefabricated classrooms.	Remove.	N/A	U
45	Turkish Hazel ( <i>Corylus colurna</i> )	S/M	F	4.50	1.25	1.50	3.00	2.50	2.50	1	121	1.45	Young but heavily suppressed as result of position beneath canopy of adjoining ash. Is of dubious sustainability.	Review regard retention context.	S	C2
46	Scots Pine ( <i>Pinus sylvestris</i> )	E/M	F	9.00	1.25	4.50	2.50	3.00	2.50	1	420	5.04	Suppressed and once affected by extensive Ivy cover that appears to be partially curtailed. General vigour and vitality are good suggesting immense potential for continued growth over time.	Review regard retention context.	L	B2
47	Scots Pine ( <i>Pinus sylvestris</i> )	E/M	G	9.00	2.00	4.00	1.50	3.50	3.00	1	261	3.13	Suppressed and substantially one-sided as result of proximity to near neighbours. General vigour and vitality are fair.	Review regularly.	M	C2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
48	Scots Pine ( <i>Pinus sylvestris</i> )	E/M	G/F	8.00	1.25	2.00	3.00	3.00	3.50	1	264	3.17	Slightly distorted because of proximity to near neighbours but maintaining reasonable vigour and vitality.	Review regularly.	L	B2
49	Turkish Hazel ( <i>Corylus colurna</i> )	E/M	G/F	7.50	0.50	3.00	3.00	3.50	3.50	1	283	3.40	Young and vigorous specimen.		L	B2
51	Domestic Pear ( <i>Pyrus communis</i> )	E/M	G/F	8.00	1.75	4.00	3.50	3.50	4.00	1	293	3.51	Young and still vigorous.	Review regard retention context.	L	B2
52	Swedish Whitebeam ( <i>Sorbus intermedia</i> )	E/M	F	4.50	1.50	2.00	3.00	1.50	0.50	1	194	2.33	Appears be partially uprooted and unbalanced to east. Is of dubious retention merit.	Consider early removal.	N/A	U
53	Weeping Birch ( <i>Betula youngii</i> )	E/M	G	4.00	0.00	2.00	2.00	3.00	2.00	1	172	2.06	Supports minor imbalance to east.		L	B2
54	Silver Birch ( <i>Betula pendula</i> )	E/M	F/P	4.50	1.00	1.50	2.50	1.00	0.50	1	134	1.60	Distorted and of typically poor quality. Is of dubious retention merit.	Consider early removal.	N/A	U
55	Ornamental Cherry ( <i>Prunus variety</i> )	S/M	F/P	4.50	1.25	1.00	3.00	3.00	1.00	1	156	1.87	Heavily unbalanced to south-east suggesting instability.	Consider removal and replacement.	S	C2
56	Ash ( <i>Fraxinus excelsior</i> )	S/M	F/P	5.00	0.00	3.00	3.00	3.00	3.00	3	271	3.25	Young and vigorous but compromised by poor mechanical form.	Consider early removal.	N/A	U
57	Hawthorn ( <i>Crataegus monogyna</i> )	M	G/F	6.50	0.50	3.00	3.00	3.00	2.50	1	271	3.25	Potentially comprising a remnant of a previous hedge.	Review regard retention context.	M	C2
58	Hawthorn ( <i>Crataegus monogyna</i> )	M	F	5.00	0.50	3.00	3.00	3.00	2.50	1	293	3.51	Eventually part of a previous hedge.	Review regard retention context.	M	C2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
59	Ash ( <i>Fraxinus excelsior</i> )	M	P	16.00	2.50	7.00	9.00	6.00	8.00	1	910	10.92	A once large specimen has been affected by massive mechanical failure and localise decay. Crown vigour and vitality is poor with decline in deterioration in evidence throughout. Unsuitable for retention.	Remove.	N/A	U
60	Oak ( <i>Quercus robur</i> )	E/M	G	8.00	2.00	4.00	3.50	3.00	2.50	1	293	3.51	Young and vigorous.		L	B2
61	Oak ( <i>Quercus robur</i> )	E/M	G	10.00	1.00	3.50	4.50	4.50	4.50	1	328	3.93	Young and vigorous.		L	B2
62	Oak ( <i>Quercus robur</i> )	E/M	G	9.00	2.00	2.50	2.50	4.00	3.00	1	210	2.52	Young and vigorous.		L	B2
63	Oak ( <i>Quercus robur</i> )	E/M	G/F	11.00	1.00	4.50	4.00	2.00	3.00	1	315	3.78	Slightly distorted because of suppression but otherwise good condition with immense potential for continued growth over time.		L	B2
64	Oak ( <i>Quercus robur</i> )	E/M	G	12.00	1.50	5.50	4.50	4.00	3.00	1	369	4.43	Badly distorted because of proximity to near neighbours but maintaining good vigour and vitality and thus asserting immense potential for continued growth over time.		L	B2
65	Oak ( <i>Quercus robur</i> )	E/M	G	12.00	2.00	5.50	3.50	4.00	3.00	1	347	4.16	Badly distorted because of proximity to near neighbours but maintaining good vigour and vitality and thus asserting 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
66	Oak ( <i>Quercus robur</i> )	E/M	G	12.00	2.00	5.00	4.50	3.00	4.00	1	363	4.35	Badly distorted because of proximity to near neighbours but maintaining good vigour and vitality and thus asserting immense potential for continued growth over time.		L	B2
67	Oak ( <i>Quercus robur</i> )	E/M	G/F	10.00	0.00	2.50	3.00	2.50	2.00	1	277	3.32	Slightly suppressed but maintaining reasonable vigour and vitality. Assessment potential for continued growth over time.		L	B2
68	Silver Birch ( <i>Betula pendula</i> )	M/A	G/F	10.00	0.50	2.50	4.50	4.50	2.00	1	283	3.40	Heavily unbalanced to south-east but maintaining reasonable vigour and vitality. Primary stem has sustained minor localised wounding.	Review regularly.	M	C2
69	Oak ( <i>Quercus robur</i> )	S/M	F	6.00	2.00	4.00	3.00	3.00	3.00	1	175	2.10	Notably suppressed as result of position beneath canopy of adjoining ash. Is maintaining reasonable vigour and vitality.	Review regularly.	L	B2
70	Ash ( <i>Fraxinus excelsior</i> )	M	P	18.00	2.00	9.00	8.00	10.00	8.00	1	885	10.62	A large specimen, of variable crown vigour, compromised by stem fracture and compression forked development at circa 7.00 m. Middle and higher crown is subject to chronic failure. Unsuitable for retention.	Remove	N/A	U
71	Ash ( <i>Fraxinus excelsior</i> )	E/M	F	6.50	0.00	5.00	4.50	3.50	2.00	1	271	3.25	Heavily distorted unbalanced to east. Arises from position directly adjoining wall footing where continued growth will result in mechanical damage. Unsuitable for retention.	Remove.	N/A	U2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
72	Ash ( <i>Fraxinus excelsior</i> )	E/M	F	7.50	1.50	4.00	5.00	4.50	2.50	1	366	4.39	Young and still vigorous specimen arising from position in direct contact with wall footing where continued growth will result in damage. Tree is considered unsuitable for retention and unsustainable.	Remove.	N/A	U2
73	Leyland Cypress ( <i>Cupressocyparis leylandii</i> )	E/M	G/F	13.00	0.50	6.00	6.00	6.00	6.00	1	748	8.98	A relatively young but still vigorous specimen with immense potential for continued growth over time. Arises from adjoining property greatly overhangs site boundary.	Review regard retention context and development implications.	M	C2
74	Silver Birch ( <i>Betula pendula</i> )	E/M	G/F	13.00	1.50	5.00	6.00	5.00	5.00	1	398	4.77	A triple stemmed group combining to create a singular crown aspect. Trees are suppressed at lower levels by adjoining Cypresses hedging but nonetheless appear to be maintaining good vigour.	Will require further review once access, prevented by existing thicket is gained.	L	B2
75	Silver Birch ( <i>Betula pendula</i> )	M	G/F	10.00	1.00	5.50	6.00	5.00	5.00	1	433	5.19	Young and still vigorous specimen become substantially multi-stemmed by 1.00 m. Suppressed at lower levels by competitive shrubbery and scrub thicket. Appears suitable for retention.	Review once full access is available.	L	B2
76a	Ash ( <i>Fraxinus excelsior</i> )	S/M	F/P	10.00	3.00	4.50	2.50	0.00	3.00	1	344	4.13	Holy one-sided as result of suppression and position beneath canopy of adjoining Cypresses. Remains vigorous but is heavily unbalanced.		M	C2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
76	Ash ( <i>Fraxinus excelsior</i> )	E/M	F	12.00	3.00	5.00	4.50	5.00	4.50	1	414	4.97	Arises from within apparent garden area of adjoining property but overhangs site. Appears to be maintaining reasonable vigour and vitality though full inspection is not possible at present.	Re-evaluate once access is available.	L	B2
77	Ash ( <i>Fraxinus excelsior</i> )	M	P	20.00	7.00	7.00	6.00	6.00	8.00	1	844	10.12	A large tree in visibly poor condition with chronic decline throughout crown and evidence of fungal activity on primary stem is. Tree appears to arise from adjoining property and thus is beyond site jurisdiction. Size and condition of tree does however raise issues regarding site safety.	Tree should be brought to the attention of owners for removal.	N/A	U
77a	Ash	S/M	F	9.00	3.00	4.50	4.00	0.00	3.50	1	274	3.29	Young and vigorous though heavily unbalanced to north as result of suppression and position beneath canopy of larger adjoining ash.	Review regarding retention context.	M	C2
78	Ash ( <i>Fraxinus excelsior</i> )	E/M	F/P	13.00	1.00	6.00	5.00	3.00	8.00	1	420	5.04	Heavily distorted and unbalanced, multi-stem specimen arising from position within site confines. General vigour and vitality appear good though multi-stem stature and heavily forked form raises concerns regarding sustainability and predisposition towards damage. Will be regarded as being of poor quality and dubious retention merit within any developed context.	Review regard retention context.	S	C2
78a	Lombardy Poplar Group ( <i>Populus nigra</i> "Italica")	M	G/F	22.00	2.00	2.00	2.00	2.00	2.00	1	0.54	6.49	Rising from position within adjoining garden and set back from boundary. Large, visually imposing trees.		L	B2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
80	Oak ( <i>Quercus robur</i> )	M	G/F	16.00	2.00	8.00	8.00	9.00	6.00	1	780	9.36	Slightly squat and distorted specimen arising from adjoining garden but with northern crown overhangs site boundary. General vigour and vitality appear good, though crown supports some deadwood.	Review regularly.	L	B2
81	Sycamore ( <i>Acer pseudoplatanus</i> )	S/M	F	7.00	0.50	5.00	4.00	0.00	3.00	1	175	2.10	Heavily suppressed, distorted and unbalanced to north. Is of dubious quality or sustainability.		S	C2
82	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	F/P	14.00	3.00	5.50	5.50	5.50	5.50	1	516	6.19	Heavily divided with substantial damage to lower stem, presumably in relation to early life fire damage. General vigour and vitality is good. Tree arises from outside of site jurisdiction.		M	C2
83	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	F	11.00	4.50	5.50	5.00	1.00	3.00	1	293	3.51	Suppressed distorted and arising from position directly adjoining fence.	Review regard retention context.	M	C2
84	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	F	12.00	3.00	4.50	3.50	3.00	2.00	1	334	4.01	Slightly suppressed with minor imbalance to north.	Review regard retention context.	L	B2
85	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	F	9.00	4.00	1.00	1.50	3.50	3.50	1	229	2.75	Suppressed and drawn up but maintaining reasonable vigour and vitality.		M	C2
86	Scots Pine ( <i>Pinus sylvestris</i> )	E/M	F	11.00	5.00	1.50	1.50	1.50	1.50	1	242	2.90	Drawn-up with limited high crown and notable Ivy cover on principal stem.	Review regularly.	L	B2
87	Scots Pine ( <i>Pinus sylvestris</i> )	E/M	F/P	6.00	3.00	0.00	0.00	2.50	3.00	1	175	2.10	Heavily suppressed and of dubious sustainability.		S	C2
88	Scots Pine ( <i>Pinus sylvestris</i> )	E/M	F	7.00	4.00	1.50	1.00	1.00	3.00	1	191	2.29	Heavily suppressed and almost completely covered in Ivy. Is a dubious sustainability.	Review regard retention context	S	C2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
89	Scots Pine ( <i>Pinus sylvestris</i> )	E/M	F	12.00	4.00	3.00	3.50	3.00	2.50	1	290	3.48	Suppressed distorted but maintaining reasonable vigour and vitality.	Cut Ivy and review.	M	C2
90	Scots Pine ( <i>Pinus sylvestris</i> )	E/M	F	13.00	5.00	3.50	3.00	3.00	3.50	1	306	3.67	A larger and slightly dominant specimen within group.	Cut Ivy and review regularly.	L	B2
TL2	Tree Line 2 Leyland Cypress ( <i>Cupressocyparis leylandii</i> )	M	P	17.00	1.50	6.00	6.00	6.00	6.00	1	557	6.68	A broadly continuous and contiguous alignment of individual specimens combining to create a substantive alignment. Individual trees appear to be maintaining reasonable vigour and vitality in line with the species predispositions, but many specimens are already exhibiting evidence of mechanical failure and limb loss, a factor that must be expected with maturity and likely to increase over time. Substantial concerns arise regarding sustainability of these trees and their suitability for retention beyond the short term. Management issues stemming from apical growth habits and an inability to apply effective pruning type management will raise contextual and site management issues over time.	Review regarding ongoing sustainability and suitability for retention.	M	C2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
TL3	Tree Line 3 Leyland Cypress ( <i>Cupressocyparis leylandii</i> )	E/M	F/P	10.00	0.00	3.00	5.00	3.00	4.00	1	382	4.58	A continuous alignment of cypresses presumed to have been installed to create a hedge or shelter/screen. At this time, most plants have coalesced to create a prismatic affect however, most tend to be multi-stemmed from low level suggesting previous management attempts that have resulted in the development of multi-stem stature and substantial broadening of the crowns. These trees must be regarded as beyond management at and ill-suited for retention with any intent of a managed hedge like configuration. Attention is drawn to issues relating to the species including difficulties relating to management as cited within the high hedges legislation in the UK. The alignment at present should be regarded as being unmanageable unsustainable and unsuitable for retention.		S	C2