

**Arboricultural Report  
Trees at Proposed Site at  
Crofton Road  
Dun Laoghaire  
Co Dublin**

**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) Crofton Road Tree Constraints Plan	<b>Tree Constraints Plan</b> A colour coded plan depicting the predevelopment location, size, calculated constraints, and simplified tree quality
2) Crofton Road Tree Impacts Plan	<b>Tree Impacts Plan</b> This colour coded plan represents the effects of the proposed development works on the above tree population and depicts trees to be retained and removed.
3) Crofton Road Tree Protection Plan	<b>Tree Protection Plan</b> This colour coded 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 address condition 5 of the DLRCC correspondence of the 18<sup>th</sup> December 2020. Accordingly, this report includes a standard Arboricultural assessment in line with the recommendations of “BS 5837: 2012 Trees in Relation to Construction – Recommendations”, that outlines the expected Arboricultural repercussion of the proposed development. It also includes a financial evaluation of trees located within the public realm, based on the current “CAVAT” evaluation system.
- 1.2 In respect of the proposed development, the project will require the loss of all existing trees within the car park site. Many of these trees are already compromised in respect of sustainability and where typically small, meaning that their visual amenity value was limited to their immediate locale, as well as being relatively simple to replace with new stock. Accordingly, their loss will be mitigated as part of the development’s landscaping.
- 1.3 As part of the broader development and in line with current designs, the provision of underground services to the site, involves works close to two Sycamores, numbers 485 and 486. All other works within the Crofton Road area are located to the south of the roads centre-line and thus are regarded as physiologically detached from the tree population located to the north of the road.
- 1.4 The proposed works relating to surface water drainage will affect the calculated root protection area. To date, the nature of these works is unknown, though consideration is being given to possible “trenchless” or other “low impact” options and techniques that may provide potential for minimising tree disturbance and possible tree retention.
- 1.5 In respect of mitigating and reducing Arboricultural issues, it is advised that a further review might be made of the drainage system. Shifting the location of the pipeline that crosses Crofton Road some 2.50 metres to the east, would see it pass through (or near to) the location of Sycamore no.485. As this tree is of poor quality and offers limited sustainability, it would be preferable to consider the sacrifice this single tree. This would provide improved access to a nominal works corridor that exists between the calculated root protection areas of Sycamores 484 and 486.
- 1.6 Of the three trees potentially affected by the current proposals, and as noted above, Sycamore no.485 is substantially damaged and offers limited sustainability, regardless of the proposed works. This issue has resulted in a substantial difference between the CAVAT evaluation of both tree, which based on the “Spreadsheet to Calculate of Individual Tree Stock (Quick Method)”, provides sterling values of-
  - Sycamore no.484 = £27,747.00
  - Sycamore no.485 = £3559.00
  - Sycamore no.486 = £12,432.00

- 1.7 While the full extent of works remains unknown at this time, the current option will see disturbance to Sycamores 485 and 486, possibly to an extent that could result in a need for tree removal. Such a decision would not be made until there is a better understanding of the nature and extent of required works, and in this respect, the trees would under the current proposals, be regarded as “at risk”.
- 1.8 In line with BS 5837: 2012 Trees in Relation to Construction – Recommendations, a tree protection plan is provided as part of this suite of documents. It illustrates a principal intention of separating the works from the broader public realm by way of temporary fencing. In line with limited information at this stage, the final location and extent of the required works space is unknown and therefore will be subject to modification, with a strong preference towards attaining as smaller and least disturbing footprint as possible.
- 1.8 Should tree loss become necessary, then the use of the above valuation should be reviewed in conjunction with, and in comparison to, physical replacement costs. Trees of similar sizes (less than 11.50 metres) are available but will be subject to availability and to mechanical installation issues, such as available space and pre-existing underground infrastructure and any constraints as may apply regarding new planting near same. Additionally, consideration should be given to the establishment of larger planting stock in exposed coastal conditions.
- 1.9 Having reviewed the landscape proposals for the main development, note is made of the extensive inclusion of new planting, that far exceeds the site’s current tree population. This suggests that at completion, the development will have resulted in a net gain in Arboricultural terms. Accordingly, any loss of trees which may arise from the development are considered inconsequential.

## **2 Introduction**

2.1 This report was commissioned by-

**Fitzwilliam / Alburn Group**

2nd Floor

Elm House

Leopardstown Office Park

Sandyford

Dublin 18

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.

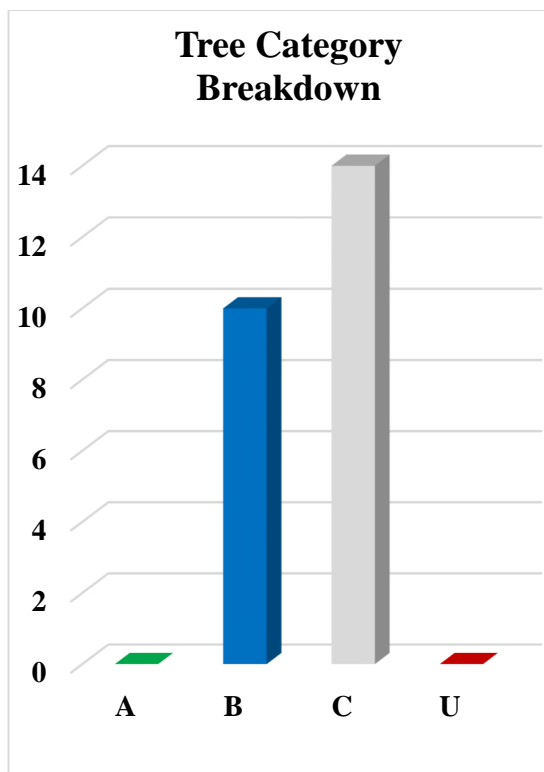


### **3 Site Description**

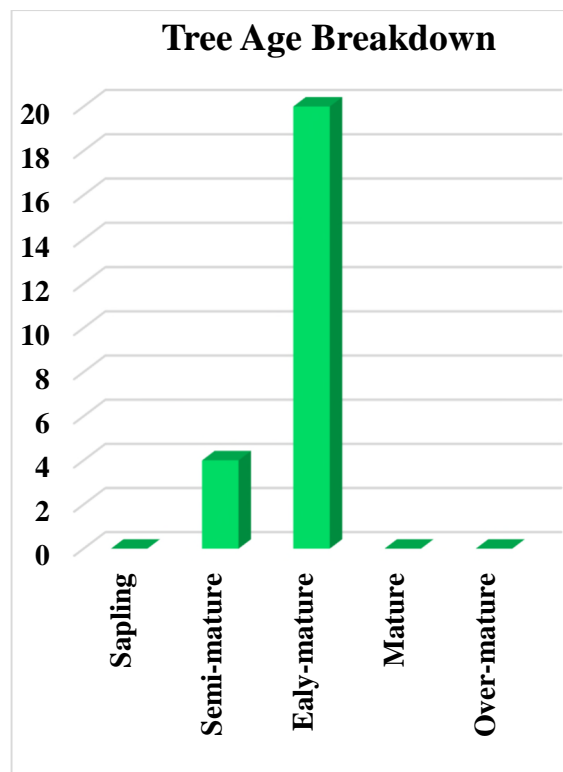
- 3.1 The site area includes a specific section of Crofton Road, as well as the southern portion of the car par associated with St Michael’s Hospital, circa 200 metres north-west of the Marine Road and Crofton Road junction.
- 3.2 The site areas are substantially urban and artificial in context. They consist of existing roadway and car parking facilities. The trees this report describes, arise from often limited soft landscapes areas between or adjoining paving or road surfaces.

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

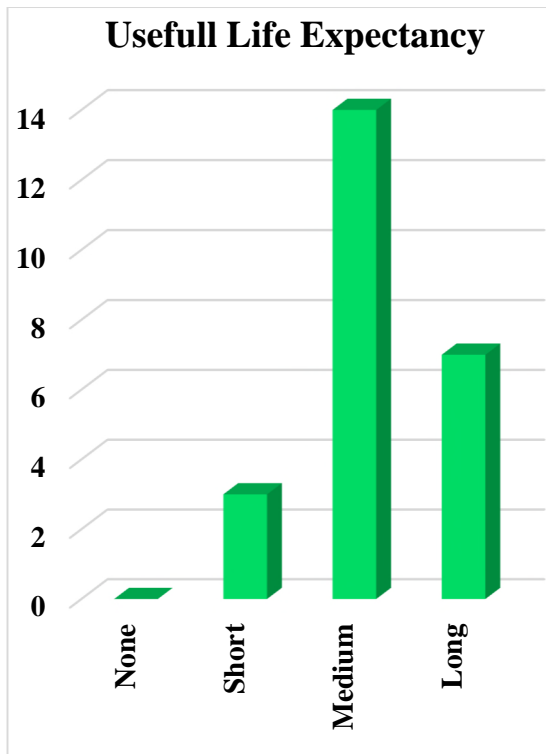
- 4.1 The tree population delt with by this report, comprises street trees and trees within a car parking scenario. No trees where found to be in such poor condition as to require removal, however, all trees arise from highly artificial and sometimes restrictive ground scenarios, thereby suggesting sustainability and management issues in the future.
- 4.2 In general terms, the road edge trees are in reasonable condition however, many show signs of decline or die-back that may be attributable to their location and harsh, salty coastal conditions. Much of the small diameter twiggy dead-wood is considered likely to relate to their salty coastal position.



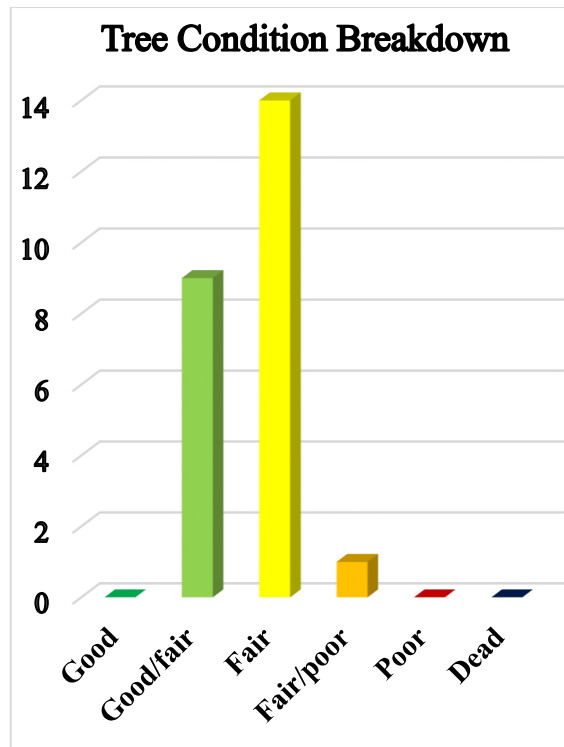
Graph 1



Graph 2



**Graph 3**



**Graph 4**

- 4.3 Most trees show obvious evidence of prior decapitation at or about 3.00 – 4.00 m. Most trees support regenerative crown structure including new pole-wood and new crown supporting elements. Much of this material is still vigorous and is likely to prove stable however, and associated with the past decapitation, many trees show localised elements of cavity development and decay. Such affected trees may be more susceptible to mechanical damage and crown failure.
- 4.4 Some trees are affected by issues that may limit sustainability over time. The mechanical issues noted above may require periodic attention and management. However, growth and ultimate size equally raises issues. Many of the species encountered, such as Sycamore and Lime can become particularly large trees at maturity. Therefore, the tree's proximity to roadway may see carriageway encroachment issues, and proximity to structures, such as paving, roads and kerbs is likely to result in mechanical damage. Evidence of such damage is already noted regarding some paving.
- 4.5 The artificiality of the environment must be considered in respect of its effect on trees and their rooting systems. Notwithstanding the calculated "root protection areas" apportioned to the described trees, it is likely that the ground environments associated with structures such as paving and particularly to road surfaces, will have been restrictive to natural tree root development. Particularly, the soil strength and bulk density associated with the "California Bearing Ratio" required to provide robust and durable road surfaces, typically prevent access to tree roots. Therefore, and while requiring corroboration at excavation time, it is quite likely that natural radial root pattern development will have been influenced by built ground features and that a large proportion of tree roots will be limited to what currently includes areas of soft landscape. It is however likely that zones of interface between the features may support much root material, for example at kerb edges or at joints between built structures.

- 4.6 Notwithstanding the issues noted above, all trees reviewed are currently suitable for retention and offer varying degrees of sustainability and amenity value. However, for some trees the sustainability may be limited, regardless of any development related disturbance.
- 4.14 As can be seen from the graphs above, the typically young age profile relates well to the tree conditions. The fact that the categorisation is dominated by “C” grade trees would appear to relate more to the exposed and salty costal conditions that may have contributed to the increased rate of twiggy decline note within the roadside trees.

## **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.

## **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 realist 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 made-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. However, some poorer-quality trees, if located in areas of reduced sensitivity, might offer some degree of limited retention, dependant on the retention context and the threat they may present.
- 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:
  - 7.1.1 The development will consist of the demolition of an existing 2 no. storey house (c. 78 sqm) on the site and the construction of 102 no. Build-to-Rent residential apartments (as defined under SPPR 7 of the 'Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities') across 2 no. buildings (Building 01 and Building 02), along with ancillary residential amenities and a publicly accessible café (overall total gross floor space c. 8,765 sqm) on a c. 0.42ha site.
  - 7.1.2 Building 01 (fronting onto Crofton Road) comprises part 5 no. storeys, part 6 no. storeys, part 8 no. storeys and extending to part 13 no. storeys in height (with setback at 13<sup>th</sup> storey level) and will accommodate 42 no. 1-bed apartments and 15 no. 2-bed apartments (c. 5,047 sqm). A flagpole extends from 8<sup>th</sup> storey level at Building 01. Building 02 to the south extends to 9 no. storeys in height (with setback at 9<sup>th</sup> storey

level including a terrace),and will accommodate 38 no. 1-bed apartments and 7 no. 2-bed apartments (c. 3,718 sqm).

- 7.1.3 Internal residential support facilities and amenities in the form of a co-working/study space, gym, games area, lounge/kitchen area, and multi-purpose recreational space, alongside a reception, postal and waste storage areas (c. 363 sqm) is provided at ground floor level of Building 01, with an enclosed amenity space at 13<sup>th</sup> storey level which will be publicly accessible on occasions, (extending to c. 77.4 sqm). A publicly accessible café unit is provided at ground floor level of Building 01 extending to c. 93 sqm. Additional internal residential support facilities are found at ground floor level of Building 02 in the form of a bicycle repair station, waste and storage units (c. 45.8 sqm).
- 7.1.4 765 sqm of communal landscaped open space is provided, included at the courtyard between the two buildings, roof terraces at 6<sup>th</sup> storey level [western elevation], 9<sup>th</sup> storey level [southern elevation] and 13<sup>th</sup> storey level [enclosed - north, east and west] at Building 01 and at the 9<sup>th</sup> storey level [west elevation] roof terrace of Building 02. A total of c. 681 sqm of landscaped public open space is located to the north of Building 01, adjacent to Crofton Road including a pedestrian route along the eastern perimeter of the site. Balconies are included at both buildings.
- 7.1.5 The development includes a shared right of way providing access to St. Michael's Hospital along the western perimeter of the site, accessed from Crofton Road. This provides access to 3 no. car parking spaces (including 1 no. disabled space) and 2 no. motorcycle parking spaces located between the two buildings. A secondary landscaped pedestrian route is included along the eastern perimeter of the site providing access to St. Michael's Hospital. A total of 150 no. secured bicycle parking spaces are provided at the ground floor level of Building 02, with additional external bicycle parking within the external courtyard (26 visitor spaces) and public open space at the northern perimeter for café use (8 public bicycle parking spaces).
- 7.1.6 Modifications to the configuration of the roadway and footpath, including new road markings are included at Crofton Road to facilitate the implementation of a new vehicular entrance at the western perimeter.
- 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 Specific Issues and Arboricultural Concerns**

- 8.1 Within the site area, the scale and nature of the proposed development does not allow for the retention of any trees. Accordingly, all 7no. specimens (“A” to “G” inclusive) will be removed.
- 8.2 In respect of trees outside of the main site area, note is made of specific ground scenarios and works extents that will conspire to limit impacts to trees. Firstly, most of the works, including mains water and foul sewer connections, occur within the southern half of the Crofton Road carriageway. These works are considered physiologically detached from the trees by the road structure, whom through high soil strengths, degrees of compaction and high “CBRs” (California bearing ratios) create a ground scenario that is inaccessible to tree roots. For these reasons, such works raise no specific Arboricultural concern.
- 8.3 In contrast, the surface water connection must be made to the existing service line located close to the pavement edge and beyond the grass verge on the north side of Crofton Road. The works may be substantial, and it is expected that much of the northerly extension to the works “red line” adjoining tree nos. 485 and 486 will suffer some degree of disturbance. As this zone includes a large proportion of the calculated root spreads for Sycamores 485 and 486, then there is a high potential for substantial damage to both.
- 8.4 At this stage, the nature and extent of connection works is unknown and therefore the extent to which the effects can be limited and localised is equally unknown. However and to date, the developer has expressed a preference to attaining a scenario whereby tree retention is maximised.
- 8.5 Regarding the above, it has been noted that of the two trees currently under greatest threat, no. 485 is already of poor quality and offers limited sustainability regardless of the proposed works. For this reason, it is advised that further investigations are made and that considerations might be given to the realignment of the proposed pipeline. A preferred option would be to see the alignment moved circa 2.50 metres to the east, to take a path close to the stem of Sycamore 485. This option would improve the potential to access an existing space between the “root protection areas” of Sycamores 484 and 486, but would require the loss of the poor quality no.485.

## **9 Design Iterations and Arboricultural Considerations**

- 9.1 This report relates to clause 4.4.2.1 of BS5837-2012 in that its finding relate to a predefined concept that was issued for review. Accordingly, the report assesses Arboricultural implications and impacts of the proposals, making recommendations in respect of tree protection relating to those trees that might be retained and as outlined below.

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

- 10.1 The expected tree impacts have been represented graphically on the tree impacts drawing “**Crofton Road 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.
- 10.2 In this colour coded drawing, trees denoted with “Broken Pink” crown outlines are to be removed and those denoted with “Continuous Green” crown outlines are to be retained.
- 10.3 Detail of the development proposals where gained from drawings provided by-
- Drmot Foley Landscape Architecture – Landscape Layout
  - Reddy Architecture + Urbanism \_ Architectural Layout
  - Mujir Associates consulting Engineers – Drainage and Engineering
- 10.4 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.
- 10.5 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.

## **11 Tree Retention and Loss**

- 11.1 The colour coded drawing “Crofton Road 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.
- 11.2 The scale and nature of the project means that all trees within the main “car park” site will be removed (7no. trees), including trees “A”, “B”, “C”, “D”, “E”, “F” and “G”
- 3no, category “B” trees,
  - 4no. category “C” trees,
- 11.3 Additional to the above and relating to drainage works on “Crofton Road” regarding the accessing and connection to the surface water sewer under the current design

proposals, it appears that 2no. additional trees are considered “at risk of damage and disturbance”, including nos. 485 (category C) and 486 (Category B).

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

- 12.1 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.
- 12.2 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.
- 12.3 This report provides a “Preliminary Arboricultural Method Statement” at “Appendix 1” to this report, as well as the associated “Tree Protection Plan” drawing “Crofton Road Tree Protection Plan”.
- 12.4 In this instance, it is appreciated that the works zone associated with trees within the roadside scenario is relatively small. For public health and safety reasons, the site will need to be hoarded off. It is advised that the site exclusion hoarding will effectively act as tree protection hoarding, by localising and restricting works and excavation activities to a specific area of the affected grass verge.
- 12.5 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”.
- 12.6 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.

## **13 Preliminary Management Recommendations**

- 13.1 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.

- 13.2 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.
- 13.3 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.

## **14 Bibliography**

- 14.1 British Standards Institution (2010) BS 3998:2010: Tree Work - Recommendations. London: British Standards Institution.
- 14.2 British Standards Institution (2012) BS 5837:2012: Trees in Relation to Design, Demolition and Construction - Recommendations. London: British Standards Institution.
- 14.3 Jackson, R.B et al (1996) A Global Analysis for Root Distribution in Terrestrial Biomes *Oecologia*, 108 (1996) pp389-411, Springer Verlag
- 14.4 Lonsdale, D. (2005) *Principals of Tree Hazard Assessment and Management*, London, TSO
- 14.5 Mattheck, C. and Breloer, H. (1994) *The Body Language of Trees*, London, TSO
- 14.6 Roberts, J. and Jackson, N. and Smith, M. (2006) *Tree Roots in the Built Environment*, London, TSO
- 14.7 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, “Crofton Road 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 “Crofton Road 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 “Crofton Road 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 “Crofton Road 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 original survey was carried out in December of 2020. This survey portion of the overall report is not an Implication Assessment though but provided some of the basic information regarding its compilation. The compilation of this survey was guided by the recommendations of BS 5837: 2012. This survey typically includes trees of stem diameters exceeding 150mm at approximately 1.50 metres from ground level. The survey relates to current site conditions, setting and context.
- 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 tree survey was carried out during the winter period. 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.

**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 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
478	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	F	10.40	2.25	3.00	2.50	1.50	2.50	1	404	4.85	Misshapen and distorted. Has undergone prior Crown reduction type works. Crown vigour is good though evidence suggests site exposure and wind burn. Southern crown appears to have been cut back to help bus parking.		M	B2
479	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	G/F	12.40	2.50	4.50	4.00	4.00	3.50	1	563	6.76	Squat and spreading specimen of good vigour and vitality. Crown form suggests prior crown reduction type works. Vigour is fair though canopy suggests elements of wind scorch and relating to exposed position.		L	B2
480	Sycamore ( <i>Acer pseudoplatanus</i> )	S/M	F	8.80	2.50	4.00	4.00	4.00	4.00	1	350	4.20	Squat and spreading specimen suggesting early life decapitation. Vigour and vitality are highly variable with substantial twiggy deadwood in evidence, that may be attributable to salty coastal condition.	Review annually.	M	C2
481	Lime ( <i>Tilia europea</i> )	E/M	G/F	10.50	2.50	4.50	4.50	3.00	3.00	1	395	4.74	Slightly distorted through suppression. Tree has undergone prior pruning particularly on southern side of canopy regarding proximity to roadway. Primary stem appears to support and occluded linear wound. General vigour and vitality appear good. Lower western canopy has been cut back presumably to help maintenance of vehicular access.		L	B2
482	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	F	11.00	2.25	3.50	5.00	4.00	3.00	1	376	4.51	Heavily unbalanced to south-east. General vigour and vitality are highly variable that may relate to salty coastal conditions.	Clean-out review regularly. Consider structural pruning to address visible extents of cavity development and localise decay within crown.	M	C2

No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
483	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	F	9.90	2.00	1.50	2.00	2.00	2.50	1	312	3.74	Small and squat specimen previously decapitated. Vigour and vitality are impaired possibly attributable to salty coastal condition.	Review on annual basis.	M	C2
484	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	F	9.90	2.25	4.50	4.00	3.50	4.00	1	541	6.49	Has undergone prior pruning leading to crown re-growth. Vigour and vitality are fair but variable with minor, twiggy dead-wood in evidence		L	B2
485	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	F/P	9.80	2.50	3.50	4.00	3.00	3.00	1	455	5.46	Squat and distorted having undergone repeated prior pruning. Entire stem supports a major wound on western side extending to circa 2.50 m. Deterioration of underlying timber is visible and ongoing. Tree has been repeatedly pruned in past. Vigour and vitality are fair but variable.	Review on annual basis regarding ongoing suitability for retention.	S	C2
486	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	F	11.40	2.25	5.00	5.00	4.00	5.00	1	423	5.08	Decapitated in early life. Vigour and vitality are variable that may be attributable to salty coastal condition. Crown supports some deadwood.	Clean-out.	L	B2
487	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	G/F	11.20	2.25	5.00	5.00	5.00	5.00	1	487	5.84	A strong and broadly vigorous specimen supporting only minor twiggy deadwood. Tree appears to have been decapitated in early life.	Review regularly.	L	B2
488	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	G/F	12.30	2.25	5.00	5.00	5.00	4.50	1	458	5.50	Evidence suggests early life decapitation. Some wounds are now subject to notable decay. Vigour and vitality are fair with only minor twiggy deadwood.	Review annually.	M	C2
489	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	F	13.90	2.50	5.50	4.00	5.50	5.00	1	528	6.34	Slightly distorted but tree is keeping good vigour and vitality. Crown form suggests early life decapitation. Crown supports only minor deadwood.		L	B2
490	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	F	12.50	2.25	4.50	5.00	5.00	2.50	1	436	5.23	Previously decapitated and now substantially one-sided through suppression. Vigour and vitality remain fair.	Review regularly.	M	C2
491	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	F	10.80	2.50	4.50	4.50	5.00	4.00	1	385	4.62	Relatively small specimen heavily decapitated in past. Wound is now subject to localised decay.	Review annually.	M	C2



No.	Species	Age	Con	Ht.	CH	N	E	S	W	Stm	Dia.	RPA	Structural Condition	PMR	Yrs.	Cat
492	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	F	9.40	2.00	5.00	5.00	4.00	2.50		420	5.04	Squat and suppressed with general imbalance to north-east. Root development has contributed to substantial uplifting of adjoining pavement.	Review regularly.	M	C2
493	Sycamore ( <i>Acer pseudoplatanus</i> )	E/M	F	11.10	2.50	4.00	4.00	5.00	5.00	1	433	5.19	Decapitated in past with much of crown comprising regenerative growth. Some pruning wounds are now subject to notable decay.	Clean-out to remove review annually.	M	C2
494	Sycamore ( <i>Acer pseudoplatanus</i> )	S/M	G/F	9.00	2.50	4.00	4.50	2.50	4.00	1	350	4.20	Slightly distorted through suppression. Prior pruning has resulted in localised decay and cavity development. Vigour and vitality are variable.	Review regularly.	M	C2
A	Weeping Birch ( <i>Betula youngii</i> )	E/M	F	3.00	0.00	2.50	3.00	2.00	2.50	1	197	2.37	Appears to be maintaining reasonable vigour and vitality.		L	B2
B	Italian Cypress ( <i>Cupressus sempervirens</i> )	S/M	G/F	7.00	1.00	0.50	0.50	0.50	0.50	1	226	2.71	Young and vigorous specimen supporting stem wound on eastern side. Arises from limited planting configuration where future growth will result in structural disturbance. Tree is considered unsustainable.		S	C2
C	Italian Cypress ( <i>Cupressus sempervirens</i> )	S/M	G/F	7.00	0.50	1.50	2.00	2.00	1.50	1	398	4.77	Arises from limited planting configuration where growth has already enveloped kerb edge. Retention will inevitably result in wall damage. Tree is unsustainable.		S	C2
D	Ornamental Apple ( <i>Malus variety</i> )	E/M	F	3.50	1.25	2.50	2.00	2.50	2.50	1	229	2.75	Squat specimen heavily decapitated in past.		M	B2
E	Ornamental Cherry ( <i>Prunus variety</i> )	E/M	F	4.50	1.00	2.00	2.50	2.00	2.50	4	401	4.81	Tree appears vigorous but affected by which is broom and widespread suckering.		M	C2
F	Ornamental Apple ( <i>Malus variety</i> )	E/M	G/F	4.50	0.50	2.50	2.50	2.50	2.50	1	229	2.75	Tree appears vigorous but has undergone substantial prior pruning.		M	C2
G	Silver Birch ( <i>Betula pendula</i> )	E/M	G/F	8.50	2.00	3.00	3.50	3.50	3.00	1	376	4.51	Tree appears vigorous but arising from limited degree reserve within car park configuration. Adjoining kerb edge and distortion that may be attributable to root growth.	Review regularly.	M	B2

