



**Arboricultural Report  
Trees at Proposed Site at  
Finlay Park  
Naas  
Co Kildare**

**November 2022**

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### Associated Drawings

This report is for reading in conjunction with the drawings noted below

<u>Drawing Title</u>	<u>Drawing Subject</u>
1) <b>Finlay Park 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>Finlay Park 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>Finlay Park Tree Protection Plan</b>	<b>Tree Protection Plan</b> This plan depicts the nature, location and extent of tree protection measures required for sustainable tree retention.



# **1 Report Summary**

- 1.1 This report intends to provide the requirements set out in the Kildare County Council Planning Department's LRD Opinion. Particularly, this report provides the Arboricultural information outlined in the opinions section headed "Open Space and Biodiversity", section 2 (a to i) and section 3.
- 1.2 Overall, the site area supports little vegetation of Arboricultural interest, it being broadly open between two hedge lines, one to the north and the other to the south of the site. It is noted that both alignments are indicated on Local Area Plan map 7.1 in respect of objectives to protect and retain both.
- 1.3 While the hedges support many healthy and ostensible sustainable plants, the emergent trees are often not of good quality. The southern hedge (Hedge 2) supports only one currently healthy Ash, with the remaining trees being dead Elms. To the north, the hedge (Hedge 3) supports only two trees, one in currently fair condition while the other is particularly poor.
- 1.4 The above creates a scenario whereby the hedges (hedges 2 and 3) offer notable sustainability, however only two trees (Nos.18a and 32) offer any realistic sustainability. Notwithstanding this, and as both trees are Ash, some concern surround how long these trees may remain sustainable in respect of the ongoing spread of Ash Dieback disease.
- 1.5 As the proposed development will effectively occupy the space between the two hedge lines, then there appears to be substantial scope to both retain and protect the hedges and retainable trees during development works. In line with the Arboricultural Method Statement and the "Tree protection Plan" that accompany this report, sustainable retention will be best accomplished with the adoption of a system of fenced construction exclusion for the duration of construction works.

## **2 Introduction**

- 2.1 This report was commissioned by-  
**Westar Investments Ltd.**

This report was prepared by-  
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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 framework for such reports, its composition, inclusions and recommendations being followed as a general basis for such reporting.

### **Report Context**

- 2.3 This report includes an Arboricultural review of the proposed development project. The report includes an assessment of the sites existing tree population within its current context. The report assesses their potential for sustainable retention in the post-development scenario. The report also describes 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. These findings were developed after reviewing the proposed project details as provided by the design team, 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. This plan 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 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 regarding sustainable tree retention.

### **3 Site Description**

- 3.1 The site is located to the west of Naas town centre, to the north of the Grand Canal and to the east of Old Caragh Road and the existing element of Finlay Park
- 3.2 While the site is historically of agricultural context, much of the west and south-west of the site is previously disturbed, having been used as a construction compound. The remainder of the site comprises rough grassland, supporting two hedges, one to the north and one to the south. There are a small number of trees on the site, all of which arise from the aforementioned hedges.

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

- 4.1 The site area, dominated by rough grassland supports limited larger vegetation. This is concentrated within two hedge lines, one associated with a drainage ditch alignment to the north of the site, the other, a larger more unkempt thorn hedge positioned on a slight embankment along the northern edge of the canal towpath to the south of the site.
- 4.2 While both hedges are dominated by Hawthorn, the northern hedge (Hedge 3) is small, and appear regularly cut back, while the southern hedge (Hedge 2) is much larger and shows no signs of cutting and effectively comprises full grown Hawthorns. Continuity within both hedges is good, with only minor, localised gaps.
- 4.3 All trees associated with the site area arise from the above-mentioned hedge lines. Many trees appear to be naturally arising, comprising either Ash or Wych Elm. The exception to this arises only outside of the extreme south-east of the site, where the site is adjoined by several Beech (Nos 19 and 20) that arise from outside of the “red line” area.
- 4.4 Note is made that all Elms within the “red line” area are dead and some are in a state of collapse. These trees offer no sustainability and must be removed.
- 4.5 The Ash on the site are of variable condition. While No.18a to the south-east appears currently to be in good condition, Nos 31 and 32 to the north are quite poor, with No.31 in particular appearing to offer no realistic sustainability. While ongoing monitoring is advised, current symptomatic evidence suggest that these two trees are affected by Ash Dieback disease. This raises particular concern surrounding the likely sustainability over time, of and Ash on the site.

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

- 5.1 In respect of trees as they relate to planning within the Kildare County Council area, note is made of two areas of guidance included within **The Development Plan 2017-2023**.
- 5.2 The current development plan makes numerous references to trees and hedges, both in respect of retention and protection, as well as new planting.



- 5.3 Fundamentally, note is made of policy considerations and specific references to the “Tree Preservation Order Guidance”.
- 5.4 From a planning and design standpoint, note is made of various objectives, including DL04 requiring habitat assessments including a review of trees and hedges, as well as RH9 that requires the consideration of trees and hedges in rural development.
- 5.5 Chapter 13.10 “Green Infrastructure” deals specifically with Trees and Hedgerows. This section provides specific guidance in the form of Policies GI8 to GI17. Of these particular note is made of GI10 that requires that trees and hedges are provided with adequate protection during development works.
- 5.6 Chapter 17, Development Management Standards also makes specific mention of trees in that 17.2.6 requires the consideration of trees, particularly mature trees on a site, with regards to their retention and protection.
- 5.7 Notwithstanding the notes above, the current development plan shows Tree Preservation Orders on or near the site. However, note is made of Map 7.1 (Green Infrastructure Map) of the Naas Local Area Plan 2021- 27, that indicates objectives to retain and protect substantial hedges to both the north and south of the subject site.

## **6 Other Legislative and Legal Constraints**

- 6.1 Under the Forestry Act 2014, the felling of a tree standing in a county area requires a felling license unless the trees are exempted under Section 19 of the Act. An exemption applies where trees are being felled in line with a specific detail of a grant of planning permission.
- 6.2 Some "Section 19" exemptions are not applicable to the development scenario, for example, those applying to fire control, forest survey or gene pool protection relating to horticultural use or Christmas tree production.
- 6.3 Some exemptions are pertinent to the development scenario, particularly Section 19(1) (M)(ii), where "the removal of which is specified in a grant of planning permission".
- 6.4 Other non-specific exemptions may also be applicable, including-
- Trees standing in an urban area.
  - Trees within 30 metres of a building (other than a wall or temporary structure), but excluding any building built after the trees were planted.
  - Trees removed by a public authority in the performance of its statutory functions.
  - A tree that is, in the opinion of the planning authority, dangerous on account of its age, condition or location.
  - A tree within 10 metres of a public road and which, in the opinion of the owner (being an opinion formed on reasonable grounds), is dangerous to persons using the public road on account of its age or condition.

- 6.5 The above derogations do not apply where-
- The tree is within the curtilage or attendant grounds of a protected structure under Chapter 1 of Part IV of the Act of 2000.
  - The tree is within an area subject to a special amenity area order
  - The tree is within a landscape conservation area under section 204 of the Act of 2000.
  - The tree is within a monument or place recorded under section 12 of the National Monuments (Amendment) Act 1994, a historic monument or archaeological area entered in the Register of Historic Monuments under section 5 of the National Monuments (Amendment) Act 1987, or a national monument in the ownership or guardianship of the Minister for the Arts, Heritage and the Gaeltacht under the National Monuments Acts 1930 to 1994 or is within a European Site or a natural heritage area within the meaning of Regulation 2(1) of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011)
- 6.6 For further clarification, contact should be made with Forest Service (Department of Agriculture, Fisheries and Food). The Felling Section of the Forest Service is based in Johnstown Castle, Co. Wexford
- 6.7 Other legislation may affect tree cutting and felling. Particular note should be made of the "Wildlife Act 1976 (as amended), as well as the EU Habitats Directive. These offer protection to animals, including Bats that often roost or even breed in trees. The protection afforded by the above legislation means that particular care must be taken in the pruning or felling of trees that may contain Bats. For this reason, specific specialist advice should be sought.

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

- 7.1 Retaining trees requires space. There is a big difference between physically preserving a tree and ensuring its future survival. Sustainable tree retention often depends on the extent and nature of construction protection.
- 7.2 Like all living things, trees are highly dependent on the environment in which they exist, and particularly on a continuity in supplies of water and nutrients from the soil. Any long-term change in ground conditions can easily affect a tree's metabolism, health, and sustainability.
- 7.3 Particularly, development and construction activities can easily damage the soil environment. Removing, disturbing or denaturing soil can irreparably damage tree roots and can render the soil incapable of supporting plant root function. Most modern construction requires large plants, equipment, and vehicles. Such machinery causes soil profile destruction and compaction that denatures the soil.

- 7.4 The sustainability of a tree's health and safety can be compromised where the above issues occur within the minimum "root protection area" defined by "BS5837-2012", then the affected tree is likely to be regarded as unsustainable and unsuitable for retention.
- 7.5 Sustainable tree retention must accept changing contexts and increased management in the future. Where rates of occupation and use increase, then any retained trees have the potential to cause harm or damage. This issue may be exacerbated where shelter loss and exposure occur regarding the retention of individual trees.
- 7.6 Retained trees should be considered in respect of shadow-cast, light admission, and view-blocking. Wind patterns can affect leaf shedding, causing drifts and accumulations, creating management issues around drains and gullies, or creating slippery surfaces.

## **8 Nature of Project Works**

- 8.1 The proposed development is described as:

The proposed development will consist of the construction of 134 no. apartments (comprising a mixture of 70 no. 2 storey apartments and 64 no. apartments - 22 no. 1 bedroom apartments, 77 no. 2 bedroom apartments, and 35 no. 3 bedroom apartments) with private open space provided in the form of balconies/terraces as follows:

- A) Block A (4 storey apartment block) comprising 26 no. apartments (6 no. 1 bed units, 16 no. 2 bed units & 4 no. 3 bed units); Block B (part 4 part 5 storey apartment block) comprising 66 no. apartments (10 no. 1 bed units, 33 no. 2 bed units and 23 no. 3 bed units), with a commercial/ health/medical unit (c. 247.6 sq. m) at ground floor; Block C (part 4 part 5 storey apartment block) comprising 42 no. apartments (6 no. 1 bed, 28 no. 2 bed units and 8 no. 3 bed units);
- B) Vehicular/pedestrian and cyclist access from the Old Caragh Road (in new arrangement) along with the provision of 201 no. undercroft and surface car parking spaces as well as 388 no. undercroft and surface cycle parking spaces; internal road and shared surface networks including pedestrian and cycle paths;
- C) Public Open space including proposed plaza, as well as central communal (courtyard) open space including outdoor playground area at podium level;
- D) 1 no. temporary (for 3 no. years) 3-sided signage structure (c. 4.5m in height) at the entrance to the proposed development.
- E) Provision of foul and surface water drainage, including relocation of existing foul main in northern part of site as well as green roofs; linear greenway path, bin stores; plant rooms; public lighting and all associated landscaping and boundary

treatment works, site development and infrastructural works, ESB substations, and all ancillary works necessary to facilitate the development.

- 8.2 Considering the scope and scale of the proposed development, then many of the issues dealt with at "Construction Works and Trees" above could apply if trees and hedges are not protected during construction works, including-
- a) Direct conflict with proposed structures, thus requiring tree removal.
  - b) A partial conflict where the "Root Protection Area" is encroached upon by works or ground amendments and cannot be preserved/protected in full.
  - c) Environmental damage e.g. compaction, capping, sealing – changing the existing ground environment to one that can no longer support tree root function.
  - d) 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 which makes a tree unsuitable for retention.

## **9 Development Related Issues and Arboricultural Concerns**

- 9.1 The greatest issues affecting trees has been the consumption of site space and the possible encroachment on trees ostensibly retainable trees and hedges.
- 9.2 This means that successful tree retention will be subject to the limitation of construction related disturbance and the provision of suitable tree protection during the construction phase. In this respect, attention is drawn to the tree protection proposals illustrated in the "tree protection plan" drawing (Finlay Park Tree Protection Plan) that accompanies this report. This drawing calls up the physical separation of the primary works areas, from those supporting trees and hedges, by the use of temporary (construction period) protective fencing.

## **10 Design Iterations and Arboricultural Considerations**

- 10.1 This report relates to clause 4.4.2.1 of BS5837-2012 in that its finding relates 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.
- 10.2 notwithstanding 10.1 above, the design team was aware of the locations of the tree lines/hedges, and the local area plan objectives to retain/protect both. Accordingly, the clear majority of the proposed development occurs away from the hedge lines and can be accomplished with minimal concern in respect of negative impact. This will however be contingent on the provision of suitable tree protection measures during the construction period.

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

- 11.1 The expected tree impacts have been represented graphically on the tree impacts drawing "**Finlay Park Tree Impacts Plan**" and 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 between the existing site context and the development proposals regarding new structures.
- 11.2 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.
- 11.3 Detail of the development proposals where gained from drawings provided by-
- C+W O'Brien Architects – Architectural layouts
  - Donnachadh O'Brien Architects - Consulting Engineers – Drainage and Engineering information overlaid on Masterplan
  - Landmark Design & Consultancy Ltd. – Landscape proposals.
- 11.4 The evaluation is primarily based on minimum protection ranges as defined in paragraphs 4.6.1, 4.6.2 and 4.6.3 of BS5837:2012. 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.
- 11.5 Where applicable, this assessment attempts to consider both direct and indirect implications. The assessment is based on perceived construction requirements and how a tree will likely interact with the development. The assessment appreciates issues including growth, hazard development, light blockage and other social concerns regarding the changing context, including its effect on tree amenity value.

## **12 Tree Retention and Loss**

- 12.1 The drawing "Finlay Park 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.
- 12.2 As noted within the survey data, the "red line" area supports a total of 8no. individually described trees and 2No. hedge alignments. These have been categorised as:
- No category "A" items
  - 1no, category "B" tree
  - 1no. category "C" trees and 2no. Hedges.
  - 6no. category "U" trees

- 12.3 Normally, all category "U" trees (6 in total across survey area) identified in the survey would be removed of good site dsafety and management grounds.
- 12.4 The proposed development does not require the loss of the site's category "B" and category "C" trees.
- 12.5 The proposed development does not require the loss of the site's category "C" hedges, though it is appreciated that localised "cutting back" may be required to provide for necessary clearances and a small punctuation of "Hedge 3" to allow for the creation of a surface water outfall.
- 12.6 Though not associated with the current phase of development, it is noted that localised foreshortening of "Hedge 3" may be required in the future to accommodate a future local access road
- 12.6 The tree loss breakdown for the proposed developemnt will be-
- 6 category "U" trees (100% of category "U" trees)
- 12.7 The tree retention breakdown for all none-categrpy "U" trees across the proposed developemnt will be-
- 1 category "B" tree
  - 1 category "C" tree
  - This equates to the retention of 100% of all none-category "U" trees.

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

- 13.1 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.
- 13.2 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.
- 13.3 This report provides a "Preliminary Arboricultural Method Statement" at "Appendix 1" to this report, as well as the associated "Tree Protection Plan" drawing "Finlay Park Tree Protection Plan".
- 13.4 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".
- 13.5 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.

## **14 Preliminary Management Recommendations**

- 14.1 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.
- 14.2 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 the suitability of a tree for retention may change over time.
- 14.3 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. A review will allow for the updating and amending of 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.

## **15 Bibliography**

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- 15.9 Woodland Trust (2021) Ash Dieback, <https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/tree-pests-and-diseases/key-tree-pests-and-diseases/ash-dieback/>



## **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, "Finlay Park 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 "Finlay Park 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 "Finlay Park 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 "Finlay Park 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 This survey was compiled in October of 2022. 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 tree assessment (Mattheck and Breloer 1994) 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 Several factors acted against the tree inspector, contriving to reduce the accuracy of the survey. Particularly, the survey have been completed during specific 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 generalised 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 U	Particularly poor quality, dangerous or diseased trees that offer no realistic sustainability
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
15	Wych Elm ( <i>Ulmus glabra</i> )	E/M	D	12.00	2.00	4.50	4.50	4.50	4.50	1	493	5.92	Completely dead, killed by Dutch Elm disease.		N/A	U
16	Wych Elm ( <i>Ulmus glabra</i> )	E/M	D	13.00	2.50	2.50	2.50	2.50	2.50	1	366	4.39	Completely dead. Remove.		N/A	U
17	Wych Elm ( <i>Ulmus glabra</i> )	M	D	11.00	3.00	3.00	3.00	3.00	3.00	1	398	4.77	Completely dead. Killed by Dutch Elm disease.		N/A	U
18	Wych Elm ( <i>Ulmus glabra</i> )	M	D	11.00	3.00	4.00	4.00	3.00	2.00	1	382	4.58	Completely dead, killed by Dutch Elm disease.		N/A	U
18b	Wych Elm ( <i>Ulmus glabra</i> )	M	D	11.00	3.00	3.00	3.00	3.00	2.00	1	382	4.58	Completely dead, killed by Dutch Elm disease.		N/A	U
18a	Ash ( <i>Fraxinus excelsior</i> )	E/M	G/F	12.00	2.00	5.00	3.50	2.50	3.00	1	344	4.13	Suppressed and slightly unbalanced to north. Supports extensive Ivy cover preventing detailed review though general vigour appears good.		M	B2
19	Beech ( <i>Fagus sylvatica</i> )	M	G/F	18.00	2.50	5.50	5.00	5.00	6.00	1	993	11.92	Large and aged specimen having suffered prior mechanical damage and supporting many limb-loss wounds. is subject to decay resulting from Ganoderma infection and has suffered widespread and substantial breakage in past. Tree offers minimal sustainability and will increase in hazard over time.	Retention would be context dependent.	S	C1-2
20	Beech ( <i>Fagus sylvatica</i> )	M	F/P	14.00	2.00	4.50	5.00	5.00	3.00	1	866	10.39	Suppressed and has suffered traumatic failure and loss of original crown apex. Higher crown stems are subject to extensive decay. Tree offers substantial potential as bat roost.	Review regarding retention context.	S	C2

No.	Species	Age	Con	Ht	CH	N	E	S	W	Stm	Dia	RPA	Structural Condition	PMR	Yrs	Cat
21	White Willow ( <i>Salix alba</i> )	M	G/F	12.00	3.50	10.00	9.00	9.00	8.00	1	844	10.12	A particularly large specimen. General vigour and vitality are good though much of crown is obscured preventing detailed review. Crown does support both deadwood and evidence of ongoing storm damage.	Cut Ivy and rereview.	L	B2
22	White Willow ( <i>Salix alba</i> )	S/M	F	16.00	4.00	3.00	3.00	2.00	1.00	1	274	3.29	Exists as a drawn-up whip. Would be unsuitable retention if isolated or exposed.	Cut Ivy and rereview.	M	C2
23	White Willow ( <i>Salix alba</i> )	E/M	F	17.00	4.00	4.50	3.00	3.00	2.50	1	347	4.16	Distorted with primary imbalance to west. Supports extensive Ivy cover.	Cut Ivy and rereview.	M	C2
24	Beech ( <i>Fagus sylvatica</i> )		G/F	15.00	2.00	5.50	5.00	4.50	4.00	1	516	6.19	A young and still vigorous specimen.	Cut Ivy and rereview after Ivy shedding.	L	B2
25	Beech Group ( <i>Fagus sylvatica</i> )	E/M	F	14.00	2.00	3.00	5.00	3.00	1.00	1	398	4.77	A multi-stemmed group affected by suppression and distortion having developed general imbalance to east. Trees are still vigorous and would offer notable retention potential.	Cut Ivy and rereview.	L	C2
26	Beech ( <i>Fagus sylvatica</i> )	S/M	F	12.00	0.00	4.00	3.00	3.00	4.00	1	430	5.16	A young specimen slightly distorted through suppression. General vigour is still good.		M	C2
27	Beech ( <i>Fagus sylvatica</i> )	M	G/F	20.00	2.50	6.00	5.00	5.00	5.00	1	875	10.50	Large and dominating specimen obscured by dense Ivy cover. General vigour and vitality are reasonable.	Cut Ivy and rereview.	L	B1-2
28	Beech ( <i>Fagus sylvatica</i> )	M	G/F	19.00	5.50	6.00	4.50	4.50	4.00	1	748	8.98	Supports minor imbalance to north. General vigour and vitality are good however much of principal stem is obscure by dense Ivy cover.	Cut Ivy and rereview.	L	B1-2
29	Beech ( <i>Fagus sylvatica</i> )	M	G/F	20.00	6.00	5.00	3.50	4.50	4.00	1	516	6.19	Tall and slender. General vigour and vitality appear good.	Cut Ivy and rereview.	L	B1-2

No.	Species	Age	Con	Ht	CH	N	E	S	W	Stm	Dia	RPA	Structural Condition	PMR	Yrs	Cat
30	Beech ( <i>Fagus sylvatica</i> )	M	G/F	18.00	3.50	4.50	5.00	5.00	4.50	1	688	8.25	Supports minor imbalance to south-east. General vigour and vitality appear good.	Cut Ivy and rereview.	L	B1-2
31	Ash ( <i>Fraxinus excelsior</i> )	E/M	P	9.00	4.00	5.00	4.00	2.50	4.00	1	401	4.81	Distorted and of reduced vigour possibly indicating Ash Dieback. A poor-quality specimen not worthy of retention.	Remove.	N/A	U
32	Ash ( <i>Fraxinus excelsior</i> )	E/M	F	12.00	4.00	4.50	3.00	2.50	3.00	1	407	4.89	Still vigorous but has undergone substantial disturbance during ditch/stream clearance works. Environmental change is likely to undermine health. Is of questionable sustainability.		S	C2
54	Ash ( <i>Fraxinus excelsior</i> )	E/M	F/P	8.00	3.00	5.00	4.00	4.00	3.00	1	462	5.54	Distorted with evidence of higher crown decline suggesting possible pathological issues.	Review regularly.	S	C2

## Tree Lines, Groups and Hedges

H2	Hedge 2 Hawthorn ( <i>Crataegus monogyna</i> ) Goat Willow ( <i>Salix caprea</i> ) Sycamore ( <i>Acer pseudoplatanus</i> ) Blackthorn ( <i>Prunus spinosa</i> ) Elder ( <i>Sambucus nigra</i> ) Bramble ( <i>Rubus fruticosus</i> ) Ivy ( <i>Hedera helix</i> )	M-S/M	F/P	3.00-9.00		Spread Contiguous		271	3.25	A large, variable and outgrown hedge exhibiting evidence of once having comprised Thorn based agricultural hedge. This material appears to arise from raised embankment, separated from northern site by what appears to be a ditch, the majority of which supports standing water. This is likely to have been a physiological barrier to natural root development. This hedge is now highly variable along its length, but supports some significant elements, particularly about the centre and west of the alignment where suppression by larger trees has been avoided.	L	C2
H3	Hedge 3 Hawthorn ( <i>Crataegus monogyna</i> ) Bramble ( <i>Rubus fruticosus</i> ) Dog Rose ( <i>Rosa canina</i> ) Elder ( <i>Sambucus nigra</i> ) Ivy ( <i>Hedera helix</i> )	M-S/M	P	2.00-6.00	0.00	Spread Contiguous		271	3.25	A typically poor and intermittent hedge having been harshly cut to 2.00 m in recent past. Hedge is intermittent and broken comprising a disbursed alignment of Hawthorn with further continuity being provided by low level Bramble thicket. Substantive retention of hedge in this instance would require extensive replacement planting. Hedge is associated with this deep descending slope to the south of a relatively deep, broad and water bearing ditch.	M	C2
TL1	Tree Line 1 Grey Poplar ( <i>Populus canescens</i> )	S/M	F	6.00	4.00	Spread 5.00m	1	207	2.48	A close-knit row of 9 individual trees suggesting in the deliberate planting. The alignment is dominated by for larger trees with 5 smaller sapling specimens. Specimens remain vigorous and offer immense potential for continued growth over time.	M	C2

TL2	Tree Line 2 Sycamore ( <i>Acer pseudoplatanus</i> )	S/M	F/P	6.00-11.00	0.00-1.50	Spread Contiguous	1	271	3.25	A close-knit group of trees apparently arising naturally from defunct fence line at footing of now derelict building. Trees cannot be regarded as sustainable at this location. Most exist as sucker material arising from previously cut stumps. Unsuitable for retention. Remove.	N/A	U
BB2	Boundary Belt 2 Ash ( <i>Fraxinus excelsior</i> ) Hawthorn ( <i>Crataegus monogyna</i> ) Bramble ( <i>Rubus fruticosus</i> ) Ivy ( <i>Hedera helix</i> )	E/M-M	F/P	4.00-12.00	0.00	Spread Contiguous	m/s	430	5.16	Evidence enough exists to suggest there once having been a continuous thorn hedge along the eastern edge of a substantial ditch. At this time, the hedge and particularly the Hawthorne component is vestigial, suppressed and intermittent, entirely missing for substantial lengths of the alignment. Notwithstanding this, continuity vegetation is provided for in some instances by lower-level Bramble thicket with Ivy. The hedge alignment supports a substantial emergent ash population. These trees have not been planted but nonetheless seem to be of similar ages. Their quality is highly variable with many poor specimen having suffered prior mechanical damage with other specimens apparently being in decline raising concerns regarding Chalara Canker attack. All trees and hedging material are physiologically restricted by the substantial ditch to the west with no root extent beyond the ditch base. The potential to rein retain this alignment will be heavily dependent upon replacement planting and possible replacement of the Ash that in light of Chalara Canker are likely to offer limited sustainability.	M	C2