Arboricultural Assessment Report

Profile Park NE

November 2022

TREESPACE

Trees • Woodland • Urban Forestry

DOCUMENT CONTROL SHEET

PROJECT NAME: Arboricultural Assessment – *an assessment of trees in relation to development.*

PROJECT REFERENCE: Profile Park NE

PROJECT LOCATION: Kilcarbery, Profile Park, Co. Dublin

PREPARED FOR: Ramboll

PREPARED BY: Conor O Callaghan

POSITION HELD: Arborist

WORK DESCRIPTION: Field Assessor/Author

QUALIFICATIONS: MSc Arboriculture & Urban Forestry, BSc Forestry Management

CONTACT: info@treespace.ie

Contents

1. INTRODUCTION

1.1. Instructions and Brief

1.1.1. Tree-space has been instructed to undertake a tree survey and arboricultural impact assessment for a proposed new development. The proposed development site is located on semi-improved grassland south of the Grange Castle Business Park. The site is within the South Dublin County Council administrative area.

1.1.2. This report addresses the potential impacts of the proposed development on the existing tree population. The field assessment was completed between the 9th and 10th of August 2022. The following documents were provided to Tree-space to inform the tree survey and report:

Table 1: List of drawings to inform the tree survey and report

Document Title	Document/Drawing Number	Originator
Extent of the tree survey	Aerial image/no number	Ramboll
Topographical Survey	MGS46847_T_2d_ITM_Rev0-00	MGS
Proposed Development Layout	No reference	Ramboll

1.1.3. The report should be read in conjunction with the following Tree-space plans:

- Tree Constraints Plans: TS_TCP_31_8_22
- Tree Assessment Plans: TS_TAP_31_8_22
- Tree Removal & Protection Plans: TS_TPP_3_9_22

1.2. Aims and Approach

1.2.1. The purpose of this assessment is to quantify and categorise the arboricultural features on the site and assess the potential constraints to development. Trees are a material consideration for local authorities and tree owners. Whether they have statutory protection or not the potential impacts of construction must be considered. Construction activities often exert pressures on pre-existing trees and in some cases trees that have taken decades to mature can be damaged irreparably. The assessment and implementation of protection measures is therefore critical to mitigate against any potential negative impacts.

1.2.2. The arboricultural impact assessment was carried out in accordance with the British Standard *BS 5837:2012 Trees in relation to design, demolition, and construction – Recommendations*[1]. The British Standard sets out the principles and procedures to be

[1] The British Standards Institution (2012) *Trees in relation to design, demolition, and construction – Recommendations.* BSI Standards Limited.

applied to achieve a harmonious and sustainable relationship between trees and structures. The assessment process undertaken for this report is described in table two below.

Table 2: Arboricultural Impact Assessment Process

TASK	DESCRIPTION
Topographical survey	Record the position of all trees within the site with a stem diameter of 75mm or more, measured at 1.5m above highest adjacent ground level.
Tree survey	Collect relevant information on all trees included in the topographical survey, as well as any that might have been missed. The parameters of the tree survey are set out in BS5837:2012 section 4.4 and are described in more detail in Appendix 2 of this report.
Tree categorization	Identify the quality and value of the existing tree population. The categorization method set out in table 1, BS5837:2012 allows informed decisions to be made concerning which trees should be removed or retained in the event of a development occurring. Category A trees are of a high quality, category B trees are of moderate quality, and category C trees are of a low quality. Category U trees are unsuitable for retention. The subcategories 1, 2 and 3 are intended to reflect arboricultural and landscape qualities, and cultural values, respectively. The tree quality assessment table is included in appendix 2 of this report.
Impact assessment	Identify the requirements for the successful retention of the retained trees and detail the measures necessary for protection during the development process. Root protection areas (RPA's) are calculated in accordance with section 4.6, BS5837:2012. The RPA is the minimum area around a tree that needs to remain undisturbed to maintain the tree's viability. The RPAs of each categorised tree will be highlighted with magenta and plotted on relevant scaled drawings.
Tree protection plan	The tree protection plan indicates the precise location of the protective barriers to be erected to form a construction exclusion zone around the retained trees. The plan will be superimposed on the layout plan, based on the topographical survey.
Arboricultural method statement	The arboricultural method statement (AMS) sets out the measures required for the successful protection of the retained trees during the construction phase. The AMS will address some or all of the following: Pre-development tree works, site

TASK	DESCRIPTION
	supervision, protective fencing, ground protection, boundary treatments, services and drainage, and monitoring.

1.3. The Limitations of the Report

1.3.1. Only those trees specified in the scope of work were assessed. The observations that were made are limited to the requirements of planning and development. The survey is not a tree risk assessment.

1.3.2. The trees were visually assessed from ground level only. No climbing inspections were carried out. No invasive or other detailed internal decay detection devices were used.

1.3.3. The conclusions relate to the conditions found at the time of survey. Trees are living organisms that are subject to the stresses of climatic extremes, decay fungi and injurious diseases. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the trees in question may not arise in the future.

1.3.4. Historic tree data from another tree survey report undertaken in 2021 has been included in this report. The tree reference numbers are: T0781 - T0791, H1, T0826 – T0837, H6, H7 & T0002. No liability of any kind is accepted for any omissions or inaccuracies in the tree survey information for the trees listed above.

2. THE DEVELOPMENT

2.1. Description of the Development

2.1.1. Construction of 1 no. data hall building comprising of data hall rooms, mechanical and electrical galleries, ancillary office and storage rooms, toilets and shower and changing facilities.

2.1.2. External plant and emergency generators located South of the 1 no. data hall building.

2.1.3. The proposed development includes the provision of a: Sustainable Urban Drainage System.

2.2. Spatial Scope

2.2.1. The tree survey targeted the trees established within the site extents and included on the topographical survey. The tree numbering begins on T1731 in the northeast corner of the site close to the entrance gate to Profile Park. The tree numbering continues in an anti-clockwise direction around the perimeter of the site finishing on T1774, outside the neighbouring dwelling house. Additionally, trees on adjacent lands to the

south and west of the main development site are referenced in the Tree-space tree survey schedule and plans. However, they were not included in the field assessment for this report.

Figure 1: *Aerial image of the site and its immediate surroundings. The approximate boundary of the site is outlined in red. The entrance gate to Profile Park is located next to the roundabout on the R134. The existing dwelling house is hidden beneath the tree canopy in the northern portion of the site. The Baldonnel stream is orientated in an east-west direction and is hidden beneath the tree canopy along the southern boundary of the site. Image* (Google Earth, 2021).

3. THE TREES

3.1. General Description of the Trees

3.1.1. In total 44 individual trees and 2 tree groups were included in the field assessment for this report. The total number of trees including the trees from the 2021 tree survey, and all of the individuals within the tree groups is 130. There is approximately 260 m of hedgerow within or in proximity to the site extents. Tree group 2 (TG2) is a linear feature containing 53 trees forming a natural boundary between the existing dwelling house, and the central green field site. The three most common species on the site are ash (*Fraxinus excelsior*), lime (*Tilia*), and horse chestnut (*Aesculus hippocastanum*) accounting for approximately 84% of the surveyed trees. Western Balsam-poplar (*Populus trichocarpa*) is also common as it comprises a large portion of tree group 2.

The other most common species on the site were, monterey cypress (*Cupressus macrocarpa*), and hawthorn (*Crataegus monogyna*).

3.1.2. Thirty three percent of the surveyed trees were classified as category A. Category A trees are of a high quality with a remaining life expectancy of at least 40 years. The limes established on the embankment running parallel to the access road to Profile Park were all classified as category A. The lime trees are in the semi-mature life-stage and generally have good structural condition. The leaf area and vigour were classified as normal for the life-stage. The horse-chestnut and ash trees are established in the riparian zone along the Baldonnel stream. The horse-chestnuts have leaf blotch (*Guignardia aesculi*) which is a leaf killing fungus. The condition is unsightly, but it is not known to kill the trees. The trees along the stream were classified as category B or C based on their physiological or structural defects. The atlas cedar T1773 (*Cedrus atlantica*) is established at the entrance to the dwelling house. The tree is a good example of its species and was classified as A1.

3.1.3. Tree group 2 is a mature tree line established along the western boundary of the site. The tree line is a mix of poplars and Monterey cypress. The trees within the group generally have a moderate structural condition and a normal physiological condition for their life-stage.

4. ARBORICULTURAL IMPACT ASSESSMENT

4.1. Potential Tree Loss to Facilitate the Proposed Development

4.1.1. Table 3 below describes the trees and hedges that would be directly affected in the event of a development occurring. The tree number, the tree species, the BS5837 retention category and a short description of the impact are included.

Table 3: *Description of the potential impacts of the proposed development on the surveyed tree population.*

Tree No	Tree Species	CAT *BS5837*	Description of Impact
T1752-T1753 (3 x trees)	Ash Rowan Horse chestnut	B2	Three trees in conflict with the proposed culvert and road over the Baldonnel stream.
T1754-T1756 (3 x trees	Horse chestnut	C2	Three trees in conflict with the proposed culvert and road over the Baldonnel stream.

Tree No	Tree Species	CAT *BS5837*	Description of Impact
T1757	Ash	B2	One tree in conflict with the proposed culvert and road over the Baldonnel stream.
T0786-T0788 (3 x trees	Ash Goat willow	C1	Three trees in direct conflict with the proposed access road and southern attenuation pond.
H1	Hawthorn, Bramble, Dogrose, Goat Willow, Elm, Ash.	C1	Approximately 22 m (50%) of hedge 1 is in direct conflict with the proposed access road and southern attenuation pond.
T0837	Ash	C1	Partial conflict with proposed access road. Successful retention is highly unlikely.
T0002	Ash	C1	Direct conflict with proposed access road and turning area.
T0836	Ash	B1	Partial conflict with proposed access road and turning area. Successful retention is highly unlikely.
H7	Hawthorn, elder, elm, bramble, dogrose, ash.	C2	Approximately 140 m (100%) of hedge 7 is in direct conflict with the western attenuation pond, the proposed access road, and turning area.
T1769-T1771 (3 x trees)	Monterey Cypress	B2	Three trees in direct conflict with the proposed data hall layout.
TG1 (9 x trees)	Monterey Cypress, Western balsam popular, Sycamore, Lawson cypress, Apple.	C2	Nine trees in direct conflict with the proposed data hall layout.
T1774	Ash	B2	Direct conflict with the western attenuation pond and the proposed access road.
TG2 (45 x trees)	Monterey cypress, Western balsam popular, Silver birch, Copper beech	B2	Forty-five trees in direct conflict with the proposed data hall layout.
T0827	Ash	U	Not suitable for retention. Conflict with the proposed outfall from the western attenuation pond.

Tree No	Tree Species	CAT *BS5837*	Description of Impact
Summary of Direct Impacts			
			· **In total 72 trees or 55% of the total surveyed tree population will need to be removed to facilitate the construction of the proposed development.**
			· **In total 162 m of hedgerow or 62% of the total surveyed hedges will need to be removed to facilitate the construction of the proposed development.**
			· **54 category B trees (77% of the total CAT B), 17 category C (48% of the total CAT C) and 1 category U (100% category U) will need to be removed to facilitate the construction of the proposed development.**

4.2. Potential Tree Pruning Works

4.2.1. The lime trees numbered T1731 to T1748 are established adjacent to an existing footpath. The lower branches of the trees overhang the footpath and there is currently insufficient headroom for pedestrians and cyclists. It is recommended that the crowns are raised to improve the headroom to approximately 2.5 m above the pavement level.

4.3. Construction Activities & The Retained Trees

4.3.1. In total 58 individual trees and approximately 98 m of hedgerow will be retained within the perimeter of the development site. All of the retained vegetation has the potential to be negatively impacted upon during the construction phase. To mitigate against any potential negative impacts the installation of tree protection fencing around the retained trees and hedges has been recommended. An image of the default fencing specification is provided in the arboricultural method statement in Appendix 1 of this report. The alignment of the tree protection fencing should resemble what is detailed in the Tree Removal & Protection drawings.

4.3.2. The root protection areas for the recorded tree population have been highlighted with magenta on the Tree Removal & Protection Plans. The root protection area (RPA) is the area around the tree which needs to remain undisturbed to maintain the trees viability. The tree protection fencing should be in place before the construction activities commence. The onsite storage of materials and all plant and machinery movements should be directed outside of the RPAs. The main contractor appointed to construct the development will have a responsibility to ensure the tree protection measures are installed correctly, and none of the retained trees are negatively impacted upon.

4.3.3. There are 10 trees highlighted for retention next to the entrance to the existing dwelling house. Eight of these trees are the remainder of tree group 2 and two (T1772 & T1773) are established on the left and right of the driveway. Tree number 1773 is a

category A1 and a high-quality landscape feature. The existing wall, driveway and fence line intersect the RPAs of the retained trees. The area within the RPAs should remain undisturbed as much as possible. If the existing built features within the RPAs need to be removed ideally it should be carried out manually using hand tools e.g., pneumatic breaker, sledgehammers, and wheelbarrow. If it is necessary to use machinery it should be light weight, 3 tonnes or less. The machinery should be positioned outside of the RPAs or on existing hard surfaces. Long reach machinery is preferred. The machinery should not encroach onto existing soft surfaces e.g., grass, bare soil within the RPA. Any scraping or excavations of the surfaces within the RPAs should not exceed 50 mm in depth. Further guidance from a consulting arborist may be required if the existing surfaces within the RPAs are to be replaced.

4.4. Tree Management Post Development

4.4.1. There are a number of mature trees highlighted for retention within the extent of the development site. New built structures e.g., access roads, buildings, data halls are to be introduced in proximity to the retained trees. Prior to public usage of the site an arboricultural assessment of the retained trees is recommended. The eight retained trees from tree group 2 (TG2) are of particular interest. The removal of their companion trees to the south and the dwelling house to the west will result in an altered exposure to the prevailing wind currents. Retained trees can become much more vulnerable to windthrow after surrounding trees and structures have been removed. The crowns of the retained trees may need to be reduced in size to reduce the wind loading effect and the risk of failure.

4.5. Replacement Tree Planting

4.5.1. The landscape proposals will need to consider the tree and hedgerow loss on the site. Seventy-two trees and approximately 162 m of hedgerow will need to be removed. Appropriate compensation should consider establishing 120 - 150 new trees on the site. The riparian zone around the Baldonnel stream could be extended with a linear strip of woodland potentially creating a wildlife corridor. The line of lime trees could be extended to the south and west along Profile Park Road and Concorde Drive respectively. Some ash trees are highlighted for removal; however, the planting of ash trees is currently not recommended due to the spread of ash dieback (*Hymenoscyphus fraxineus).* Instead, the establishment of long-lived broadleaf species e.g., oak, beech, sweet chestnut, hornbeam should be considered for replanting. Adequate spacing between the trees is recommended to allow for future crown development.

4.5.2. Compensation measures for the loss of hedgerow will need to be integrated into the new development. There is an existing hedgerow on the northern boundary with New Nangor Road. The hedgerow could be extended along the roadside boundary. New hedges could also be considered around the perimeter of the attenuation ponds.

Other spaces for hedgerow establishment may become apparent at the detailed design stage of the project.

5. CONCLUSIONS

- The potential tree loss to facilitate the proposed development is significant, 55% of the surveyed tree population will need to be removed. However, all of the high-quality category A trees can be retained.
- There is a significant impact on the category B trees, predominately from tree group 2. The landscape proposal will need to include adequate replacement tree planting.
- Some hedgerow loss is necessary, the length of hedgerow being removed should be replaced.
- The contractor in charge of constructing the development will have a responsibility to ensure the tree protection measures are installed correctly and no further negative impacts occur.
- The arboricultural method statement in Appendix 1 of this report provides outline guidance on the following: pre-construction site briefing, pre-construction tree works, tree protection fencing, excavations within the RPAs, roots & root pruning, monitoring & compliance, and landscaping activities. Further construction stage arboricultural method statements may be required.

Appendix 1

Outline Arboricultural Method Statement

The following arboricultural method statement outlines the order of works and tree protection measures for the proposed Profile Park NE data hall development. The method statement should be read in conjunction with the Tree Removal & Protection Plans (TS_TPP_3_9_22).

Pre-Construction Site Briefing

- Prior to the construction phase of the development a briefing should be arranged between the principal contractor and the appointed consulting arborist. The objectives of the briefing will be to clarify the following:
    - Confirm the tree works to be undertaken.
    - Confirm the location of the tree protection fencing.
    - Review and raise awareness of sensitive areas on the site where mature trees and hedges are being retained.
    - Confirm the requirements for arboricultural monitoring for the duration of the construction phase.

Pre-Construction Tree Works

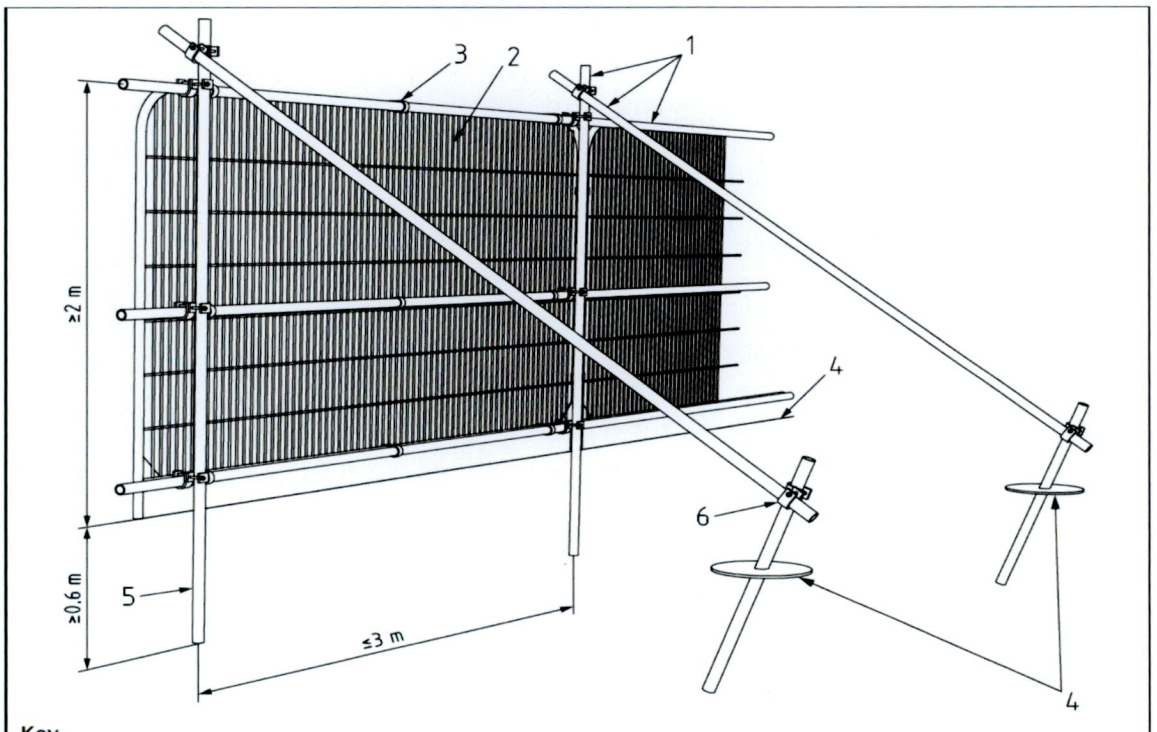
- The necessary tree works to facilitate the proposed development are described in the tree works schedule (appendix 4 of this report).
- The tree works schedule should be presented to the tree owner prior to any work being carried out. The tree owner must agree to the proposed works.
- All tree works will be carried out in accordance with the recommendations given in BS 3998 (2010) and current health & safety requirements.
- The planned removal of trees and vegetation should not negatively impact on any of the retained trees or their RPAs.
- Prior to the commencement of any tree works, the trees and their surroundings should be assessed for the presence of any seasonal nesting sites, potential roost features or protected species.
- **In accordance with Section 40 of the Wildlife Act 1976 (as amended 2000) the tree works, and removal of hedges and ivy should be scheduled outside of the nesting season (1st of March to 31st of August).**

Protective Fencing

- The tree protection fencing is designed to create a construction exclusion zone around the retained trees to protect the critical root mass from negative impacts.
- The alignment of the tree protection fencing largely follows the perimeter of the retained trees RPAs. Along the hedgerows the fencing should be set out 1 m from the outer edge of the canopy extents. The layout of the fencing should resemble what is detailed in the tree protection plans (TS_TPP_3_9_22).

- The tree protection fencing should be fit for purpose and well braced to resist impacts. The default fencing specification outlined in the British Standard is 2 m tall weld mesh panels. An image of the fencing configuration is provided below.
- Signs will be erected on the fences stating 'CONSTRUCTION EXCLUSION ZONE – NO ACCESS'.
- The main contractor will inform the client that the tree protection fencing, and signage is in place before construction activities commence.
- The tree protection fencing will remain in place for the duration of the construction phase and should not be removed without approval from the retained consulting arborist.

British Standard BS 5837: TREE PROTECTIVE FENCING



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Excavations within the Root Protection Areas (RPAs)

- Excavation work within the RPAs of retained trees should be avoided.
- Where excavation work of hard surfaces is necessary it should be carried out with hand tools e.g., pneumatic breaker, crowbar, pick, mattock, spade.

- Excavations of soft surfaces or sub-bases can be undertaken with air spades or smaller hand tools e.g., trowels.
- The area to be excavated should be clearly marked out on the ground.
- The spoil arising from the excavation should be positioned outside of the RPA.
- Avoid damaging the bark of any exposed roots.

Roots & Root Pruning

- Where tree roots are encountered after ground works begin it is recommended that rolls of hessian/jute are stored on site. The hessian can be used to cover any exposed roots and protect them from drying out and desiccation occurring.
- Where tree roots are encountered in the working areas and cannot be moved out of the construction profile root pruning may be required (see guidance point below). The roots should be target pruned with a sharp secateurs or handsaw. Once pruning is complete the cut ends should be recovered with topsoil or hessian.
- **General guidance:** if the exposed tree roots are less than 25 mm in diameter, they can be pruned by the on-site construction staff. If the tree roots are greater than 25 mm in diameter advice should be sought from the retained consulting arborist.

Monitoring & Compliance

- It is recommended that a qualified consulting arborist is assigned to the project for the duration of the construction phase.
- The responsibilities of the assigned arborist will include:
    - Monthly checks on the tree protective fencing.
    - Monitoring the health and vitality of the retained trees.
    - Monitoring soil disturbance and root disturbance in the working areas.
    - Carry out any potential root pruning operations if necessary.

Landscaping

- The proposed landscape activities e.g., planting works, tree planting, installation of new hard surfaces should be directed outside of the RPAs of any retained trees.
- The landscaping contractor should be briefed in detail by the retained consulting arborist to highlight the extent of the RPAs of any retained trees.
- No heavy mechanical cultivation such as ploughing or rotavation should occur within the RPAs of the retained trees.
- No soil level changes should occur within the RPA of any retained trees. Soil should never be raised and heaped against the tree trunks.
- Compaction of the soil within and around the RPAs of retained trees should be avoided.

Appendix 2

Tree Schedule Key

Tree/Group number	Reference number for individual trees or groups of trees, prefixed by T (Tree), TG (Tree Group), W (Woodland), H (Hedge) or S (Shrub) to indicate the type of feature
Tree Count	Number of trees of a particular species recorded within a group feature, with the default value of 1 for single trees.
Species	Scientific name followed by common name
Height (m)	Tree height to the nearest metre, measured with a Haglofs Clinometer or estimated.
Stem Count	Number of stems. Stem count indicates whether the tree is single-stemmed or multi-stemmed and informs the RPA calculation.
Stem Diameter	Stem diameter measured at 1.5m above ground level in accordance with Annex C of BS5837:2012.
Crown Spread	Distance from the stem position to the crown periphery in the four cardinal directions.
First Significant Branch Height (m) – Direction of growth	Distance between the ground and lowest significant branch and the direction of growth.
Canopy Clearance Height (m)	Distance between the ground and the lowest point of the crown periphery, estimated to the nearest half metre.
Life-stage	Young, Semi-mature, Early-mature, Mature, Late Mature, Ancient or Veteran
Physiological Condition	Good, Normal, Fair, Poor, Dead
Observations	General description of the tree or tree group, including basic features and morphology, structural and physiological condition, growing conditions and surroundings.
Recommendations	Management recommendations for tree works to address immediate unacceptable risks, or to facilitate development proposals.
Estimated Remaining Contribution (years)	Estimated number of years for which the tree will continue to make a positive contribution to the site, banded as <10yrs, 10-20yrs, 20-40yrs, 40+.
Retention Category	Quality and value category as defined in table 1 of BS5837:2012 (see following page for full description)
Retention Sub-category	One or more sub-categories as defined in table 1 of BS5837:2012 (see following page for full description)

RPR (m)	Radius of the RPA, in metres, when this is plotted as a circle around the tree stem
RPA (m^3)	Root protection area calculated from the stem diameter according to the formula in BS5837:2012. The RPA is the minimum area required to maintain tree viability.

Table 1 **Cascade chart for tree quality assessment**

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

Appendix 3

Tree/Tree Group number	No. of trees	**Species:** Common name	**Species:** Scientific Name	Stem count	Stem diameter (mm)	Height (m)	Crown spread (m)				First significant branch (FSB)- height	First significant branch (FSB) - direction of growth	Canopy clearance Ht (m)	Life stage: Y-SM-EM-M-LM-V-A	Physiological Condition: G-N-F-P-D	Observations	Preliminary management recommendations	Remaining contribution in years: <10, 10+, 20+, 40+	Retention category	RPR (M)	RPA(M^2)
							N	E	S	W											
T1731	1	Small-leaved Lime	Tilia cordata	1	260	8	3.5	3.5	3.5	3.5	2	S	2	Semi-mature	Normal	Good structural condition	none	40+	A2	3.1	31
T1732	1	Small-leaved Lime	Tilia cordata	1	230	8	3	3	3	3	2	S	1	Semi-mature	Normal	Good structural condition	none	40+	A2	2.8	24
T1733	1	Small-leaved Lime	Tilia cordata	1	260	8	3.5	3.5	3.5	3.5	2	E	2	Semi-mature	Normal	Good structural condition	none	40+	A2	3.1	31
T1734	1	Small-leaved Lime	Tilia cordata	1	300	8	3.5	3.5	3.5	3.5	2	SE	2	Semi-mature	Normal	Good structural condition. Brown spots on the leaves, minor physiological defect.	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.	40+	A2	3.6	41
T1735	1	Small-leaved Lime	Tilia cordata	1	280	8	3.5	3.5	3.5	3.5	2	S	1	Semi-mature	Normal	Good structural condition. Brown spots on the leaves, minor physiological defect.	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.	40+	A2	3.4	35
T1736	1	Small-leaved Lime	Tilia cordata	1	230	8	3	3	3	3	2	S	1	Semi-mature	Normal	Good structural condition	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.	40+	A2	2.8	24
T1737	1	Small-leaved Lime	Tilia cordata	1	250	8	3	3	3	3	2	W	1	Semi-mature	Normal	Good structural condition. Brown spots on the leaves, minor physiological defect.	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.	40+	A2	3	28
T1738	1	Small-leaved Lime	Tilia cordata	1	240	8	3.5	3	3	3	2	N	1	Semi-mature	Normal	Good structural condition. Brown spots on the leaves, minor physiological defect.	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.	40+	A2	2.9	26
T1739	1	Small-leaved Lime	Tilia cordata	1	240	8	3.5	3.5	3	3	2	E	1	Semi-mature	Normal	Good structural condition. Brown spots on the leaves, minor physiological defect.	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.	40+	A2	2.9	26
T1740	1	Small-leaved Lime	Tilia cordata	1	260	8	3.5	3.5	3	3	2	SE	1	Semi-mature	Normal	Good structural condition. Brown spots on the leaves, minor physiological defect.	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.	40+	A2	3.1	31
T1741	1	Large-leaved Lime	Tilia platyphyllos	1	240	8	4	4	3	3	2	E	1	Semi-mature	Normal	Good structural condition, some minor codominance, union appears good.	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.	40+	A2	2.9	26
T1742	1	Large-leaved Lime	Tilia platyphyllos	1	280	8	4.5	4.5	3	3	2	SE	1	Semi-mature	Normal	Good structural condition, some minor codominance, union appears good.	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.	40+	A2	3.4	35

Tree/Tree Group number	No. of trees	**Species:** Common name	**Species:** Scientific Name	Stem count	Stem diameter (mm)	Height (m)	Crown spread (m)				First significant branch (FSB)- height	First significant branch (FSB) - direction of growth	Canopy clearance Ht (m)	Life stage: Y-SM-EM-M-LM-V-A	Physiological Condition: G-N-F-P-D	Observations	Preliminary management recommendations	Remaining contribution in years: <10, 10+, 20+, 40+	Retention category	RPR (M)	RPA(M^2)
							N	E	S	W											
T1743	1	Large-leaved Lime	Tilia platyphyllos	1	300	8	4	4	3	3	2	SE	1	Semi-mature	Normal	Moderate structural condition, co-dominant stems 3 m from ground level, partial bark inclusion.	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.	40+	A2	3.6	41
T1744	1	Small-leaved Lime	Tilia cordata	1	200	8	2.5	2.5	2	2	2	S	1	Semi-mature	Normal	Good structural condition. Brown spots on the leaves, minor physiological defect.	none	40+	A2	2.4	18
T1745	1	Small-leaved Lime	Tilia cordata	1	220	8	4	4	3	3	2	S	1	Semi-mature	Normal	Good structural condition	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.	40+	A2	2.6	22
T1746	1	Small-leaved Lime	Tilia cordata	1	250	8	4	4	4	3	2	SE	0.5	Semi-mature	Normal	Good structural condition	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.	40+	A2	3	28
T1747	1	Small-leaved Lime	Tilia cordata	1	310	8	4.5	4.5	4	4	2	E	0.5	Semi-mature	Normal	Good structural condition	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.	40+	A2	3.7	43
T1748	1	Small-leaved Lime	Tilia cordata	1	250	8	3.5	3.5	3	3.5	2	NE	0.5	Semi-mature	Normal	Good structural condition	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.	40+	A2	3	28
T1749	1	Horse chestnut	Aesculus hippocastanum	1	500	16	6	6	4	3	2	N	0	Early-mature	Fair	Structural condition-moderate, co-dominant stems 1 m from ground level with bark inclusion, 3 x stems. Frequent leaf blotch on the foliage.	none	20+	B2	6	113
T1750	1	Ash	Fraxinus excelsior	1	280	16	3	3	4	3	3	SE	2	Early-mature	Fair	Structural condition-moderate, trunk is obscured by ivy, co-dominant stems 5 m from ground level. Some dieback in the crown.	none	20+	B2	3.4	35
T1751	1	Horse chestnut	Aesculus hippocastanum	1	440	11	5	3	3	3	3	N	0	Early-mature	Fair	Structural condition-moderate, co-dominant stems 1 m from ground level union is obscured by ivy, 3 x stems. Frequent leaf blotch on the foliage.	none	20+	B2	5.3	88
T1752	1	Ash	Fraxinus excelsior	2	410	16	5	3	5	4	4	S	4	Early-mature	Normal	Structural condition-moderate, co-dominant stems at ground level, union is obscured by ivy. Some minor deadwood in the crown, foliage generally appears normal.	none	20+	B2	4.9	76

Tree/Tree Group number	No. of trees	**Species:** Common name	**Species:** Scientific Name	Stem count	Stem diameter (mm)	Height (m)	Crown spread (m)				First significant branch (FSB)- height	First significant branch (FSB) - direction of growth	Canopy clearance Ht (m)	Life stage: Y-SM-EM-M-LM-V-A	Physiological Condition: G-N-F-P-D	Observations	Preliminary management recommendations	Remaining contribution in years: <10, 10+, 20+, 40+	Retention category	RPR (M)	RPA(M^2)
							N	E	S	W											
T1770	1	Monterey Cypress	Cupressus macrocarpa	1	880	24	7.5	3	6.5	3	1	N	0	Mature	Normal	Structural condition-fair, co-dominant stems, trunk and limbs are obscured by ivy, crown is overextended to the north. Crown is suppressed by neighbouring trees.	none	20+	B2	11	350
T1771	1	Monterey Cypress	Cupressus macrocarpa	1	1368	24	6	7	7	7	0.5	S	0	Mature	Normal	Structural condition-moderate, co-dominant stems, union is not visible, trunk is partially obscured by ivy.	none	20+	B2	16	846
TG1	9	Monterey Cypress (x4); Western balsam popular (x1); Sycamore (x1); lawson cypress (x2); apple (x1)	Cupressus, Populus, Acer, Malus	n/a	avg 400	20	see drawings				0		0	Early-mature	Normal	Moderate to low quality tree group. The apple tree on the northern edge of the group is fruiting.	none	10+	C2	4.8	###
TG2	53	Monterey cypress, Western balsam popular, silver birch, copper beech.	Cupressus, Populus, Betula, Fagus	n/a	avg 470	28	see drawings				0		0	Mature	Normal	Mature tree line. The individual trees are of a moderate to good quality.	none	20+	B2	7.2	###
T1772	1	Cherry spp	Cherry (Prunus spp)	1	300	12	5	3	5	4	2.5	W	2	Early-mature	Fair	Structural condition-moderate, co-dominant stems, union appears good. Leaf area is low for the life stage, crown is suppressed by neighbouring trees.	none	20+	B2	3.6	41
T1773	1	Atlas Cedar	Cedrus atlantica	1	490	16	6	4	5	5	2	N	2	Early-mature	Good	Structural condition-good.	none	40+	A1	5.9	109
T1774	1	Ash	Fraxinus excelsior	1	410	12	6	5	5	6	4	NW	2	Early-mature	Normal	Structural condition-moderate, co-dominant stems. Some minor dieback in the crown.	none	20+	B2	4.9	76
T0781	1	Limes	Limes (Tilia spp)	1	230	8	3.5	3.5	3.5	3.5	no info	no info	2.5	Semi-mature	Fair	Structural condition-fair	none	40+	A1	2.8	24
T0782	1	Limes	Limes (Tilia spp)	1	230	8	3.5	3.5	3.5	3.5	no info	no info	2.5	Semi-mature	Fair	Structural condition-fair	none	40+	A1	2.8	24
T0783	1	Limes	Limes (Tilia spp)	1	230	8	3.5	3.5	3.5	3.5	no info	no info	2.5	Semi-mature	Fair	Structural condition-fair	none	40+	A1	2.8	24
T0784	1	Limes	Limes (Tilia spp)	1	230	8	3.5	3.5	3.5	3.5	no info	no info	2.5	Semi-mature	Fair	Structural condition-fair	none	40+	A1	2.8	24
T0785	1	Limes	Limes (Tilia spp)	1	230	8	3.5	3.5	3.5	3.5	no info	no info	2.5	Semi-mature	Fair	Structural condition-fair	none	40+	A1	2.8	24
H1	n/a	Hawthorn; Bramble; Dogrose; Goat Willow; Elm; Ash.	#N/A	n/a	n/a	3	see drawings				no info	no info	0	Mature	Fair	Structural condition-fair	none	10+	C2	###	###

Tree/Tree Group number	No. of trees	**Species:** Common name	**Species:** Scientific Name	Stem count	Stem diameter (mm)	Height (m)	Crown spread (m)				First significant branch (FSB)- height	First significant branch (FSB) - direction of growth	Canopy clearance Ht (m)	Life stage: Y-SM-EM-M-LM-V-A	Physiological Condition: G-N-F-P-D	Observations	Preliminary management recommendations	Remaining contribution in years: <10, 10+, 20+, 40+	Retention category	RPR (M)	RPA(M^2)
							N	E	S	W											
T0786	1	Ash	Fraxinus excelsior	1	320	9	3	4	2	3	no info	no info	4	Early-mature	Fair	Structural condition-fair	none	10+	C1	3.8	46
T0787	1	Ash	Fraxinus excelsior	4	430	9	4	4	3	3	no info	no info	4	Early-mature	Fair	Structural condition-fair	none	10+	C1	5.2	84
T0788	1	Goat willow	Salix caprea	2	305	8	3	2	4	5	no info	no info	1.5	Early-mature	Fair	Structural condition-fair	none	10+	C1	3.7	42
T0789	1	Ash	Fraxinus excelsior	5	514	12	3	3	3	3	no info	no info	3.5	Early-mature	Fair	Structural condition-fair	none	10+	C1	6.2	119
T0790	1	Ash	Fraxinus excelsior	1	450	12	4	5	3	5	no info	no info	4	Mature	Fair	Structural condition-fair	none	10+	C1	5.4	92
T0791	1	Ash	Fraxinus excelsior	1	580	13	6	5	2	5	no info	no info	4	Mature	Fair	Structural condition-fair	none	10+	C1	7	152
H6	n/a	Hawthorn	Crataegus monogyna	n/a	n/a	1.5	see drawings				no info	no info	0	Early-mature	Fair	Structural condition-moderate	none	10+	C2	###	###
H7	n/a	Hawthorn, elder, elm, bramble, dogrose, ash.	#N/A	n/a	n/a	6	see drawings				no info	no info	0	Mature	Fair	Structural condition-fair	none	10+	C2	###	###
T0826	1	Ash	Fraxinus excelsior	3	662	12	5	4	4	4	no info	no info	3	Mature	Fair	Structural condition-fair	none	10+	C1	7.9	198
T0827	1	Ash	Fraxinus excelsior	3	493	13	4	2	4	4	no info	no info	3.5	Mature	Fair	Structural condition-fair	Remove	<10	U	5.9	110
T0828	1	Ash	Fraxinus excelsior	1	480	13	6	2	6	3	no info	no info	3.5	Mature	Fair	Structural condition-fair	none	10+	C1	5.8	104
T0829	1	Ash	Fraxinus excelsior	2	546	13	5	5	4	2	no info	no info	3.5	Mature	Fair	Structural condition-fair	none	10+	C1	6.6	135
T0830	1	Ash	Fraxinus excelsior	1	360	9	4	3	2	3	no info	no info	3.5	Mature	Fair	Structural condition-fair	none	10+	C1	4.3	59
T0831	1	Ash	Fraxinus excelsior	2	492	12	4	4	3	3	no info	no info	3.5	Mature	Fair	Structural condition-fair	none	10+	C1	5.9	109
T0832	1	Ash	Fraxinus excelsior	4	800	13	6	7	6	7	no info	no info	3.5	Mature	Fair	Structural condition-fair	none	10+	C1	9.6	289
T0833	1	Ash	Fraxinus excelsior	1	520	13	4	3	4	3	no info	no info	4	Mature	Fair	Structural condition-fair	none	10+	C1	6.2	122
T0834	1	Ash	Fraxinus excelsior	1	480	13	4	3	4	4	no info	no info	3	Mature	Fair	Structural condition-fair	none	10+	C1	5.8	104
T0835	1	Ash	Fraxinus excelsior	1	350	13	4	3	4	4	no info	no info	4	Early-mature	Fair	Structural condition-fair	none	10+	C1	4.2	55
T0836	1	Ash	Fraxinus excelsior	2	749	14	6	6	6	5	no info	no info	3.5	Mature	Fair	Structural condition-fair	none	20+	B1	9	254
T0002	1	Ash	Fraxinus excelsior	1	500	13	4	4	4	5	no info	no info	3.5	Mature	Fair	Structural condition-fair	none	10+	C1	6	113
T0837	1	Ash	Fraxinus excelsior	5	278	9	4	3	4	4	no info	no info	3	Early-mature	Fair	Structural condition-fair	none	10+	C1	3.3	35

Appendix 4

PROFILE PARK N/E TREE WORKS SCHEDULE - AUGUST 2022

- **In accordance with Section 40 of the Wildlife Act 1976 (as amended 2000) the tree works, and removal of ivy should be scheduled outside of the nesting season (1st of March to 31st of August).**
- **All tree works are to be carried out in accordance with the *British Standard BS 3998: 2010 Tree Work - Recommendations* and current Health and Safety requirements.**
- **The trees that need to be removed are marked with red hatched lines on the Tree Removal & Protection Plans.**
- **The tree works schedule should be presented to the tree owner in advance of any tree works being carried out.**
- **The removal of ivy should be carried out with handsaws (silky saws) to avoid bark and trunk damage.**

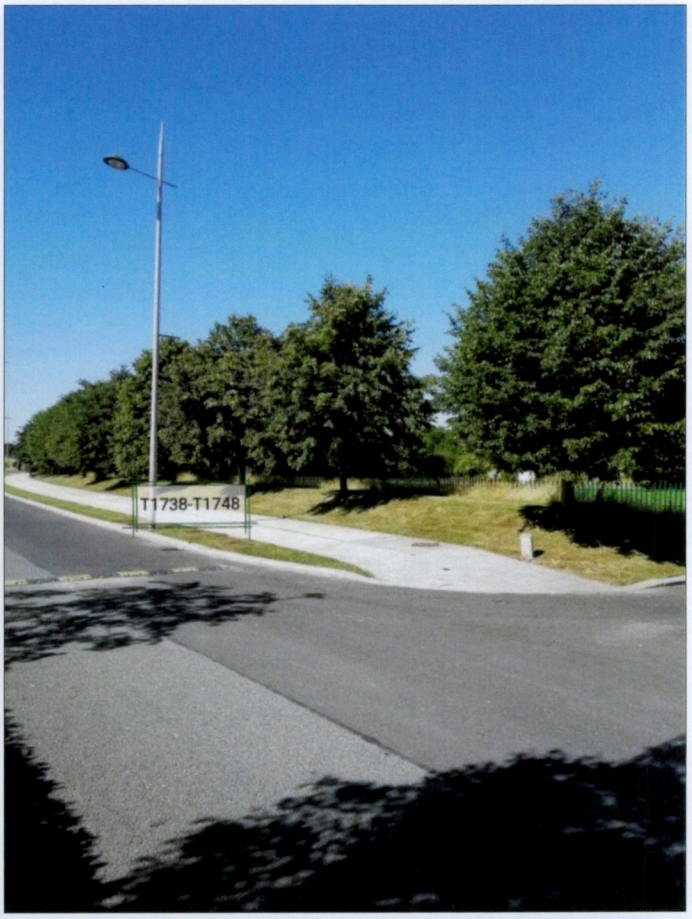
Tree No	Tree Species	CAT *BS5837*	Description of Tree works
Tree works to facilitate development			
T1752-T1753 (3 x trees)	Ash Rowan Horse chestnut	B2	Fell 3 x trees at ground level
T1754-T1756 (3 x trees	Horse chestnut	C2	Fell 3 x trees at ground level
T1757	Ash	B2	Fell 1 x tree at ground level
T0786-T0788 (3 x trees	Ash Goat willow	C1	Fell 3 x trees at ground level
H1	Hawthorn, Bramble, Dogrose, Goat Willow, Elm, Ash.	C1	Remove approximately 22 m of hedge 1.
T0837	Ash	C1	Fell 1 x tree at ground level
T0002	Ash	C1	Fell 1 x tree at ground level
T0836	Ash	B1	Fell 1 x tree at ground level
H7	Hawthorn, elder, elm, bramble, dogrose, ash.	C2	Remove approximately 140 m (100%) of hedge 7.

Tree No	Tree Species	CAT *BS5837*	Description of Tree works
T1769-T1771 (3 x trees)	Monterey Cypress	B2	Fell 3 x trees at ground level
TG1 (9 x trees)	Monterey Cypress, Western balsam popular, Sycamore, Lawson cypress, Apple.	C2	Fell 9 x trees
T1774	Ash	B2	Fell 1 x tree at ground level
TG2 (45 x trees)	Monterey cypress, Western balsam popular, Silver birch, Copper beech	B2	Fell 45 x trees at ground level
T0827	Ash	U	Fell 1 x tree at ground level
Recommended Tree Pruning Works			
T1734	Small-leaved Lime	A2	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.
T1735	Small-leaved Lime	A2	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.
T1736	Small-leaved Lime	A2	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.
T1737	Small-leaved Lime	A2	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.
T1738	Small-leaved Lime	A2	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.

Tree No	Tree Species	CAT *BS5837*	Description of Tree works
T1739	Small-leaved Lime	A2	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.
T1740	Small-leaved Lime	A2	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.
T1741	Large-leaved Lime	A2	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.
T1742	Large-leaved Lime	A2	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.
T1743	Large-leaved Lime	A2	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.
T1745	Small-leaved Lime	A2	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.
T1746	Small-leaved Lime	A2	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.
T1747	Small-leaved Lime	A2	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.
T1748	Small-leaved Lime	A2	Crown raise over pavement to improve headroom, 2.5 m head clearance over pavement.

Appendix 5

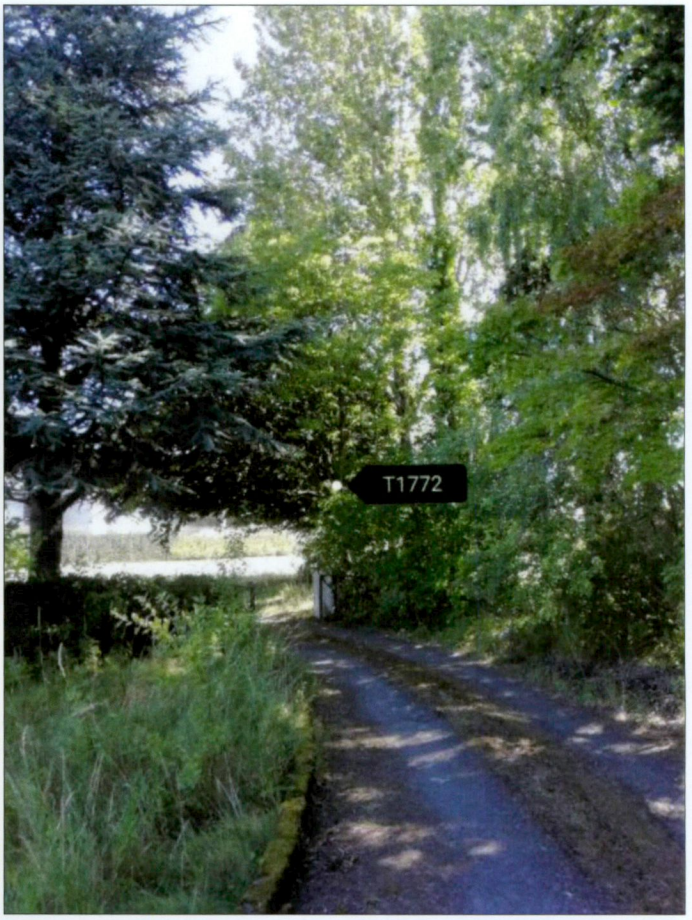

T1731-T1737


T1738-T1748


T1749-T1768


T1769-T1771


TG1


T1772


T1773


T1774


TG2