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**BS5837:2012 Trees in relation to design, demolition, and construction – Recommendations**

**Arboricultural Method Statement: Gordons Park, Kingswood, Dublin 22.**

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If this report has been released electronically the appendices referred to herein can be found in the annexed zip folder/s as .pdf files. If this report has been released in hard copy the appendices will be bound into the back of this report. Plans are annexed separately as A0, A1, A2 or A3 as appropriate.

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## Introduction

Griffin Landscape Architecture (*GLA thereafter*) received written instruction in June 2021 from Greenwalk Developments Ltd. to attend (*the former Clondalkin RFC grounds*) Gordons Park, Kingswood, Dublin 22. (site) to undertake an arboricultural survey to BS5837:2012 guidance to assess trees, hedges and major shrub groups growing on and within influencing distance of the site and to produce a schedule of trees, tree constraints plan, arboricultural impact assessment, arboricultural method statement and tree protection plan.

## Executive Summary

This report describes the extent and effect of the proposed development at Gordons Park on individual trees and groups of trees within and adjacent to the site.



**Fig 1: Google Maps Aerial view of the red line site application boundary**

Trees within the site were surveyed by Alan Linnane ( Certified Arborist) using a methodology guided by British Standard 5837:2012 'Trees in relation to design, demolition and construction – Recommendations' ("BS5837").

Subsequently, this report has been produced, balancing the layout of the proposed development against the competing needs of trees. This report comprises all of the requisite elements of an arboricultural implications assessment, method statement and supporting plans.

#### Checklist for Submission to Local Planning Authority

Tree survey	✓
Tree constraints plan	✓
Arboricultural impact assessment	✓
Arboricultural method statement	✓
Tree protection plan	✓

This report and its appendices precisely follow the strategy for arboricultural appraisal intended to provide local planning authorities with evidence that trees have been properly considered throughout the development process.

It is the conclusion of this report that the overall quality and longevity of the amenity contribution provided for by the trees and groups of trees within and adjacent to the site will not be adversely affected as a result of the local planning authority consenting to the proposed development.

It is considered that any issues raised in this report, or beyond the scope of it can be dealt with by planning conditions.

General Information

**Client:** Greenwalk Developments Ltd. – Rory Hickey & Simon Walsh

**Site:** Gordons Park, Kingswood, Dublin 22, Co. Dublin

**Brief proposal description:** Residential development and associated amenity green zones – housing

**Planning application reference:** SD21A/0327

**Table 1:** Documents referred to.

<u>Document:</u>	<u>Reference No:</u>
Measured Survey (Tree Constraints Plan)	D1 – TCP – Greenwalk Dev.
Proposed Layout Drawing	Landscape Masterplan ( provided by CSR)
British Standard 5837:2012	“BS 5837:2012”
Arboricultural Impact Assessment	Doc. 01 Arb. Impact Assessment
Tree Protection Plan	D3 – TPP – Greenwalk Dev.

Tree Survey:

An arboricultural survey to BS5837 of all trees within impacting distance of the site was undertaken by Alan Linnane ( Arborist) on 22<sup>nd</sup> June 2021. A total of 44 No individual trees and 116 linear meters of native hedgerow were surveyed. Details for each of the trees and hedgerow surveyed are provided in the Schedule of Trees (see Appendix I)

**Table 2:** Documents upon which this tree survey has been based

<u>Document &amp; Surveyor:</u>	<u>Document No:</u>
Measured Survey (by Murphy Geospatial)	MGL41890_T_ITM_Rev0_All

**Limitations:** The survey was made at ground level using visual observation only. Detailed examinations, such as climbing inspections and decay detection equipment were not employed, though may form part of the survey's management recommendations. Measurements were taken using specialist tapes, laser and GPS devices. Where this was not possible, measurements are estimated. Scope: Pre-development tree surveys make arboricultural management recommendations based exclusively upon the individual tree or group of trees condition relative to their present context (i.e. not in relation to the proposed development).

**Legal Status:** No statutory protection check has been performed. BS5837 does not draw any distinction between trees subject to statutory protection, such as a Tree Preservation Order (TPO), and those trees without. This is principally because a detailed planning consent overrides any TPO protection.

Consequently, we do not seek to offer any comparison between or infer any difference in the quality or importance of TPO trees and other trees.

\* For more information on the surveyed trees please see Griffin Landscape Architecture, Tree Survey Schedule (Appendix I), Tree Survey Report and Tree Constraints Plan.

### Arboricultural Impact Assessment

Table 3: Documents upon which this assessment has been based

<u>Document &amp; Originator:</u>	<u>Document No:</u>
Landscape Masterplan; CSR Landscape & Planning	21578-2-101 (Landscape Masterplan)

There are a number of issues that may need to be addressed in an arboricultural impact assessment between the trees and the proposed development, these are as follows:

- The effect and extent of the proposed development within the root protection areas (RPAs) of retained trees;
- The potential conflicts of the proposed development with canopies of retained trees; and
- The likelihood of any future remedial works to retained trees beyond which would have been scheduled as a part of usual management.

#### Impacts upon the RPAs of retained trees;

The implementation of the proposed development does not represent any new incursions into the RPAs or crowns of any retained trees, as seen on the Arboricultural Impact Assessment drawing number D2 - TIP. Tree tag numbers to be retained and protected during construction are as follows:

1258, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1229, 1234, 1235.

**Trees to be removed:**

The implementation of this development requires the removal of 32 no trees and the removal of 16 linear meters of native hedgerow. Tree tag number of trees to be removed are as follows:

1253, 1254, 1255, 1255A, 1255B, 1256, 1257, 1258A, 1227, 1230, 1231, 1232, 1233A, 1233, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1249A, 1250, 1251, 1252.

**Conclusion**

The proposed construction works of the new residential development will impact on the current tree stock of the site area noting the removal of 32 trees. It must be noted at a large proportion of the tree stock for removal are leylandii which do not hold aesthetic or ecological value, and Ash which are all suffering from ‘ash die back’ disease. As such I see no arboricultural or landscape reasons why this scheme should not proceed subject to the appropriate conditions. In addition and upon review of the landscape masterplan it is clear to see that on completion of the proposed works there will be a net tree canopy cover for the site area due to the significant additional proposed new trees.

**Arboricultural Method Statement**

The purpose of this method statement is to demonstrate how any aspect of the development that has potential to result in loss or damage to a tree may be implemented and provide an adequate level of protection for those trees that are to be retained during the proposed works.

Details of key site personnel, including site / project manager will be submitted to the Council’s Parks Department prior to the commencement of site works. This method statement is to be approved and agreed to in writing by all key personnel prior to the commencement of site works. No site personnel are to be present and no demolition, site clearance, building work or delivery of materials is to occur until the protective measures are in accordance with this method statement and the Tree Protection Plan drawing number ‘D3 - TPP – Greenwalk Dev’

Protective measures should be in accordance with this method statement and the Tree Protection Plan; drawing number ‘D3 - TPP – Greenwalk Dev’ will remain unaltered and in situ, unless otherwise specified, for the entire duration of the construction.

Table 4: Documents upon which this assessment has been based

<u>Document &amp; Originator:</u>	<u>Document No:</u>
Landscape Masterplan; CSR Landscape & Planning	21578-2-101 (Landscape Masterplan)
Measured Survey (by Murphy Geospatial)	MGL41890_T_ITM_Rev0_All

## Protected Species (general informative for tree works)

Irish fauna enjoys a level of statutory protection. Undertaking tree work can impact upon some species directly. Bats and nesting birds should be considered when undertaking tree works. The below information is not intended to be exhaustive but gives a brief overview of the protection afforded to these two groups of animals.

### ***Conservation Status of Irish Bats***

The consensus in Ireland and Europe is that virtually all bat species are declining and vulnerable. Our understanding of population status is poor as there is very little historical data for most bat species. Certain species, such as the horseshoe bats, are better understood and have well documented contractions in range and population size.

Given this general picture of decline the Irish Government within the Irish / EU Biodiversity Action Plan has designated five species of bats as priority species (greater and lesser horseshoe bats, barbastelle, Bechstein's and pipistrelle). These plans provide an action pathway whereby the maintenance and restoration of the former population's levels are investigated.

### ***Legal Status of Irish Bats***

Given the above position all Irish bats as well as their breeding sites and resting places enjoy national and international protection. All bat species in the Ireland are fully protected under the Annex IV (and some on Annex II) of the EC Habitats Directive giving further, European protection.

Taken together the act and Conservation of Habitats and Species Regulations 2012 (as amended)\* make it an offence to; intentionally or deliberately kill, injure or capture (take) bats;

- Deliberately disturb bats (whether in a roost or not);
- Damage, destroy or obstruct access to bat roosts;
- Possess or transport a bat or any part of a bat, unless acquired legally;
- Sell, barter or exchange bats, or parts of bats

The legislation although not strictly affording protection to foraging grounds does protect roost sites. Bat roosts are protected at all times of the year whether or not bats are present. Any disturbance of a roost due to development must be licensed. The regulations that delivered by Irelands commitments to the Habitats Directive.

### ***Breeding birds***

All nesting birds are protected under the Wildlife and Countryside Act 1976 (including future amendments), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs.

Furthermore, a number of birds enjoy further protection under that Act and are listed on Schedule 1 of the Act. These further protected birds are also protected from disturbance and it may be necessary to operate "no-go" buffer zones around such nests – typically out to 100m. Planning policy guidance on the



treatment of species identified as priorities under the biodiversity action programme suggests that local authorities should take measures to protect the habitats of these species from further decline through policies in local development documents and should ensure that they are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations. The conservation of these species should be promoted through the incorporation of beneficial biodiversity designs within developments.

Further landowners and public bodies have an obligation under Section 40 of the Wildlife Acts on the destruction of hedges and vegetation in the month of August.

Section 40 of the Wildlife Act 1976, as amended by Section 46 of the Wildlife (Amendment) Act 2000, restricts the cutting, grubbing, burning or destruction by other means of vegetation growing on uncultivated land or in hedges or ditches during the nesting and breeding season for birds and wildlife, from 1 March to 31 August. These restrictions apply not only to private land-users but also to local authorities, public bodies and to contractors.

There are limited exemptions to the above restrictions which apply from March to August and include

- The destruction, in the ordinary course of agriculture or forestry of any vegetation growing on or in any hedge or ditch;
- The cutting or destruction of vegetation executed for public health and safety reasons by a statutory body including a local authority;
- The clearance of vegetation carried out in the course of fisheries development works undertaken by Inland Fisheries Ireland.

### Site Management

The site manager will be responsible for briefing and inducting all personnel who will be working on any stage of this development and especially those who will be working within or adjacent to the canopies or RPAs of retained trees; and will make them aware of, and provide a copy of this method statement and tree protection plan drawing number 'D3 - TPP – Greenwalk Dev'; this is to include but not exclusively the movement and or operation of plant, excavations, unloading deliveries, mixing and or pouring of cement and concrete.

The site manager will be responsible for the day to day running and protection of all retained trees and for liaising with the project arborist about any tree related matters and prior to any works that may or will affect the RPAs or canopies of retained trees; this is to include but not exclusively the movement and or operation of plant, excavations, unloading deliveries, mixing, pouring and storage of all caustic materials that may cause harm to retained trees.

Any incidents of damage to retained trees or of tree protection measures will be documented by the site manager who will then report these incidents to the project arboriculturist immediately and make sure that works within this area cease until the project arborist has had an opportunity to inspect the

damage and where appropriate, agree a mitigation plan with the local planning authority tree officer and / or Parks Department.

The site manager may designate another person to take charge of briefing and inducting process of new site personnel or visitors in his absence. If the site manager is replaced or is absent from site for more than three consecutive working days, the project arborist will be informed, and a pre-start meeting will be held with the new or acting site manager. It is the responsibility of the site manager to ensure that the planning conditions attached to the planning consent are adhered to at all times and that a monitoring regime and supervision of any works within or adjacent to the RPAs are adopted.

If at any time pruning works are required other than those previously approved, permission must be sought from the local Parks Department and once permission is granted, they are to be carried out by a suitably qualified person in accordance with BS3998:2010 Tree work – Recommendations. All tree works are to be specified and supervised by the consulting Arborist.

### Prohibition

- Mechanical digging or scraping is not permitted within a defined root protection area or within areas cordoned off by protective barrier fencing.
- No access will be permitted within the protected areas;
- No materials, equipment or debris will be stored within any of the fenced areas, or against the fencing;
- Fires are not permitted within 10m of any vegetation.
- Leaning objects against or attaching of objects to a tree is not permitted.
- Machinery, plant and vehicles are not permitted to be washed down within 10m of vegetation.
- Chemicals and materials are not to be transported, stored, used or mixed within a root protection area or within areas cordoned off by protective barrier fencing.
- Cement silos, mixing site to be situated within a bunded area to prevent spillage/leaking of chemicals harmful to trees. These areas are to be sited well clear of protected trees.
- Refueling of plant or machinery is prohibited within 10m of the construction exclusion zones.
- It is essential that allowance should be made for the slope of the ground so that damaging materials such as concrete washings, mortar or diesel oil cannot run towards trees.
- Where machinery is to be used within 5m of retained tree canopies a banks man will be required at all times whilst setting up, moving or operating within this distance of retained trees canopies.
- Storage of all caustic material and chemicals are to be situated well clear of protected areas and preferably on lower ground if slopes are present, or to be situated within a bonded area to prevent any spills or leaks entering the ground.

### Sequencing of works

A logical sequence of events is to be observed and shall be phased as follows in the most practical and site appropriate manner.

- Stage 1: Pre-commencement site meeting
- Stage 2: Installation of protective measures in accordance with the approved tree protection plan/s
- Stage 3: Site set up and any proposed tree / hedgerow pruning works as specified by the arborist.
- Stage 4: Undertake and complete construction works
- Stage 5: Undertake external landscaping works outside of the construction exclusion zones
- Stage 6: Removal of all machinery and materials form site
- Stage 7: Dismantle and removal of protective measures
- Stage 8: Undertake external landscaping works within the construction exclusion zones
- Stage 9: Sign off from project arboriculturist
- 

### Protective Measures

Protective measures are to be installed immediately following the completion of the tree works and are to be sited and aligned in accordance with the tree protection plan ('D3 - TPP – Greenwalk Dev') prior to the commencement of any works or the introduction of any machinery or material to site.

Upon installation of the protective measures around the retained trees the project arboriculturist will visit the site to inspect and document the position and specifications of the protective measures.

In the event that the protective measures and their positions do not comply with this arboricultural method statement document number GLA Arb Method Statement (15.12.2022) and tree protection plan drawing number 'D3 - TPP – Greenwalk Dev', the project arboriculturist shall inform the client and fencing contractor so adjustments can be made.

When the protective measures comply with document number GLA Arb Method Statement (15.12.2022) and tree protection plan drawing number 'D3 - TPP – Greenwalk Dev', the project arboriculturist will sign off the protective measures in writing to the client and will send a copy to the fencing contractor, site agent and local authority tree officer.

If the protective measures become damaged or there is any accident or emergencies involving trees, these areas are to be cordoned off immediately with high visibility plastic mesh fencing. The site agent is to photograph and document the damage and inform the project arboriculturist immediately after the incident and all work within in this area is to cease until the project arboriculturist has made a visit to the site. Any and all damaged sections of protective measures shall be replaced within 48 hours of the initial incident.

The protected area is sacrosanct and will not be invaded by the storage of materials, mixing of concrete or other products, accessed by machinery, equipment or pedestrians or in any other way disturbed by construction activity.

The protective measures will remain in place until the completion of stage 6 (*see Sequencing of Works*), there after they will be carefully dismantled only with the agreement of the project arboriculturist and or the local authority tree officer.

The existing site boundary measures are to be retained for the duration of the development. If for any reason the existing boundary measures are not to be used protective barrier fencing is to be installed along the line of the boundaries and is only to be removed upon the written permission of the project arboriculturist or local Parks Department upon the completion of the development or immediately prior to the installation of the permanent boundary measures.

Existing hard surfacing on driveway is to act as ground protection. Where it is decided that this is not a viable option, removal of the existing hard surfacing is to be carried out under direct arboricultural supervision. These areas are to be covered by ground boarding as designed by the project engineer to cope with any likely loading.

No equipment, vehicles or plant shall operate beyond the tree protection fencing. Booms, hoists and rigs should be kept as far away from the canopies of retained trees at all times. Where it is necessary to operate within 5m of a tree canopy, it will be done with the utmost caution and under the control of a banks man. Damage to trees will be considered a breach of this tree protection plan, which in turn could be a breach of planning permission.

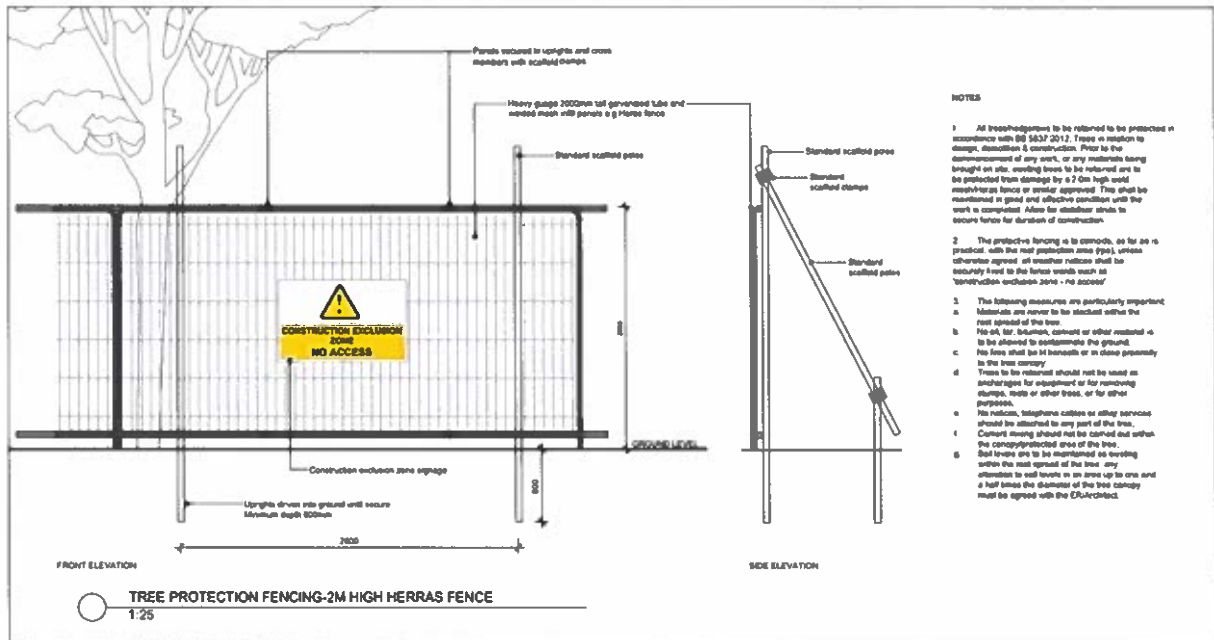
### ***Construction Exclusion Zone (CEZ)***

A CEZ is a designated area where there is to be no construction activity what-so-ever. Access to the area for construction parking, personnel or machinery is strictly prohibited and there is no scope for loading / unloading, materials or waste storage etc. The area is clearly marked on the tree protection plan (*D3 - TPP – Greenwalk Dev*), it will usually be denoted by protective barrier fencing, however, where the CEZ is on land outside of project control this is not always possible.

### ***Protective Barrier Fencing***

Protective barrier fencing should be appropriate for the intensity and proximity of the development to protect trees where development activity is in close proximity.

Default specification: To comprise either 2.4m wooden site hoarding; or a 2.3m high scaffold framework, well braced to resist impacts, with uprights to be spaced at a maximum of 3.0m intervals and driven into the ground by a minimum of 600mm. On to this, standard anti-climb welded mesh panels are to be securely fixed to each other with at least two scaffold clamps and to the scaffold frame work with wire.



**Fig 02: Tree Protection Type One**

**Secondary specification:** To comprise of 2m tall welded mesh panels on rubber or concrete feet. Panels are to be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The panels should be supported on the inner side by stabiliser struts, which should be attached to a base plate and secured with ground pins.

**Third specification:** To comprise of a 1.4 meter tall sheep wire stock proof fencing affixed to rounded timber stakes. All stakes to be firmly driving into the existing ground at 4 meter intervals with the stock proof sheep mesh wire tensioned and affixed. This method is predominately utilize around the perimeter of native hedgerows and larger tree groupings / woodland edges.

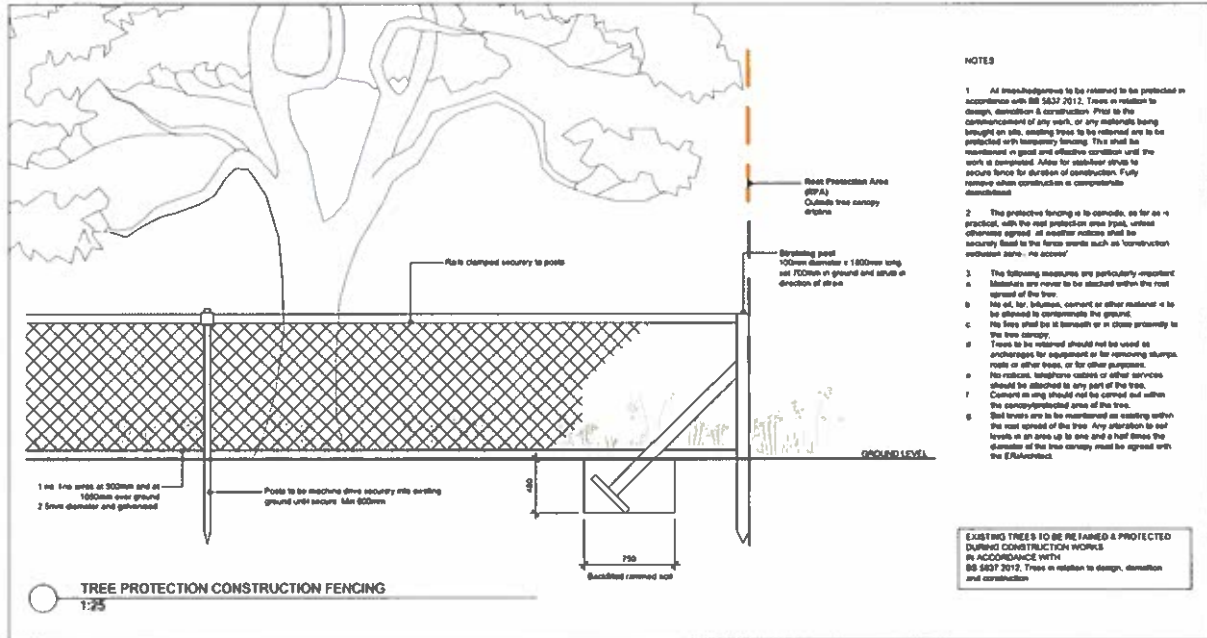


Fig 03: Tree Protection Type Three

**Signage:** denoting the words "tree protection area" at 5.0m intervals should be fixed to the protective barrier fencing. Protective fencing is to be removed ONLY with the written permission of the arboricultural consultant and approval of the local planning authority and or the consulting arborist.

# Tree Protection Area KEEP OUT

Do not move this fence

**TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECT OF A TREE PRESERVATION ORDER. CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION**

**ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY**

Fig 04: Tree Protection Signage

### **Ground boarding**

The existing hard surfacing located within the RPAs of tree numbers 1220 – 1227, 1229 & 1258 as depicted in the tree protection plan (*D3 - TPP – Greenwalk Dev*), should be retained for the duration of the project or until the new wearing course has been installed under direct arboricultural supervision.

New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

Where it is determined by the project engineer that the any hard surfacing is not adequate protection from any expected loading, ground boarding is to be installed to the engineer's specification on top of the hard surfacing within the root protection areas of retained trees.

Where machinery will be stored or used from the ground boarding within the RPAs of the retained trees an impervious barrier and or bunding to prevent oils, fuel or chemicals is to be installed to prevent leaching into the soil within or adjacent to the RPAs.

Note The ground protection might comprise of one of the following:

- a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100mm depth of woodchip), laid onto a geotextile membrane;
- b) for pedestrian-operated plant up to a gross weight of 2t, proprietary inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150mm depth of woodchip), laid onto a geotextile membrane;
- c) for wheeled or tracked construction traffic exceeding 2t gross weight, an alternative system (e.g. proprietary system or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected. A geocell arboricultural root protection system or similar to be utilized.

For any situations other than those described in a) or b) (as above), the ground boarding is to be designed by a suitably qualified person to an engineering specification in conjunction with arboricultural advice, to be suitable of supporting the expected loading to be placed upon it. In all cases, the objective of the ground boarding is to avoid compaction of the soil beneath, so that tree root functions remain unimpaired.

### **Demolition**

Prior to the removal of the existing gate post, tree protection measures are to be in place as per GLA's tree protection plan document number (*D3 - TPP – Greenwalk Dev*) and have been signed off. A copy of the demolition method statement has been submitted and approved by the project arboriculturist and LPA Parks Department, to ensure that there is no conflict with this method statement. All demolition work within or immediately adjacent to RPAs or canopies of retained trees is to be undertaken under the direct on-site supervision of an arboriculturist.

The structures are to be taken down so that all debris and materials are to fall outside of the RPAs and away from the canopies of all retained trees.

Foundations within and adjacent to the RPAs of retained trees are to be left in situ where ever possible. Where this is not possible demolition of the existing foundations are to be undertaken to the minimum depth required to allow for the installation of the new soft and hard landscaping.

The removal of the existing foundations within the RPA of retained trees are to be undertaken using a hand held pneumatic breaker, hand tools and wheel barrows to break up and remove the debris out of the RPA. In some situations, and only at the discretion of the arborist it may be possibly to use an excavator using a hydraulic breaker and a suitably sized toothless grading bucket.

It may be permitted by the project arboriculturalist for an excavator to undertake the demolition and removal of the foundation, but it must be situated outside of the RPA, on top of the hard surfacing working away from the RPAs or from suitable ground boarding capable of handling the expected loading.

If it is likely that there will be any soil collapse, or the trench begins to collapse within the RPAs of retained trees which will lead to the loss of rooting environment, excavations are to be stopped immediately and the trench is to be shored up to prevent further soil collapse.

Where the removal of foundations occurs within the RPAs of retained trees these voids are to be back filled with clean top soil.

### ***Hard Surfacing***

Where it is required for hard surfacing is to be removed and or re-surfaced within the RPAs of retained trees it is to be undertaken under direct on-site arboricultural supervision, during the landscaping phase of the development.

The wearing course will be broken up using a hand held pneumatic breaker, hand tools and wheel barrows to break up and remove the surfacing. Where is necessary to remove the sub base this is to be undertaken using a fork to loosen the material and moved using shovels and wheel barrows.

In some situations, and at the discretion of the arborist it may be possibly to use an excavator using a hydraulic breaker and a suitably sized toothless grading bucket. If an excavator is to be used it must be situated outside of the RPAs, on top of the hard surfacing working away from the RPAs or from ground boarding.

Whichever system is used there is to be NO disturbance of the soil beneath. If roots are found they are to be covered over with damp hessian and a layer of either sharp sand, wood chip or top soil will be applied as soon as practicably possible to prevent desiccation.



## Construction

Prior to the construction of the proposed development, a copy of the construction method statement should have been submitted and approved by the project arboriculturist and LPA Parks Department, to ensure that there is no conflict with this method statement.

All excavations and construction work within or immediately adjacent to RPAs or canopies of retained trees is to be undertaken under the direct on-site supervision of an arboriculturist

### ***Hard Surfacing***

Replacement wearing course to be situated within the RPAs of retained trees is to be designed in conjunction with arboricultural advice, to accommodate the likely loading. The design should not require excavation of the sub base, this will be determined by site investigations. Ideally the construction will comprise of the removal of the existing wearing course and a like for like replacement.

Where this is not possible, appropriate options for the sub base of hard surfacing situated within the RPAs of retained trees include multi-dimensional confinement systems (CellWeb™ or similar).

Alternatively, piles, pads or elevated beams can be used to bridge over the RPAs, or following exploratory investigations to determine location, to provide support within the RPAs while allowing retention of roots of 25mm or greater in diameter.

Exploratory investigation is to be undertaken manually under arboricultural supervision using hand tools (See Manual excavation).

Prior to the installation of the hard surfacing within the RPAs vegetation may be removed using hand tools or sprayed with an approved non-residual herbicide such as 'Glyphosate'.

## Services

Detailed drawings of proposed underground services are not available at this time; hence it is not possible to identify any specific potential impacts associated with the scheme at this stage.

Existing services within the site should be retained where ever possible. Where existing services within RPAs require upgrading, the upmost care must be taken to minimise disturbance, and where feasible trenchless techniques are to be employed, and only where necessary should open excavations be considered.

Where new services are to be introduced into the site they should be located outside of RPAs, where they will not interfere with tree roots. If any excavations are required within the RPAs all trenches are to be excavated by hand and radially to the tree trunks under direct on-site arboricultural supervision and are to be carried out under building & H&S guidelines.

Final positions of any proposed services should be verified and approved by the arboricultural consultant and local authority tree officer / parks department before implementation.

### ***New Underground services***

Trenching for installation of underground services and drainage routes could sever any roots that may be present and as such adversely affects the health of the tree. For this reason, particular care should be taken in routing and methods of installation of all underground services. All underground services and drainage routes should be located so that no excavations are required within RPAs.

Where it has been impossible to keep underground services from passing through RPAs or within close proximity to trees, these sections are to be installed in one of three ways, under on site arboricultural supervision.

### ***Trenchless Techniques***

There are three main types of trenchless techniques, these include, guided and unguided boring and pipe replacement by lining or bursting. These allow for the installation, maintenance or renewal of underground services, without the disturbance of soil in which roots are likely to be growing. Starting and receiving pits for the boring machinery are to be located outside of the RPAs of any retained trees, with the bore depth being maintained at a minimum depth of 600mm below the existing ground level. Techniques involving external lubrication of the equipment shall use no material other than water as other lubricants could contaminate the soil (e.g. oil, bentonite, etc.).

### ***Manual Excavation***

Excavation within RPAs will be undertaken by hand under direct on-site arboricultural supervision of the required depth of the foundation; Or to a minimum of 600mm deep of any excavation, whether for proposed foundations, hard surfacing or underground services. The total depth of the manual excavation will be determined by the arboriculturist whilst on site.

The soil is to be loosened with the aid of a fork or pick axe and then cleared with the aid of an Air-spade, Air-vac and or shovel. Any roots found will be cleanly severed by the arboricultural consultant with either a hand saw or secateurs.

Any roots found with a diameter of less than 25mm shall be cleanly severed by the arboricultural consultant. Any roots of 25mm and above shall be excavated around without damaging them; the arboricultural consultant shall decide if it's feasible or necessary to retain the root, if not it shall be severed.

The edge of the excavation closest to the trees will be covered with damp hessian to prevent soil collapse or contamination by concrete.

Soil beneath the depth may be sheet piled, regular piled or excavated deeper. Machinery may be used for this providing that it is situated outside of the RPA or has appropriate ground protection in place to move around on and work upon.

### ***Broken Trench – Hand Dug***

This technique combines both trenchless techniques and manual excavation where excavation is unavoidable. Excavations should be limited to where there is clear access around and below the roots. All trenches shall be excavated by hand with the same precautions taken as for manual excavation. Open section of trench should only be large enough to allow access for linking to the next section.

### **Landscaping**

Landscaping around retained trees may only be carried out once all tree protection measures have been removed (planting, turfing, fencing etc.).

All excavations within the Root Protection Areas shall be undertaken by hand and without reducing current ground levels unless it is agreed in writing with the LPA. At no time is the use of a rotavator permitted within the RPAs of retained tree.

Any tree roots discovered will be left in-situ and shall not be cut or otherwise damaged. Where possible, the soil structure within the Root Protection area shall be preserved.

No works will be carried out within the RPAs of any trees if the soil moisture is of such a level that soil compaction may be likely. Should the soil become compacted or has poor structure which would hinder the development of the existing trees and plants or any new plantings the arboriculturist should be consulted about soil decompaction techniques.

### **Monitoring and Supervision**

Where trees have been identified within this method statement and tree protection plan drawing number (*D3 - TPP – Greenwalk Dev*) for retention, there should be an auditable system of arboricultural monitoring. This is to extend to arboricultural supervision whenever demolition or construction activity is to take place within or adjacent to any canopy or RPA.

The development's tree protection measures are to be monitored and all demolition and construction works to be undertaken within or adjacent to the RPAs of retained trees are to be supervised by project arboriculturist, who should be retained to record and report observations to the council at appropriate intervals. A site-specific record sheet is shown at Appendix III.

### ***Pre-commencement site meeting***

Prior to the commencement of any works or machinery and materials arriving on site a pre-commencement site meeting involving the project arborist, land owner or agent, site manager, contractors and engineer (as appropriate) and the relevant LPA officers will be held to ensure that all aspects of the arboricultural method statement and tree protection are understood and for all parties to swap contact details (see Appendix IV).

### ***Monitoring and supervision schedule***

The initial monitoring visit will be to check that the tree protective measures are in the correct location and as specified within the approved method statement; if so to sign off their installation.

Thereafter monitoring visits are to take place at regular intervals, to ensure that tree protection measures remain in place and are functioning as designed or whenever necessary to undertake works to be carried out under arboricultural supervision. The frequency of the monitoring visits is to be determined with the LPA tree officer at the pre-commencement site meeting.

A record of all arboricultural monitoring and supervision visits will be kept, and any faults will be logged, this will then be copied to the site agent, developer and local planning authority in a digital format.

If during the course of the development, it is necessary for areas to be re-designed so that they would require changes to the approved arboricultural method statement or tree protection plan and so affecting retained trees the project arborist and LPA tree officer will be invited to attend a site meeting with all relevant parties. Prior to any changes being implemented these must have been approved in writing by the LPA tree officer.

### ***Supervised activities***

The arboricultural consultant will be required to attend site to directly supervise all demolition and construction works that are to be undertaken within or adjacent to the RPAs of all retained trees and will be advised a minimum of 72 hours prior to the commencement of any works that require his attendance, these will include:

1. Pre-start meeting with the LPA to agree tree bond and overall arboricultural on site operations / methodology's / works
2. Location of protective measures.
3. Supervised felling of approved trees by a certified tree surgeon. Supervision of the maintenance of the 100 linear meters of native hedgerow.
4. Supervised excavation for replacement of wearing course on existing hard surfaces within RPAs of groups of tree numbers 1220 – 1227, 1229 & 1258 as depicted in the tree protection plan (*D3 - TPP – Greenwalk Dev*),
5. Any excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services.
6. Removal of protective measures
7. Sign off by project arboriculturalist



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***Completion meeting***

Once all construction works have been completed all materials and machinery has been removed from site the project arborist shall be informed and will invite the LPA tree officer to meet on site to discuss the process and discuss any final remedial works that may be required and to sign the development off so that the protective measures may be removed.

Should you require any further commentary please do not hesitate in contacting me at any stage,

Regards,

Oisin Griffin

A handwritten signature in black ink, appearing to read "Oisin Griffin".

Managing Director – Griffin Landscape Architecture

Date: 15.12.2022



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## Appendix I: Tree Impact Plan





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## Appendix II: Tree Protection Plan







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### Appendix III: Tree Protection Notice

# Tree Protection Area

# KEEP OUT

Do not move this fence

**TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS  
AND/OR ARE THE SUBJECT OF A TREE PRESERVATION ORDER.  
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL  
PROSECUTION**

**ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN  
PERMISSION OF THE LOCAL PLANNING AUTHORITY**



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## Appendix IV: Arboricultural Monitoring and Supervision Sign Off Checklist

Tree Number	Task	Date Completed	Signed GLA Arborist	Signed Site Mgt.
All	Pre-Construction Site Meeting & Tree Bond agreement with Local Authority			
All	Sign off the location and specification of the protective measures			
1253, 1254, 1255, 1255A, 1255B, 1256, 1257, 1258A, 1227, 1230, 1231, 1232, 1233A, 1233, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1249A, 1250, 1251, 1252. & 16 linear meters of Hedgerow.	Supervise Approved Tree Felling & Hedge row removal			
All	Completion of demolition			
1220 – 1227, 1229 & 1258	Supervised excavation of wearing course			
1220 – 1227, 1229 & 1258	Installation of new wearing course and landscape planting			
All	Completion of construction			
All	Removal of machinery and materials from site			
All	Dismantle & removal of protective measures			
All	Completion of Landscaping			
All	Sign off from project arboriculturist & Tree bond completion certification			



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The assessments made assume that the sites and facilities will continue to be used for their current purpose without significant change. The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested. Information obtained from third parties has not been independently verified by Griffin L.A. Ltd.