

**Assessment of Likely  
Arboricultural Impacts  
Proposed storm water storage tank and associated works  
Balheary Road,  
Swords,  
Co Dublin**

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Gannon Homes  
52 Northumberland Rd,  
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Dublin,  
D04 A665

**Re. Request for Additional Information regarding**  
**Trees adjoining proposed**  
**storm water storage tank and associated works area**  
**Balheary Road, Swords, Co Dublin**

**Prepared by**

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**Report Brief**

“The Tree File Ltd” has been requested by “Gannon Homes” to address the Arboricultural issues raised in the request for additional information outlined in the Fingal County Council decision order PF/2285/21 regarding application register reference F21A/0476. Particularly, this report addresses item No.10 of the request for additional information.

**Report Context**

This report and the recommendations made are based on an above ground visual review of the tree in question. The recommendations provided are based upon the inspector’s knowledge and experience.

**Nature of Information**

Attention is drawn to the information outlined in “Appendix 1” to the original and primary report in relation to “Inspection and Evaluation Limitations and Disclaimers”, some of which may be irrelevant in respect of this report.

## **Report Summary**

The survey overview of the site area has identified many trees whom through proximity to the proposed works zone, could be considered at risk. However, the review of the work proposals and the receiving environment, note that any excavation works that could be injurious to tree roots, only occur within what are hostile ground environments. This ground environment consists of an existing road structure and multiple utilities trenches (see Fig 1) into which there is little risk of root penetration. Therefore, and should the trenching works be limited to the central road structure, then the likelihood of encountering tree roots will be minimal, and any roots encountered are likely to be at such low proportions and sizes, as to greatly limit the threat of impacts.

There might appear to be exception to this regarding trees at exceptionally short ranges from the road edge. There are two Sycamore close to the telecoms inspection hatches which suggests prior intervention and trenching that may have already separated these trees from the road structure. The second individual tree is that which supports a safety mirror, directly opposite the entrance to the National Museum of Ireland collection resource centre. This particular tree is located outside of the original roadside wall and within 400 mm of the road edge. In light of the species potential for growth, combined with the proximity of these trees to underground infrastructure and the road edge, it is advised that each of these three individual trees are reviewed in respect of their reasonable sustainability, regardless of the project under review. Considering the capacity for growth as asserted by Sycamore, it must be appreciated that these trees will not achieve mature stature at their locations without creating issues including road encroachment and infrastructural disturbance.

It is advised that tree protection in association with the proposed works takes two preliminary forms.

- a) Progressive trenching is monitored with regard to the nature and extent of any tree root material encountered.
- b) The works locus is reviewed regarding necessary plant and equipment and the provision of minimum headroom and clearance.

In respect of “a” above, it is envisaged that the proposed works will encounter minimal root material. If however, and as the works progress, this is proved incorrect, then with stakeholder agreement, a tree works specification will be provided for acceptance and application. Such works would typically involve crown reduction type works to address any perceived loss of stability.

In respect of point “b” above, the nature of current traffic is considered such as to make the likely conflict of construction traffic with trees highly unlikely. However, should this prove to be the case then judicious and careful pruning can be applied to improve headroom thereby avoiding damage or to repair any inadvertent damage as might occur to branches and twigs.

## **Proposed Works**

The proposed development will consist of a proposed stormwater storage tank and overflow outfall gravity sewer to the Broadmeadow River with associated manholes, proposed vehicular/service access onto Balheary Road; landscaping; boundary treatments; and all associated engineering and site works necessary to facilitate the development.

## **Receiving Environment**

The drainage proposals are intended for insertion within a narrow corridor adjoined to both the east and west by trees (see Fig 1). However, and notwithstanding the proximity of trees to the proposed works area, the trees are likely to prove to be physiologically detached from the excavation works themselves. This relates to the fact that the proposed trenching works associated with the drainage proposal is to be located within the structure of an existing roadway.

The existing road corridor relates to a long-term and historic roadway upgraded and improved on multiple occasions in the past. The current incarnation includes a standard tarmacadam over hard-core base. This medium and it's in permeability creates a ground environment that is both inaccessible and of minimal use to tree roots.

The effective ceiling of the service creates a watershed and an impediment to gas exchange. Furthermore, standard road construction creates a highly dense medium associated with the creation of necessary California Bearing Ratios (CBR) into which tree roots can rarely progress. Empirical evidence typically finds that tree roots associated with roadside positions tend to overcome the issue by developing root systems that run longitudinally in parallel to the road edge as opposed to succeeding to penetrate the road structure itself.

## **Tree Populations**

The tree population as reviewed has been described in 5 groups (see tree review below). Groups 1 to 4 consist of young, relatively small trees, while Group 4 comprises 4 mature Austrian Pine.

A clear majority of these trees are currently of good health and would appear to offer substantial sustainability. Notwithstanding this, none works related issues exist, including the spread of Ash Decline and its potential effect of the Ash trees as reviewed. Another issue relates to tree location and potential for growth. Attention is drawn to the commentary regarding some trees located particularly close to the road edge. Such trees may be of limited sustainability, as their growth potential to mature sizes is likely to compromise either the road or associated infrastructure.

## **Conclusions**

The proposed works will be located within an artificial and hostile ground environment beneath an existing road. Much of the ground sustained extensive prior intervention and disturbance, including multiple areas of trenching.

Limitations to natural root development would suggest that potential tree root related impacts will at worst, be minimal. This suspicion appears to be corroborated by the extent and nature of existing underground infrastructure and its illustration of prior trenching.

Limiting works to the hard carriageway is likely to avoid tree related damage. Nonetheless, review at excavation time is advised, as is review in respect of necessary overhead clearances required to achieve the works.

It is advised that due consideration is given to the sustainability of the two young Sycamore adjoining the telecoms inspection hatches, and the Sycamore opposite the entrance to the National Museum facilities.

## **Tree Review**

The review of trees has noted, by way of similarity of age, size and location, that the various elements of the review population can be regarded as cohesive groups.

In this respect and as described below, the trees associated with the receiving environment have been divided into four broad groups (tree groups 1 to 5)

### **Tree group 1**

London Plane (*Platanus x hispanica*)

A group of 11 young London Plane, setback circa 10.00 m from the eastern side of the Balheary Road. These young trees are in generally good condition and assert root protection areas typically not exceeding 5.00 m. Accordingly, these trees can be regarded as being physiologically detached from the proposed work zone.

### **Tree group 2**

Ash (*Fraxinus excelsior*), Norway Maple (*Acer platanoides*)

An alignment of 12 young trees including 8 ash and 4 field maple. These young trees are in broadly good condition however, some concern attaches to the ash in light of the prevalence of ash and dieback within the greater Dublin area. Accordingly, the sustainability of the ash portion of this population cannot yet be regarded as being sustainable and it is advised that the ash are reviewed on a regular basis.

The four Field Maple remain in good condition and offer substantial sustainability. All trees arise from a soft landscape corridor between a cement/concrete car park to the west and a cement and macadam path/cycleway to the east. Is over which they arise is circa 3.50 m wide with the trees being positioned typically to the east of the centre of this zone.

To the east of the site boundary, the public footpath and cycleway is circa 3.50 m wide before reaching the road edge.

Notwithstanding the proximity of these trees to the site boundary and roadway, ground conditions are considered such as to be likely to have greatly curtailed natural root spread. Considering anaerobic conditions and limited percolation associated with these cement surfaces, is considered likely that tree roots will have developed a proliferated within areas of open ground stop combining the size of the trees in question as well as the features between the trees and the road edge, it is considered highly unlikely that any root material will have reached the roadway corridor.

### **Tree Group 3**

Ash (*Fraxinus excelsior*) Field Maple (*Acer campestre*)

This group is effectively a continuation of “Tree Group 2”. The group includes 9 Ash and 2 Field Maple in positions adjoining the roadside boundary. These trees differ from those in tree group to in that they arise from elevated positions relative to the roadway. Under the section, tree bases are circa 400 mm above pavement levels whilst at the northern end in close to the museum entrance, tree bases are in excess of 1.00 metre above adjoining pavements.

The considerations with regard to separation from the road exist in this instance but are exacerbated by the dramatic change in ground levels. It is considered highly unlikely that tree roots from these trees will extend much beneath the public footpath and are considered highly unlikely to reach any positions near the roadway.

#### **Tree group 4**

Sycamore (*Acer pseudoplatanus*), Ash (*Fraxinus excelsior*), Common Alder (*Alnus glutinosa*), Bramble (*Rubus fruticosus*), Snowberry (*Symphoricarpos Sp.*), Ivy (*Hedera helix*)

This review area involves the westernmost edge of a substantial woodland thicket, extending considerably to the east. Review of individual trees notes a typically young age profile with substantial age similarities. The species encountered suggest natural thicket redevelopment subject to a hiatus in historic land management. The clear majority of trees appear to be in good general condition however, and is raised in respect of “Tree Groups” 2 and 3, some concern attaches to the Ash population in light of the prevalence of ash and dieback within the greater Dublin area.

A clear majority of trees currently appear to be of good health and notwithstanding the issues relating to Ash, would offer substantial sustainability. These trees arise from varying positions and ranges from the road edge however, a small proportion arise from positions within 1.00 m of the road.

It is considered highly likely that the soft margin associated with the road edge will have been colonised by tree roots. Areas beyond this particularly extending to the west beneath the road surface likely to see a rapid diminution of tree roots in line with increasing bulk density and rates of compaction. In this respect, it is considered unlikely tree roots will extend for any great range beneath the road and that the extent and quantum of tree roots extending beneath the road edge will diminish rapidly. Furthermore, joints, strips and anomalies within the root surface would suggest that the road edge, and possibly the soft margin adjoining the road edge has been previously disturbed, this factor appears to be borne out by the existence of underground utility service hatch covers in the general area. Additionally, it is noted for much of this length of the roadway, there is in existence of the stone wall. But the stone wall have been repaired with cinderblock formations, suggesting a need for prior intervention and foundations whilst the Stonewall itself will be considered to provide only minimal obstruction to tree root development, it will nonetheless have some effect.

#### **Tree Group 5**

Austrian Pine (*Pinus nigra*)

A group of four mature and typically good quality Austrian Pine, located to the west of the existing roadway. These trees tend to be setback from the road edge and separated from the road edge by a wall of relatively recent construction relative to stone walls noted elsewhere within the area. The two southernmost specimens located at circa 8.00 m back from the road edge considered such as to present little potential of tree roots extending to that position. The two northernmost specimens located close to the riverbank and bridge abutment and as such opposition beyond any likely impact of the proposed works that would have, at this point, turn towards the north-east and the proposed water outfall.

## Site Photographs



**Photo 1**

Tree Group 1, A group of London Plane set back to east of Balheary Road. At this range, these trees will be unaffected by works within roadway.



**Photo 2**

Tree Group 2. Located closer to the roadway, but are separated by a substantial pavement. Root development beneath the pavement will be highly limited, meaning that works within the roadway are unlikely to have minimal if any effect on the trees.



**Photo 3**

Tree Group 3. Continuing from tree group 2, these trees are further separated from the roadway by a retained “step” feature ranging from 400 to more than 1000mm in height. This combines with the adjoining pavement suggest that works within the roadway will not affect the trees



**Photo 4**

Tree Group 4. This comprises a broad and variable area of wood thicket, typically dominated by relatively young trees.



**Photo 5**  
Tree Group 4. This comprises a broad and variable area of wood thicket, typically dominated by relatively young trees.

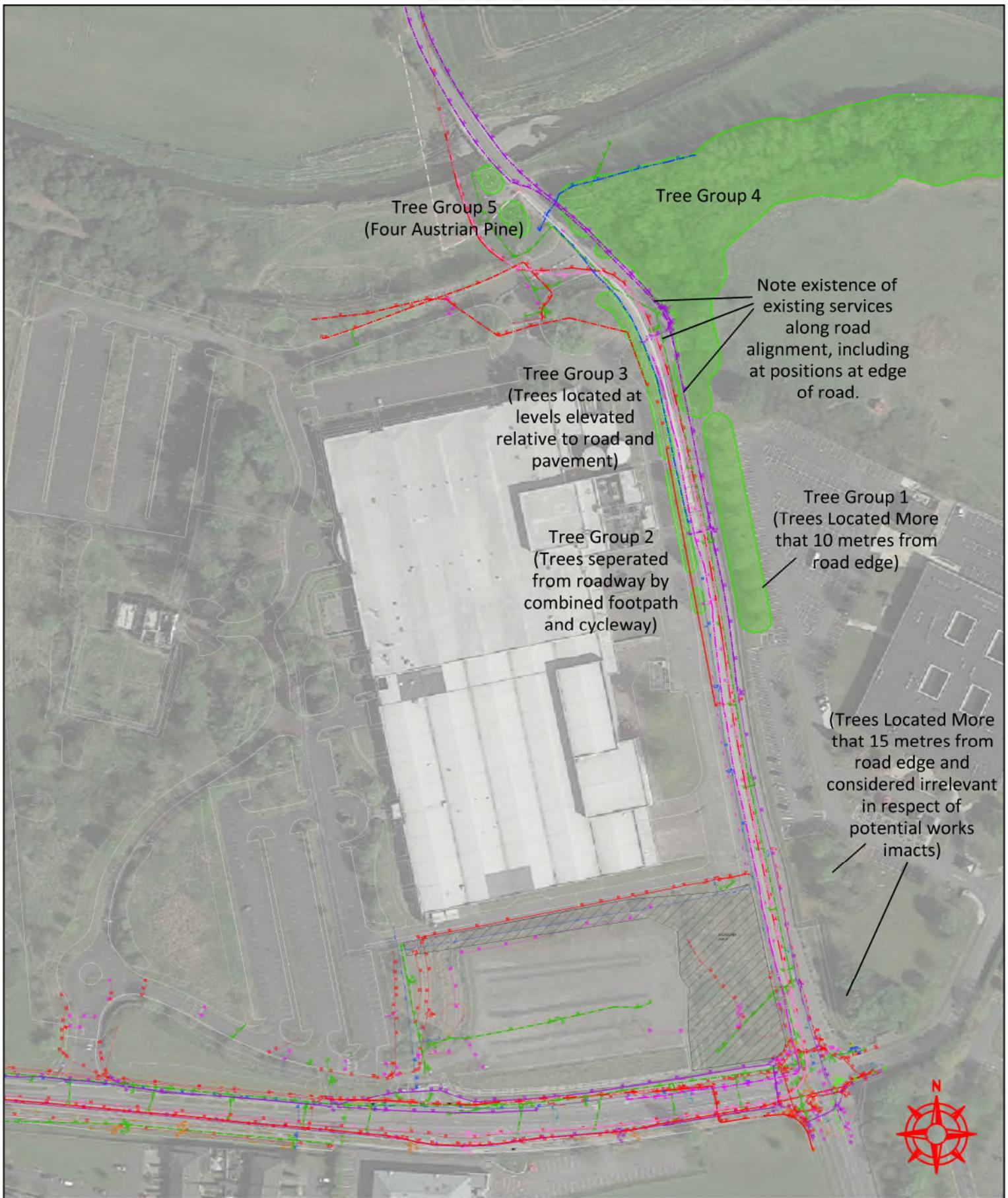


**Photo 6**  
Tree Group 4 and 5. This image illustrates the 4 Austrian Pines of tree group 5. It also illustrates the existence of known underground services, apparently running within the soft margin along the eastern edge of the Balheary Road. This suggests a high likelihood of prior tree root severance and disturbance.



**Photo 7**

Tree Group 4. This image illustrates the broader tree group, as well as the individual Sycamore positioned opposite the entrance to the National Museum of Ireland collection resource centre. While the apparent existence of underground services suggests prior root cutting, the proximity of this tree to the roadway would require particular review at excavation time.



Site at Balheary Road,  
Swords

# Tree Drawing

Fig 1.

Scale 1:2000 @ A4

This drawing illustrates the context of the proposed development.

Note should be made that the works area supports no trees, but there are trees located on lands to both the east and west of the works area.

This drawing illustrates the fact that the proposed services route supports numerous pre-existing underground services, indicating prior intervention and apparent trenching.

The location of the proposed tank raises no Arboricultural issues. The proposed services run to the outfall, being within the existing and services corridor appears unlikely to result in tree damage. It is nonetheless advised that the excavations are progressed with care and under Arboricultural inspection, so that any tree root encountered can be evaluated and responded to in a correct and necessary manner.

## **Appendix 1**

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

The information set out in this report relates to the review of tree groups adjoining the site in question. As such, the information provided is based on a general and visual review of the tree.

This report is not a safety assessment. The assessment techniques and methodologies used for this report would be deficient in extent to provide for a reliable safety assessment. The report is intended to provide a general over-view regarding the suitability of the individual tree for retention and how that tree should be managed including where necessary, the use of additional technologies and inspection methodologies.

All trees, even those apparently healthy, are subject to impromptu failure and damage, particularly during severe weather events such as storms or high winds. The assessment of risk as may be presented by a tree in a given context requires the review of numerous factors in excess of those noted herein and as such, remains beyond the scope of this document. Any attempt to use the information herein for such purposes will render the information invalid.

All inspection and tree assessment has been completed by a competent and experienced Arborist. The inspection involves visual assessment only, which has been carried out from ground level. No below ground, internal, invasive or aerial (climbing) inspection has been carried out.

Trees are living organisms whose health, condition and safety can change rapidly. It is recommended that all trees should be re-evaluated regarding their condition on an annual basis or subsequent to substantial trauma such as a storm event, other damage or injury. It is advised that 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.

Throughout the undertaking of the survey, a number of factors acted against the inspectors, contriving to reduce the accuracy of the survey.

### **Seasonality**

The survey was commenced during the winter period. Some of the signs, typically symptomatic of ill-health or defect within a tree may not have been available to view at the time of the survey or may have been obscured by seasonality related factors. Some of the fruiting bodies of various fungi, parasitic upon or causing decay or disease in trees, may have been out of season and unavailable to view. This survey can only comment upon symptoms of ill-health or defects visible at the time of the inspection.

### **Ground Conditions**

In the case of this tree inspection, no comment can be made regarding the condition of the subsurface buttress region or surface roots, as ground surfaces in the vicinity of the tree have been modified, in some instances now comprising impenetrable surfaces.