



DUCKWORTHS
ARBORICULTURE LTD.

ARBORICULTURAL REPORT

Addendum to the Tree Condition Survey & Mitigation Strategy by
Duckworth's Arboriculture 06408/2024 (July 2024): An Arboricultural
Impact Assessment of Driveway Improvement Works on Adjacent
Trees

LAND ADJ. WATERLOO COTTAGE & WOODLANDS HOUSE
BATH ROAD
KNOWL HILL
WOKINGHAM
RG10 9UP

WBC PLANNING APPLICATION REF: 241683

DECEMBER 2024

Ref: SCD 06408 / 2024

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Project: Full application for engineering operations to create new drainage ditch and remove previous drainage ditch, plus resurfacing of existing access

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File ref: 06408 / 2024

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1.1 Background

In their assessment of planning application 241683 which is for 'engineering operations to create new drainage ditch and remove previous drainage ditch, plus resurfacing of existing access. (Retrospective)', Wokingham Borough Council's Tree and Landscape Officer has requested further information in the form of an 'AIA (Arboricultural Impact Assessment) that examines the impact on protected trees located along the driveway to Woodlands Farm'.

A site visit was held on Monday 18th November 2024 with the client and Sarah Duckworth (Arboricultural Consultant) in attendance. The purpose of the site visit was to review the works which have been taken along the access drive and to assess any impact these works may have had on the adjacent trees.

In this report I have reviewed the impact of the works on trees and where appropriate considered whether site enhancements are required by which any impact on trees may be satisfactorily mitigated.

1.2 The Access Driveway

The driveway / access to Woodlands Farm runs to the southeast of Waterloo Cottage. The track is 160m long and has historically been formed of compacted hardcore. The original driveway had a central strip of vegetation where self-seeded grass and weeds were able to germinate and grow in areas of the driveway which were not regularly impacted by passing vehicular traffic.

There is an existing ditch which runs along the southern edge of the driveway for the northernmost circa 90m of driveway before the entrance to Woodlands Farm. This ditch is existing. The edge was previously bordered by white wooden posts.

On the southwest boundary (far side) of the ditch there are a number of mature trees and dense shrub understorey.

1.3 Access Driveway / Ditch Improvement Works

Works undertaken to the driveway and ditch are summarised as follows:

- i. The driveway has been resurfaced with gravel /stones placed over a new layer of compacted scalpings.
- ii. New kickboard and lights / bollards have been installed to mark the edge of the access drive.
- iii. The ditch has been cleared detritus.
- iv. 'Debris screens' have been installed within the ditch to prevent significant blockages at the headwall.
- v. A new headwall has been constructed at the entrance to the culvert at the southern end of the ditch.
- vi. There is a replacement of an existing drainage pipe at the northern end of the ditch.

1.4 New Driveway Surface

The driveway has been resurfaced with gravel/stones placed over a new layer of compacted scalpings. I have been advised by the client that this was carried out without removing the compacted hardcore of the original driveway and that therefore, the new driveway is effectively of a 'no-dig' structure.

I have found no evidence on site to indicate that this is not the case, or which might suggest that any lowering of the ground levels within the driveway might have taken place prior to laying the new aggregate subbase.

On the southwest boundary (far side) of the ditch there are a number of mature trees and dense shrub understorey. Although the driveway is well within the general circular root protection area of these trees, practically speaking the presence of the ditch means the trees are more likely to be rooting on the far side of the ditch and offsite. Roots which do traverse the ditch will do so at depth as the ditch is around 60cm deep. No significant woody roots are therefore likely where they could have been affected by the resurfacing work - directly under the driveway surface.

The new gravel driveway is raised above the previous driveway level. The aesthetic gravel surface is retained by an existing boundary fence and the new kickboard border which runs adjacent to the ditch.

The gravel surface and compacted aggregate / scalpings will be semi-porous and will have no greater impact on tree(s) than the original compacted aggregate of the original drive. For the few roots likely to grow under the driveway I am satisfied that the driveway resurfacing will not impoverish or create significantly worse growing conditions for tree roots than would be present under the original driveway surface.



Figure 1 – Google Street View image of the access driveway from April 2021 – prior to resurfacing works



Figure 2 – Google Street View image of the access driveway from October 2023 after new scalplings had been laid.



Figure 3 – Photo of the access driveway from November 2024 with new aesthetic stone / gravel surface.

1.5 New lights / bollards & kickboard

There is a new low-level kickboard adjacent to the ditch line and low wooden lit bollards along the drive. The client has confirmed that the electrical conduit is at ground level and indeed it can be seen where it has been attached to the low kickboard without any trenching on site.

The kickboard sits on existing ground levels and is supported by concrete posts. The concrete posts have mostly been pushed into the ground but where the bank was unstable in some areas, the posts have been shored up with concrete.

It has been confirmed that the post holes for the individual low bollards along the driveway were excavated by hand and posts have been set in concrete.

The leachate from poured wet concrete is toxic to plants. However, the concrete around the postholes was trowelled in place in a semi-set state and this will have reduced leachate from the mix. The concrete, being placed in localised post holes on the far side of the ditch, cover a very small area of each tree's overall rooting area and in an area where few woody roots are likely to be present. The impact on trees on the far side of the ditch will therefore be negligible.

I am also of the opinion that removing the kickboard, wooden bollards and associated areas of concrete would cause more ground disturbance and potential harm for tree roots and is not advised at this time.



Figure 4 – New Bollard and kickboard.



Figure 5 – Kickboard rests on pre-driveway construction ground levels – note the electric cable at base.

1.6 Removal of detritus from the ditch.

General detritus has been removed from the ditch. I have been advised that aside from this, the ditch has not been widened or deepened in any way. Vegetation along the ditch edge is undisturbed which supports this assertion, and I have noted that there are no exposed or cut roots along the banks of the ditch which may indicate scraping of the sides of the ditch.

Under the current season's leaf litter in the ditch, there is one damaged root at the base of the ditch adjacent to an Oak tree. New wood and adaptive growth around the wounded area confirms that this is not recent damage and that the wound predates the recent ditch improvement works by many growing seasons.

I am satisfied that the clearance of debris from the ditch has been carried out with reasonable care and that there has not been any harm to trees adjacent to the ditch as a result of these works.



Figure 6 – Vegetation along the ditch edge is undisturbed.



Figure 7 – Historic Damage to root at base of ditch (predates recent ditch clearance)

1.7 Installations of debris screens within the ditch

Four wooden framed debris screens have been installed within the ditch to hold back twigs and larger debris to avoid matter building up and blocking the culverts further downstream.



Figure 8 – Historic Damage to root at base of ditch (predates recent ditch clearance)

As with the bollards and posts for the kickboards, the client has confirmed that the post holes for the individual low bollards along the driveway were excavated by hand and posts have been set in concrete.

The leachate from poured wet concrete is toxic to plants. However, the concrete around the postholes was trowelled in place in a semi-set state to prevent it running down the bank and this will have reduced leachate from the mix. The concrete, being placed in localised post holes, covers a very small area of ground. None of the screens are directly adjacent to any significant mature trees. Only smaller shrubby trees which form the hedgerow group will have been affected.

Removing these debris screens and the associated posts and concrete which support them would cause ground disturbance and potential harm for tree roots and is not recommended at this time.

1.8 New concrete retaining wall & culvert at the southern end of the ditch.

A retaining wall has been constructed to prevent the erosion of the ditch where it heads into the culvert at the southern end of the ditch. The retaining wall is partially within the BS:5837 Root Protection Area (RPA) of T039 (Oak) and 5.6m from the tree's base.



Figure 9 – Retaining wall & culvert at the southern end of the ditch.

Whilst there is no visible evidence of tree root damage it is possible that the excavation of foundations for the retaining wall within the RPA may have caused some smaller fine tree roots to be cut. However, the orientation of the retaining wall which runs radially to the tree's base and its location on the very periphery of the RPA means the impact of its construction on the tree will be small.

T039 (Oak) is otherwise in good health and at the time of both site visits (April 2024 & November 2024) the canopy and bud density show no indication of stress or decline which can occur when tree roots are damaged. I have therefore concluded that there is no permanent harm to the tree as a result of this work.

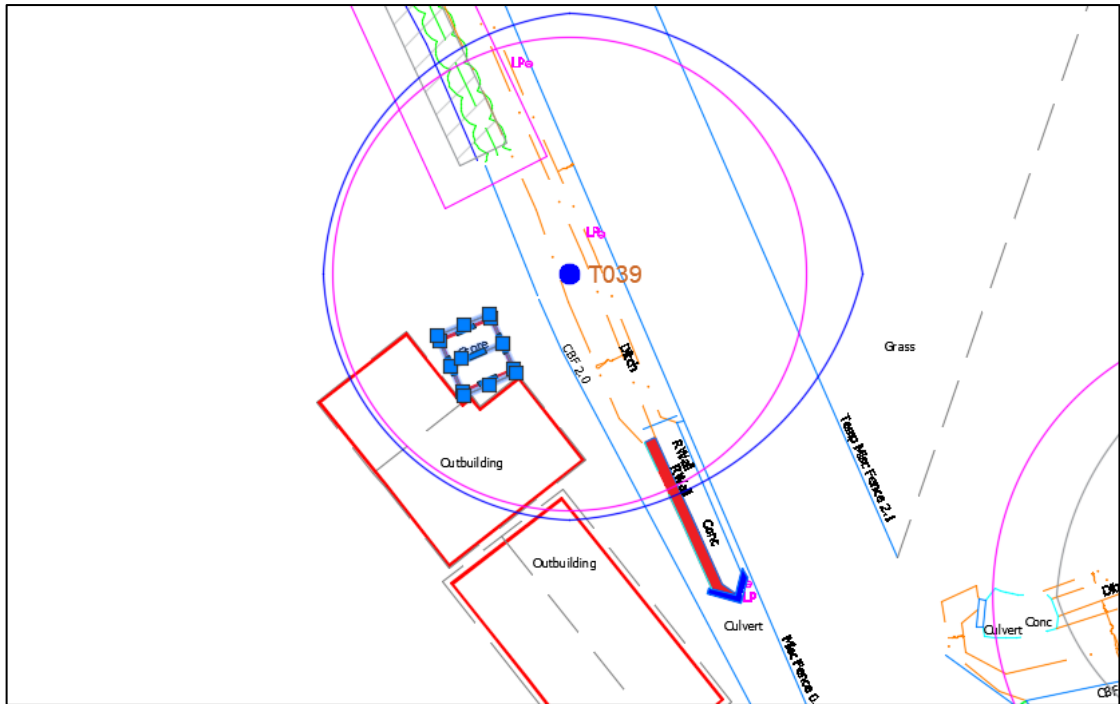


Figure 10 – Culvert (shown in red) in relation to the Root Protection Area of T039 (Oak)

1.9 Replacement of an existing drainage pipe at the northern end of the ditch.

An existing culvert has been replaced at the northern end of the ditch where it crosses the field entrance. The original culvert consisted of a smaller pipe which was blocked by debris. The pipe was removed and replaced with a larger diameter pipe set in concrete

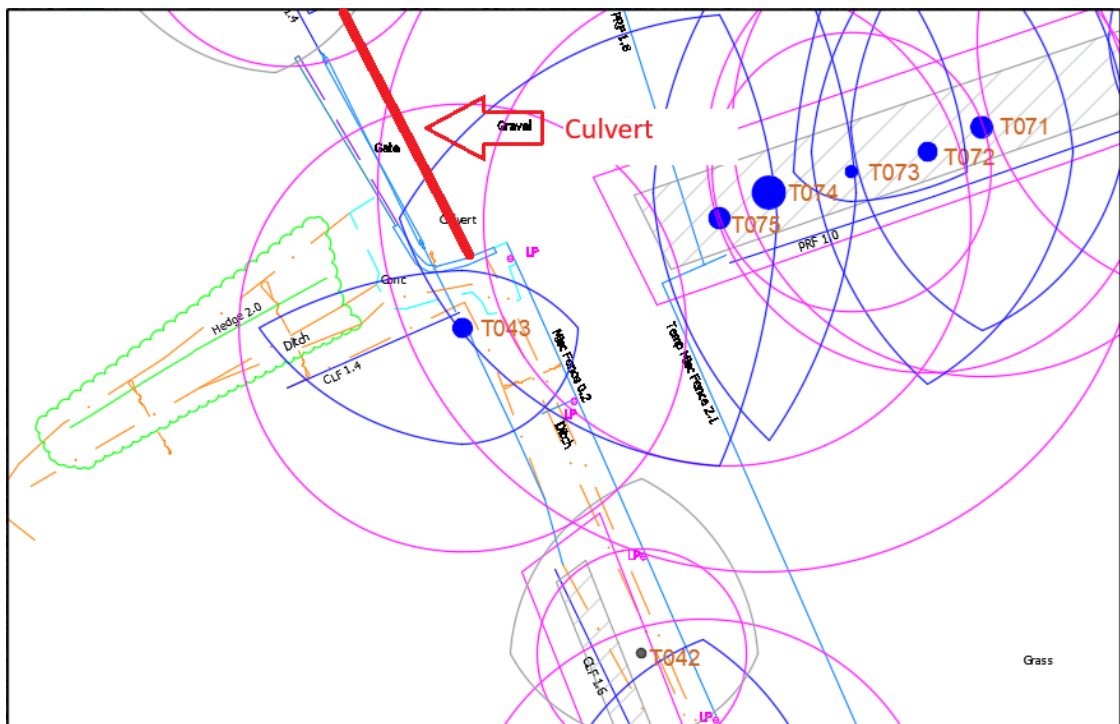


Figure 11 – Culvert (shown in red) in relation to the Root Protection Area of T043 (Oak)



Figure 12 – New culvert (shown in red) at the northern end of the ditch.

There is a mature Oak (T043) immediately adjacent on the far side of the ditch. This tree has a swept stem towards the ditch and there is adaptive growth on the lower trunk to accommodate the lean. The tree therefore has more prominent roots on the tension side of the trunk (away from the adjacent ditch).

The existing culvert is within the root protection area of T043 (Oak) and the culvert is also partially within the outer root protection areas of T074 (Beech) which is growing on the far side of the access drive.

The ditch has been lined with concrete. I have been advised that this concrete was laid directly onto the soil without any excavation. The concrete is intended to prevent erosion of the bank where the water negotiates a bend in the ditch.

As advised previously, because the concrete was trowelled in place in a semi-set state, it will have reduced potentially toxic reaching the soil. The concrete appears very shallow and is unlikely to result in significant capping of the tree's overall rooting area. The new culvert is in the position of an existing culvert although some roots may have been impacted with the installation of the wider pipe.

The orientation of the retaining wall which runs radially to the tree's base and its location on the far side of the ditch, means the impact of its construction on the tree roots will be reduced.

As with T039, T043 (Oak) is in good health and at the time of both site visits (April 2024 & November 2024) the canopy / bud density is normal and the tree is exhibiting no signs of stress or decline which can occur when tree roots are damaged. I have therefore concluded that there is no permanent harm to the tree as a result of this work.

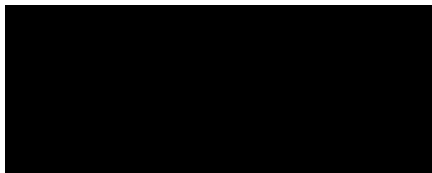
1.10 Conclusion

We trust that the additional information provided in this overview is sufficient to demonstrate that recent engineering operations to create new drainage ditch and remove previous drainage ditch, plus resurfacing of existing access has not had any significant or lasting impact on protected trees growing adjacent to the access drive / ditch line.

The works were undertaken in good faith by the property owner to resolve an immediate drainage and flooding concern. The new driveway surface is of a no-dig construction with scalpings laid over the existing compacted hard-core driveway. Excavation for new posts to support the low-level lights, kick boards and debris screens have been excavated by hand. Although concrete has been directly applied to the soil without a separating membrane, the consistency of the concrete will reduce leaching with is potentially damaging to tree roots. Mature trees adjacent to the drive and ditch are in good health and show no sign of significant damage or harm as a result of these construction works.

This is a retrospective application. Removal of the new structures and associated areas of concrete would cause more ground disturbance and potential harm for tree roots and is not advised at this time.

Full details of additional tree and landscape planting along the southern end of the access drive is provided within the Tree Condition Survey & Mitigation Strategy by Duckworths Arboriculture Limited Ref: 06408/2024 (July 2024).



Sarah Duckworth
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