

Works schedule reference 1568/ SRA Alexandra Gardens

SUMMARY

This proposal is to undertake significant tree works to reduce in size two mature London planes at Alexandra Gardens as a subsidence risk abatement measure.

If you wish to make a comment about any of the works proposed, please submit them via this link: [Comment on a tree work schedule](#)¹. All unresolved objections to tree work subject to public scrutiny will be determined by the relevant Executive Councillor.

What are Officers proposing?

The proposal is to:

1. Crown reduce by 70% by crown volume 2 mature London planes (Figure 1) at Alexandra Gardens.
2. Maintain them at their reduced size on a biannual basis.

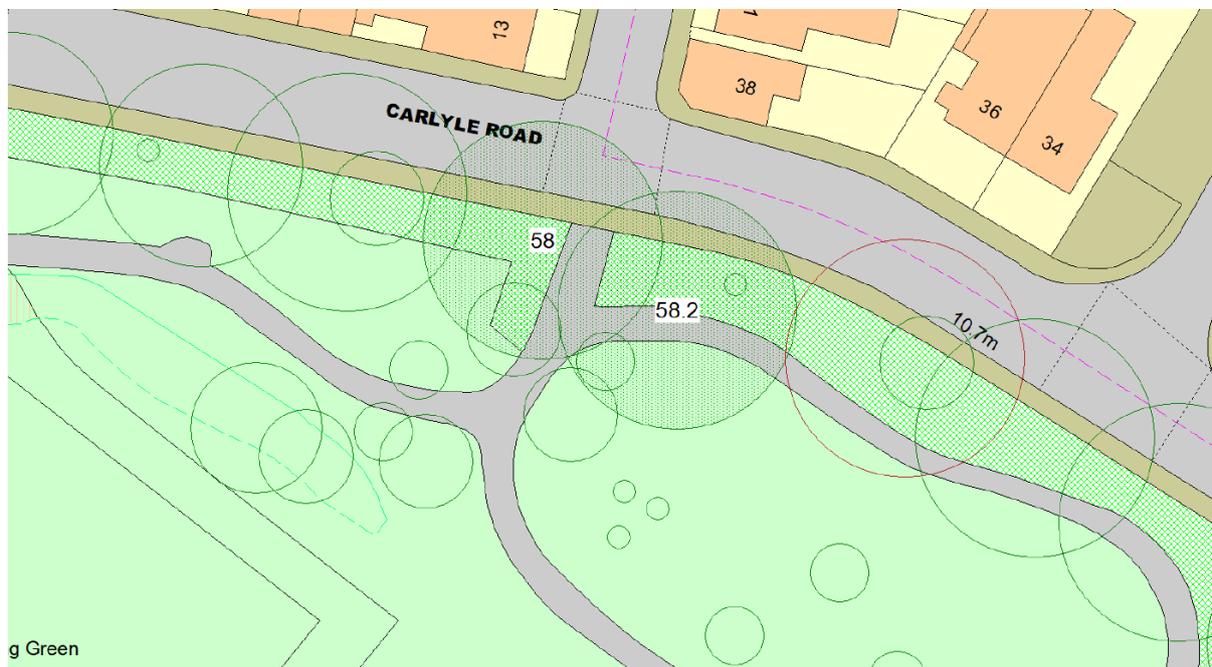


Figure 1

¹ <https://www.cambridge.gov.uk/comment-on-our-planned-tree-works>

The 70% volume reduction equates to a size reduction from 22m to 17.5m in height and 21m to 14m in diameter. Figure 2 indicates the approximate extent of the reduction. Yellow bands have been placed around the trees on-site to mark the reduction points (Figure 3)



Figure 2



Figure 3

We have negotiated with the claimant's insurers to prune T58 by the end of July 2021. T58.2 will be pruned as soon as practicable after that if the works to T58 do not significantly abate ongoing building damage.

Why are these works being proposed?

The proposal is a practicable balance between delivering the Council's duty of care to its neighbours, minimising its legal liability, and not unduly or adversely impacting the environment and amenity.

It is necessary to stop damage in the form of cracking to an adjacent residential property. The cracking is to the superstructure and results from foundation movement. This movement is caused by the underlying clay soils shrinking and swelling on a seasonal basis. Soil shrinkage is exacerbated by water abstraction from beneath the foundations by the tree(s) during the summer months and when in leaf². Reducing the size of the tree can reduce its water demand. The Council's Tree

² Information about the mechanisms involved in tree related subsidence can be found here <https://www.rhs.org.uk/advice/profile?pid=225>

Team has proposed the works following a mitigation request by the affected property owner's insurers.

The work specification is in line with recommendations made by the Horticulture LINK project 212 report *Controlling Water Use Of Trees To Alleviate Subsidence Risk*³. It was made in negotiation with the property owner's insurers, internal and external legal advice, and the current steer from Senior Managers and advice to Councillors is that paying the substantial costs involved in underpinning the property or installing a root barrier (if feasible) was not considered as an available option in the current budget.

The current specification and timescale were negotiated from an initial mitigation request, and notification of substructure repairs received last June. The mitigation request was to reduce the trees to 12m and height, and the notification informed us of the intention to seek costs.

What are the consultation and decision-making framework?

Consultation procedures for tree works and the decision-making protocols are set out in *Part 2, Section 3.2.3 (Communicating Our Tree Work Schedules and Consultation Procedures) of the Citywide Tree Strategy 2016-2026*⁴. There are three levels to how we communicate our tree works to the public:

1. **Notification** – for all matters relating to health and safety where prompt action is required. Comment is invited, but the decision is delegated at an officer level.
2. **Public scrutiny** – for all matters having a significant impact on the environment, where there is no other practicable alternative being offered. Scrutiny of the Officers' decision-making process is offered. The relevant Executive Councillor makes any final decision.
3. **Public consultation** – for all matters where there are, there are realistic alternatives to the recommended proposal. The relevant Executive Councillor makes any final decision.

The works will significantly impact the local amenity, but Officers are recommending no other proposal. Therefore, the proposal falls under **Public Scrutiny** protocols:

1. Ward Councillors will have an opportunity to comment for 10 working days before the proposal being made public.

³ [https://www.bre.co.uk/filelibrary/pdf/projects/HortLink_Project_Final_Report_\(2004\).pdf](https://www.bre.co.uk/filelibrary/pdf/projects/HortLink_Project_Final_Report_(2004).pdf)

⁴The tree strategy is in two parts and sets out the Council's policies for managing the city's trees to maximise their benefits. It was approved by the Community Services Committee on 8 October 2015 and can be downloaded here <https://www.cambridge.gov.uk/tree-strategy> .

2. After that, the public will be consulted for 10 working days.
4. If any objections received cannot be resolved by Officers, the relevant Executive Councillor would make the final decision. In reaching a final decision, the following factors will be considered by the Executive Councillor:
 - a. The amenity value of the tree(s) and the likely impact of the proposal on the area's amenity.
 - b. Whether or not the proposal is justified, regarding the reasons put forward in support/against of it.

Proposed timelines

- Ward Councillor consultation Tuesday 8th June to Tuesday 22nd June
10 working days
- Public consultation Wednesday 23rd June to Wednesday 7th
July 10 working days
- Decision-making period Thursday 8th July to Friday 23rd July
15 working days

Public consultation Q&As with Council Officers

A Tree Officer will be available at Alexandra Gardens to answer any questions you may have on the following dates and times:

- Saturday 26th June, 5-6pm.
- Wednesday 30th June, 6-7pm.
- Friday 2nd July, 3-4pm.

The location to meet will be in the park directly behind the the subject trees. Please note we will be following the Government Covid-19 guidance 'Construction and other outdoor work Guidance for people who work in or run outdoor working environments)⁵, and 2m social distancing should be observed.

What factors were considered by Officers?

Policy framework

Part 2, Section 3.2.4 (Tree related damage) of the Citywide Tree Strategy 2016-2026 sets out the level of evidence required by the Council to assess subsidence mitigation requests or claims. It identifies mitigation measures including crown

⁵ [Construction and other outdoor work - Working safely during coronavirus \(COVID-19\) - Guidance - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/construction-and-other-outdoor-work-working-safely-during-coronavirus-covid-19)

reductions and tree removals. In exceptional circumstances, root barrier or tree retention can be considered.

POLICY GM11: *To manage risk and reduce liability with regard to tree-related subsidence, the Council may choose to remove trees. Where the amenity value of the tree is high, the Council may choose to instigate repeated crown reductions or other such mitigation treatments.*

Summary of the supporting evidence

1. **Description of the damage** - Damage was first noticed in October 2018. The current damage affects rooms on the ground and the first floor. Externally there are diagonal cracks.
2. **Geological strata for the site** - Reference to the 1:625,000 scale British Geological Survey Map (solid edition) OS Tile number TLNW suggests the underlying geology to be Clay Soils. Clay soil superficial deposits are a cohesive soil characterised by their fine particle size. They are usually derived from weathering of an underlying “solid geology” clay soil such as London Clay or Oxford Clay.
3. **Measurement vertical movement** - The monitoring shows upward movement of the foundations over the winter and downward movement in the summer, consistent with root induced clay shrinkage.
4. **The sub-soil characteristics** - Site investigations and soil test results have confirmed a clay subsoil susceptible to undergoing a volumetric change concerning changes in soil moisture. Soil test results indicate desiccation.
5. **The location and identification of roots found.** - Roots were observed to the underside of the foundation and at a depth of 900mm to 2000mm below ground level and samples have been positively identified (using anatomical analysis) as Platanus (Plane).
6. **History of subsidence in the area** –a recent history of tree-related subsidence relating to the mature London planes in Alexandra gardens. A claim in 2004 resulted in underpinning, and in 2013 multiple claims resulted in multiple tree reductions.

Financial implications

The cost of building repairs without mitigating tree work, i.e. underpinning. It is estimated at 40 times tree work costs, and in excess £100k.

The cost of building repairs after mitigating tree work is estimated at 5 times the cost of tree work costs.

Before the option for a root barrier being discounted, costs were estimated at £200k+. A feasibility study was also commissioned but abandoned by the contractor

before delivery due to the impact of Covid-19 and perceived technical difficulties of investigating the installation of a root barrier in the road.

Legal implications

The owner's insurers have already indicated they will claim damages and will move to underpin if we fail to mitigate the risk. A liability claim can be made under both the torts of nuisance and negligence, depending on the circumstances. As it would be made under civil law, the test would be that of a balance of probabilities (i.e., >50% sure) that the tree(s) were contributing to the damage. The conditions needed to make a claim are:

1. Careless conduct (or a breach of the duty of care).
2. A causal connection between the tree(s) and the damage.
3. Was the damage foreseeable?

Officers have formed a view that failure to act would risk a successful claim being made against the Council.

Environmental impact

1. **Large stature trees (or trees over 20m in height).** The proposal will result in a crown reduction of 2 mature London planes and, therefore, loss of canopy. Trees over 20m in height form a small (~2%) part of the urban forest and contribute disproportionately to tree canopy (~10%). This is a small but valuable sub-population of the urban forest, with a considerable investment in time (100 years plus) invested. Crown retrenchment is a natural process for many tree species as they get older, affording them a new lease of life because of their smaller dimensions. It occurs as trees die back and shed their outer branches. Managed crown reductions mimic this natural process for artificial rather than natural reasons.
2. **Ecosystem service delivery.** The works will result in some loss of ecosystem services, for example, reduced shading and stormwater attenuation. However, given the relative abundance of mature trees in the immediate vicinity, this will be minimal. London planes have little biodiversity value; again, the impact will be minimal. Overall, the impact on ecosystem services delivery across the urban forest is negligible.
3. **Tree health.** As with any heavy pruning operation, there is some risk to the health of the trees, which may shorten the trees life expectancy, but these are unquantifiable. In general, London planes tolerate heavy reduction, and many examples exist in Cambridge (e.g. Alexandra Gardens, Maids Causeway and Newmarket Road). Conversely, and as mentioned above, heavy pruning can also extend the life expectancy of a tree by reducing its demand for resources and making it less susceptible to storm damage.

Amenity impact

The impact on the social amenity of the trees is significant. It will change them from their natural form to a more architectural form or structural pollard (figure 4). This change of form will be exacerbated by their presence in and contribution to a row of similar London plane trees that make up an excellent partial avenue of trees. These trees are all around 120 years in age and probably clonal in stock.

This significant loss of amenity is likely to cause high levels of concern in the community (as it did in 2013 when similar treatment was proposed and carried to the London planes of the opposite side of the park (figure 4). The loss of amenity is unfortunate and can only be mitigated by a change in perspective. In an ideal world, these trees would be managed as a single unit for as long as is reasonably practicable. There will inevitably come a time when individual trees in the row would have to be managed for safety reasons. A process of managed decline would then occur until a decision on the future of the remaining trees in the row would be made. This proposal can be seen as bringing forward, for social and financial reasons, this process.

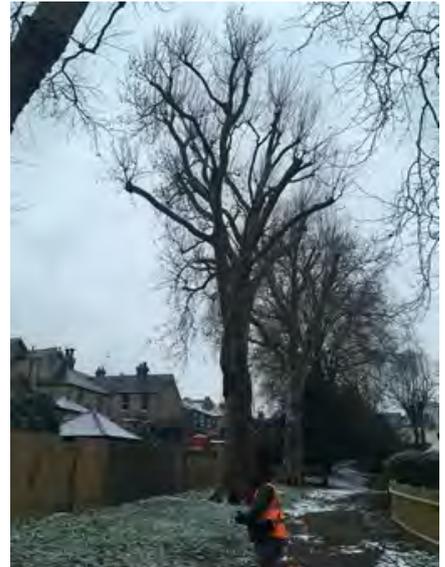


Figure 4

Conclusion

Based on the technical reports supplied by the property owner's insurers and our site assessment of this information, we conclude the damage is consistent with shrinkage of the clay subsoil related to moisture abstraction by the Council's vegetation. As such, the Council is at risk of being liable for costs to repair and stabilise the building.

The proposal is a practicable balance between delivering the Council's duty of care to its neighbours, minimising its legal liability, and not unduly or adversely impacting the environment and amenity.

Author: Matthew Magrath, Senior Arboricultural Officer.

Reviewed by: Alistair Wilson, Development Manager; Stephen Reid, Senior Planning Lawyer.

Date: 7/6/21.

Contact: matthew.magrath@cambridge.gov.uk