Property Risk Inspection
LIMITED

Subsidence of Low-Rise Buildings
A Property Risk Case Study

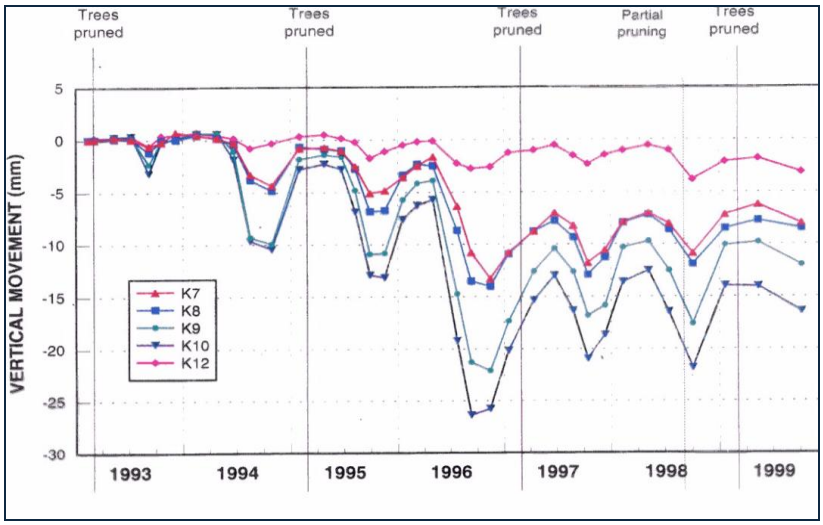
Pruning as a remedy to subsidence and recurrence of claim

There has been extensive research and reports relating to the efficacy of pruning as a remedy to tree related subsidence events. However there has been only limited real world reporting on field impacts and results from crown reduction and subsequent recurrence damage to low rise buildings.

One of the key papers that investigated whether pruning could effectively manage ground movements as a theoretical concept was produced by Lawson in his 2000 paper for the Institute of Biology Subsidence of low rise buildings and the management of trees as a remedy (propertyriskinspection.co.uk) and this was followed up by O'Callaghan and Kelly in a 2005 paper: 151683 113..129 (propertyriskinspection.co.uk).

Both these publications cast doubt on the scientific basis for pruning as an effective remedy to subsidence damage in buildings.

This followed on from monitoring carried out by the Building Research Establishment (BRE unpublished) on behalf of London Boroughs which showed that even the heaviest repeat pruning could not adequately prevent ongoing movements in its Queens Park Estate long term monitoring project in which pruning had only the most short-lived impacts on movement.



1993 – 1999 BRE Queens Park Estate Monitoring

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Version control:
20241001 Subs Management Case Study V1
Pruning and Recurrence of Damage

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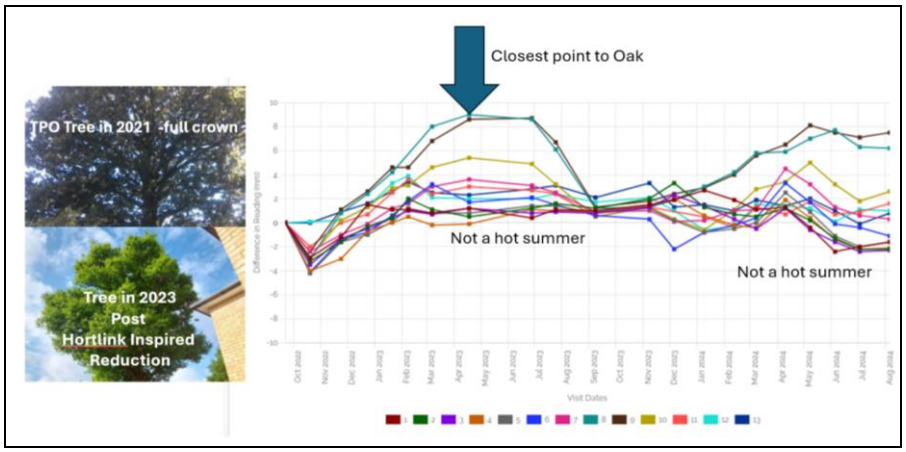
Pruning as a remedy to subsidence and recurrence of claim – case studies

The BRE then published a summary of further research (IP7 06) which stated:

1. For consistent soil moisture conservation, severe crown reduction of 70–90% of crown volume would have to be applied. Reduction of up to 50% crown volume is not always effective for decreasing soil drying.
2. To ensure a continued decrease in canopy leaf area and to maximise the period of soil moisture conservation, crown reductions should be repeated on a regular managed cycle with an interval based on monitoring regrowth.
3. Crown thinning may be aesthetically desirable but is not an effective method to control soil drying by trees.

There is now increasing evidence that pruning is not the answer and recurrence of claim post heavy reductions is commonplace.

In the example below a large Oak at even 20m from the area of damage was significantly crown reduced. It is obvious that monitored movements on these heavy clay soils indicated almost no impact on the damage and ongoing nature of the event.



Pruning trees might seem a sensible and proportionate response to a request to fell important trees as it maintains the main stem and scaffolds in place.

However, Councils must appreciate that to be effective then at **70-90%** canopy loss it is in breach of the British Standard for Tree Work and a less severe reduction will invariably leave the homeowner with ongoing movement, distress and cost and the Authority at risk of an underpinning scheme that puts the public purse at risk.

Tree removal and replacement by conditional replanting is an effective response to allow homeowners to have their home and lives returned to normal and is a solution guaranteeing the ongoing continuity of tree cover at no risk to its own financial resources.

We would also make clear that PRI also supplemented all tree removal with its international efforts of new tree planting to further minimise impacts on a global scale. [Property Risk Inspection Limited | Ecologi]