

Original
Report
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Arboricultural Report

Title: Tree Inspection, Condition and Management
Recommendations Report re the Sycamore in the Rear
Garden of 10 Rhiwlas, Waunceirch, Neath, SA10 7RB.

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Arboricultural Report

Tree Inspection, Condition and Management Recommendations **Report re the Sycamore in the Rear Garden of 10 Rhiwlas,** **Waunceirch, Neath, SA10 7RB.**

References:

- A. *E mail reply dated 14/06/20 to GCA quotation dated 14/06/20.*
B. *BS3998:2010 Tree work – Recommendations.*

1 Instructions

1.1 I have been instructed in writing (Ref A) by Mr Paul Harris with regard to arboricultural concerns regarding the condition and safety of the large mature sycamore which is at the end of the rear garden of his home in Neath. The tree displays unbalanced growth and has dropped dead branching onto the rear garden below. Accordingly, I have been instructed by the property owner to inspect the tree and compile a tree condition and management report on his behalf as follows:

1.1.1 Visual ground based and climbing assessment of the sycamore concerned.

1.1.2 Individual hazard assessment, recording and risk management recommendations for tree defect(s) which pose a threat to the property and to the adjacent bridleway, and neighbouring property.

1.1.3 Plot tree on an Ordnance Survey base map.

2 Introduction

2.1 Background

I am an experienced Certified Arboricultural Technician qualified to Level 6 in Arboriculture (ABC Awards). I have gained the Technicians Certificate of the Arboricultural Association at distinction level and I also hold the Royal Forestry Society Certificate in Arboriculture again at distinction level. Furthermore, I am qualified in Professional Tree Inspection (Lantra), trained in practical visual tree assessment (VTA) and I am a registered licence holder for Quantified Tree Risk Assessment (QTRA). Lastly, I hold current full professional memberships of the Arboricultural Association (including the Utility Arboriculture Group), the Royal Forestry Society and the Forestry Industry Safety Accord (FISA).

2.2 Limitations

2.2.1 My tree inspection and hazard assessment was conducted from ground level and by climbing the tree using a rope and harness and using binoculars where necessary.

2.2.2 No soil / decay samples were taken.

2.2.3 No use was made of decay detection equipment other than a IML metal probe supported by tape and diameter tape measures.

2.2.4 The presence of any protected wildlife in the trees concerned remains the responsibility of the landowner.

2.2.5 Enquiries have not been made with the Local Planning Authority (LPA), Neath Port Talbot County Borough Council, to ascertain whether or not the tree concerned is the subject of a Tree Preservation Order (TPO) or lies within a Conservation Area. Anecdotal evidence suggests that the site does not lie within a designated Conservation Area, but it is believed that the tree is protected by a designation under a current TPO which was made by Neath Port Talbot County Borough Council.

2.2.6 Trees and shrubs are dynamic living organisms whose health and condition can change rapidly. The health, condition and safety of trees in particular should be checked on a regular basis, preferably annually, in order to exercise a duty of care. Accordingly, the validity period of my recommendations relating to tree condition is 12 months from the date of inspection.

2.3 Site Location

2.3.1 Rhiwlas is a residential development of modern detached houses laid out in a cul-de-sac in the Waunceirch area of the town of Neath. The houses were built in the mid 1990's and on the western side abut an old coal tramway which runs downhill from north to south. The tramway is now a single track metalled bridleway without regular vehicle access which is a popular route for local walkers and cyclists.

2.3.2 Number 10 lies on the western side of Rhiwlas and shares a continuous rear boundary with the old tramway. The sycamore in question is growing out of a holly hedgerow growing on top of the bank at the western end of the small rear garden which measures 8m deep by 12m across and dominates the old tramway and the rear of the house.

2.3.4 The current site layout is shown in the Tree Inspection Map (pdf) which is appended to this report.

2.4 Tree Cover

2.4.1 Tree cover in the locality comprises mainly established mature broadleaved and coniferous stock which is growing out of lapsed hedgerows on earth banks lining both sides of the old tramway. Dominant species within this range include mature ash, sycamore and oak with an understorey of hazel, hawthorn, holly and privet.

2.4.2 The mature sycamore in question is growing on top of the earth bank out of the managed holly hedging which is just outside of the rear wooden boundary fence. Top of the bank is about 1.3m above the tarmac bridleway wearing surface.

3. Tree Inspection

3.1 Site Visit

3.1.1 I conducted an accompanied site visit on 24th June 2020. All my observations and detailed investigations were initially from ground level using binoculars where necessary, a Thor 710 Nylon Hammer and an IML metal probe, whilst all dimensions were measured using a Trupulse 360R laser rangefinder, diameter tape and tape measure. The weather at the time of inspection was clear with good visibility and light winds. My measurements and findings are recorded in the Tree Inspection Schedule (pdf) which is appended to this report

3.1.2 Tree position and relevant data were fixed, plotted and recorded on an Ordnance Survey base map using a Trimble Yuma 2 enhanced GPS rugged tablet computer and I affixed a numbered metal tag (1998) to the tree for clear identification purposes.

3.1.3 A climbing inspection of the tree was also conducted in order to examine the architecture and condition of the main forks and branching in the lower, mid and upper crown in order to identify any defects in the structural or physiological condition of the tree not visible from ground level.

3.2 Tree Defects

3.2.1 For the purposes of a tree hazard assessment, only tree(s) with a diameter greater than 150mm at 1.3m above ground level (dbh @ 1.3m agl) are considered,

i.e. those from the results of current arboricultural research (US Tree Failure Database) with a size to cause potential harm to persons or property.

3.2.2 The presence of deadwood as a tree defect is a recurring theme. Deadwood is a valuable ecological resource and forms the base of the woodland food chain. As such it is desirable to retain it on standing trees where possible subject to safety constraints in areas of high target value in terms of public occupation levels and property value. Accordingly, I differentiate within my findings to minor deadwood which is of a size (<50mm dia) or disposition unlikely to cause significant injury or damage to a target beneath it and major deadwood which is of a size (>50mm dia) or disposition likely to cause significant injury or damage to a target beneath it.

3.3 Tree Hazard Management

3.3.1 Potential tree hazards from defect(s) identified during the inspection have been evaluated using the Tree Hazard Risk Evaluation and Treatment System (THREATS) which is an established arboricultural method for identifying, recording and managing hazards from trees (FLAC UK Ltd June 2010).

3.3.2 Central to the THREATS system is the risk assessment arising from the relationship between the likelihood of tree failure (or part thereof), target value and occupancy levels and the impact score from the size and weight of the tree (or part thereof). Target values for the site have been calculated using the current / historic land use and occupancy levels. Therefore, if land use and occupancy levels around this tree changes in the future, then the hazards and concomitant risks from the tree will need to be revisited and tree risk management revised.

3.4 Findings

3.4.1 I visually inspected the tree in question and include its current relevant characteristics and dimension (including radial tree spread) in the Tree Inspection Schedule (pdf) which is appended to this report. However, the main details are summarised in Table 1 below:

Table 1: Tree Data

Tree Tag Number	1998
Botanical Name	Acer pseudoplatanus
Common Name	Sycamore
Height	19m
Stem Diameter (at 1.3 m agl)*	445mm
Crown Spread (radius from centre of stems)	North 4m East 5m South 5m West 4m

*agl = above ground level

3.4.2 Roots and Surrounding Ground

3.4.2.1 The base of the tree is situated on top of an earth bank 1.3m above the tarmac wearing surface of the old tramway beneath it. An examination

of the bank from the tramway showed an exposed lateral rooting pattern with lateral roots running off along the bank in both directions above the tramway and a taproot running into the base of the bank below the tramway. This visual, exposed rooting appeared functional and undamaged.

3.4.2.2 Base and Root Plate

3.4.2.2.1 The buttress and structural roots appeared functional to examination with the probe and acoustic sounding with the nylon hammer and there is no evidence of soil movement, buckling or displacement around the tree root plate which would indicate that it is becoming unstable.

3.4.2.2.2 A basal cavity on the eastern flank of the stem is evident from the historic removal of a primary limb at ground level. The cavity is open and measures 60cm high, 30cm wide and 60cm deep where it runs through the base of the tree and into the bank. The walls of the cavity are made up of rolls of young sapwood and there appears to be no active decay within it.

3.4.3 Main Stem

3.4.3.1 The lower stem above the cavity appears functional to sounding with the nylon hammer.

3.4.3.2 The main stem rises up uniformly from the top of the bank through the holly hedge as a single main leader into the top of the tree with smaller lateral branching forking off this rising stem from around 6m agl.

3.4.3.3 Invasive climbing ivy is currently growing onto and up the main stem from the bank to a height of around 1.5m agl.

3.4.4 Primary Branches

3.4.4.1 Primary branching commences at around 6m agl from the vertical main stem with an open branch architecture which is appropriate to species and forms the tree canopy.

3.4.4.2 There is historic evidence of crown lifting and reduction operations which have lifted growth off and away from the back of the house. Old pruning wounds from this activity appear to have occluded satisfactorily.

3.4.5 Secondary Branches and Foliage

3.4.5.1 The climbing inspection revealed widespread grey squirrel (*Sciurus carolinensis*) damage to the canopy branches caused by bark gnawing and stripping from the upper portions of second, third and fourth order branching. In many cases the damage is almost completely encircling the branch concerned. This pattern of damage is occurring throughout the lower, mid and upper crown and has contributed markedly to the build-up of deadwood throughout the tree but particularly over the rear gardens of number 10 and 11.

3.4.5.2 A continuous pattern of dead or dying branching and broken branch stubs commences and continues from the lower crown upwards. Extensive grey squirrel damage is evident with multiple feeding and stripping wounds across the upper surfaces of crown branching. The wounds from this gnawing do not appear to have occluded satisfactorily and some branches have been more or less ring-barked close to the main vertical limbs.

3.4.5.2 Minor branching demonstrates unbalanced lateral extension growth into open space to the south and east whilst it is less dense to the north and west. Apical dieback caused by grey squirrel damage is causing the build-up of deadwood and branch drop in high winds. An examination of recent fallen branches below the tree found gnawing and stripping marks from grey squirrel feeding and browsing.

3.4.5.3 Overall, the site appears to be infested with grey squirrels. Whilst climbing this tree and an ash in a neighbouring garden, 3 separate grey squirrels were observed in the canopies of neighbouring trees along the old tramway.

4. Conclusions

4.1 Amenity Value

This sycamore is, in my opinion, a reasonable landscape tree, offering amenity value to the local area and a contribution to the history, landscape and visual amenity of the neighbourhood. The size and life stage of this tree indicates to me that it is around 50 years old which places it within the safe useful life expectancy (SULE – Helliwell) for the species in a garden or parkland environment and as such the tree should be retained and managed for the benefit of wildlife, current and future residents and visitors alike.

4.2 Tree Hazard Assessment

4.2.1 The development of physiological defects in this tree constitutes a hazard to the site and its environs which requires remediation.

4.2.2 The size, location and disposition of this sycamore pose a moderate foreseeable risk to property, residents, visitors, and passersby. Therefore, tree risk management is required for the site in order to maintain the balance of safety with tree value and to operate to a predetermined limit of reasonable or acceptable risk for the owners of the property.

4.2.3 The current unbalanced and over-extended crown over residential property is due mainly to the effects of phototropism with branch growth favouring open space over the gardens to the east and south rather than the congested area above and over the old tramway where the competing adjacent tree canopies are at thicket stage.

4.3 Tree Defects

4.3.1 Stem Decay

The decay cavity in the base on the eastern side of the main stem is not considered to be a significant defect. Active decay in the basal cavity is not in evidence and reactive growth around the periphery indicates that the cavity and decay therein has been contained without significant impact on the health and stability of the tree.

4.3.2 Pests

4.3.2.1 Ivy

The proliferation of invasive climbing ivy into the crown of the tree to the stage of infestation increases the wind sail area of each individual tree making it more likely to fail in high winds and conceals structural defects from identification.

4.3.2.2 Grey Squirrels

Grey squirrel damage across the canopy branching of this sycamore is latent. The grey squirrel is regarded as an invasive non-native species and is included under Schedule 9 of the Wildlife and Countryside Act (WCA) 1981 (as amended). Grey squirrels are also listed in the International Union for Conservation of Nature (IUCN) international list of 100 worst invasive non-native species. This highlights the damage that grey squirrels cause to our native flora and fauna; a problem severe enough to be recognised at a level of global significance. As such, the grey squirrel is regarded as a pest species and is afforded no protection under the WCA. Under Schedule 9 of the WCA, it is illegal to release a grey squirrel into the wild, or allow one to escape. Damage by grey squirrels to the young branches of mainly deciduous trees, (sycamore, oak, beech, ash & sweet chestnut) can lead to ring barking and the death of distal parts of damaged branches causing crown dieback and the death of younger stock which is unable to recover following catastrophic loss of photosynthetic material. Up to 50% of young woodland trees aged 10 – 40 years can be killed as a result. Squirrel damage along the rear boundary of the site is particularly prevalent as sycamore, a staple favourite of the grey, is a dominant species.

4.3.2.3 Apical dieback appears to be caused in response to stress created by the extensive grey squirrel damage and depletion of energy reserves from the loss of dead and damaged branching.

4.4 Overall Assessment

4.4.1 A reasonable balance has to be struck for the tree owners between managing this tree for the safety of their house and rear garden, the old tramway and adjacent property and maintaining the amenity, conservation and environmental benefits that it provides. The evaluation of what is reasonable should be based upon a balance between tree benefits and risk in order to discharge the legal duty of care held by the tree owners.

4.4.2 Remedial tree work should be considered to re-balance the crown in safe proportions to remedy the disjointed and hazardous effects of historic, branch loss, un-balanced regrowth, phototropism and latent grey squirrel damage. Here pruning work should shorten end-weighted and overextended lateral branching in order to leave it less likely to snap or undergo torsional failure in high winds and improve light and vision levels through and beneath the tree. Crown reduction work in this instance should proceed with a light touch to preserve the attractive form of the tree whilst reducing safety concerns and potential branch nuisance problems.

5. Recommendations

5.1 Present Requirements.

- 5.1.1** The works required to establish acceptable levels of risk and arboricultural management for the trees assessed are listed in the TreeMinder Inspection Schedule which is appended to this report. However, they can be summarized in Table 2 below:

Table 2: Schedule of Tree Works

Location	Work Description	Time scale
Lower, Mid & Upper Crown	Reduce overextended and end-weighted lateral branching E & S by 1-2m to suitable live growth points to achieve a safe and balanced radial spread of around 4m.	Within 6 months
Lower, Mid & Upper Crown	Remove squirrel damage related deadwood to suitable live growth points in order to prevent branch loss on to rear gardens and tramway below.	Within 6 months

- 5.1.2** Current tree hazards to the site and to neighbouring property will be mitigated by the works listed above. However, this tree will require cyclical pruning works (a pruning cycle of 3-5 years is appropriate to the species) in the medium to longer term – particularly to control the build-up of squirrel damaged dead branching.

- 5.1.3** The grey squirrel population around the site should be controlled at a level of 5 per hectare to prevent further extensive tree damage. Authorised methods of control are by trapping and shooting only. Details of grey squirrel control programmes are available from Natural Resources Wales (NRW) and professional woodland bodies such as the Royal Forestry Society and the Woodland Trust.

- 5.1.4** The tree should have invasive climbing ivy severed from its stem. This entails cutting an ivy free belt of 1m width around the stem at the base of the tree in order to kill off any aerial parts of the plant and then to prune annually any visual re-growth into the belt with secateurs. This important tree maintenance work will improve the quality, amenity value, inspection and safety of the tree.

5.2 Implementation of Works.

All tree work should be carried out to current tree industry standards (Ref B) and best practice by suitably qualified, experienced and insured arborists. It should also be noted that as the tree overhang a public highway, the works should also conform to the provisions of the Approved Code of Practice (ACOP) for Safety at Street Works and Road Works (as amended in September 2014) in accordance with the New Roads and Street Works Act 1991.

5.3 Statutory Wildlife Obligations.

The Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000 and the Conservation of Habitats and Species Regulations 2010 provides statutory protection to birds, bats and other species that inhabit trees. All tree work operations are covered by these provisions and advice from an ecologist must be obtained before undertaking any works that might constitute an offence.

5.4 Future Considerations.

In order to manage tree risk at an acceptable level this hazard assessment has identified, prioritised and informed safety works to a defective tree according to level of risk. The condition and level of risk associated with the tree at the site will also inform the re-inspection interval and also the level of inspection required:

5.4.1.1 Informal observations by site owner(s) prior to high occupation periods, planned outdoor activities or after severe weather events.

5.4.1.2 Formal inspections performed by a suitably qualified arboriculturist which are not incidental to other activities.

5.4.1.3 Detailed inspections performed by a suitably qualified arboriculturist in order to inform management decisions on high value trees with defect(s) in high use areas which are of priority concern.

5.4.2 The tree should be inspected at regular intervals, preferably annually, by a qualified arboriculturist in order to manage and retain it in a safe condition. A proactive tree inspection should also take place after severe weather events, particularly when wind speeds have exceeded Force 8 (Gale) on the Beaufort Scale. Furthermore, if land use and occupancy levels around the site changes in the future, then the hazards and concomitant risks from the tree will need to be revisited and the tree risk management plan revised. Regular maintenance and routine inspection will place the tree under sound arboricultural management.

6 Other Considerations

6.1 Re-Inspection

It is recommended that this sycamore is re-inspected in 12 months to assess the response of the tree to the pruning recommended and also to the recent causes of stress (grey squirrel damage) to it and to assess the spread and impact of any further apical dieback.

6.2 Deadwood Policy

Deadwood is a valuable ecological resource and forms the base of the woodland food chain. As such it is desirable to retain it on standing trees where possible subject to safety constraints in areas of high target value in terms of public occupation levels and property value. A policy for the management of deadwood should be included in the tree maintenance strategy for the site with the following distinction:

6.2.1 Retain

Minor deadwood which is of a size (<50mm dia) or disposition unlikely to cause significant injury or damage to a target beneath it.

6.2.2 Remove

Major deadwood which is of a size (>50mm dia) or disposition likely to cause significant injury or damage to a target beneath it.

6.3 Trees Subject to Statutory Controls.

As this tree is protected by a designation under a current TPO, it will be necessary to consult the LPA (Neath Port Talbot County Borough Council) before any tree works other than certain exemptions can be carried out. The works specified above are, in my professional opinion, necessary for the safe and reasonable management of the tree and should be acceptable to the Council. However, site owners should appreciate that they may take an alternative point of view and have the option to take different action within current planning legislation.



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29/06/2020

Appendices:

1. **Glossary of Terms.**
2. **Tree Inspection Map (pdf).**
3. **Tree Inspection Schedule (pdf).**

Appendix 1

Tree Inspection Glossary of Terms

Tree Tag No.

The tree tag number relates to the metal tree tag number affixed to the stem of the tree.

Height (m)

Branch spread (m)

The average radial crown spread measured in metres from the centre of the stem.

Glossary of Terms

A definition of arboricultural terms used in this report as follows:

Crown. That part of a tree which is composed of the branches and foliage

Crown lifting. An arboricultural operation which involves the removal of lower branches to a given height above ground level to achieve safe passage of vehicles / pedestrians or clear lines of sight / daylight. It is achieved either by the removal of whole branches, or by the removal of only those parts which extend below the desired clear height.

Crown reduction. Operation that results in an overall reduction in the height and/or spread of the crown by means of a general shortening of twigs and/or branches to strong growth points, (natural targets), whilst retaining the main framework of the crown.

Phototropism. The growth of an organism in response to a light stimulus. Phototropism is most often observed in plants, but can also occur in other organisms such as fungi. The cells on the plant that are farthest from the light have a chemical called auxin that reacts when phototropism occurs. This reactive growth towards a light source is called positive phototropism, while growth away from light is called negative phototropism (skototropism).

Stem. Principal above ground structural component of a tree that supports the branches (trunk).

Windblow/Windthrow. The fall of a tree in a high wind, with the breakage of outer roots, so that the tree is partially or fully uprooted. This can be caused by the reduction and/or felling of adjacent trees which lessens companion shelter and support and increases damaging turbulent air flow within a stand.

Windfirm. A tree displaying no elevated risk of windthrow.