Pantrhiwgoch Farm
Michealston-y-Fedw
Cardiff CF3 6XW

T:0800 298 3686
info@tr33.co.uk
www.tr33.co.uk

TR33 ENVIRONMENTS

ARBORICULTURAL ASSESSMENT - 8 COED PENGAM

Location:	**land to the southeast of 8 Coad Pengam, Lisvane, Cardiff CF14 0AU**		
Client:	Michael Okonkwo	**Reference:**	S240404.1
Author:	John Mitchener	**Report Date:**	16 April 2024
Surveyor:	John Mitchener	**Survey Date:**	28 March 2024

TERMS OF REFERENCE

TR33 Environments were instructed by Michael Okonkwo to undertake and arboricultural assessment of two hybrid poplar trees on land to the southeast of 8 Coad Pengam, Lisvane, Cardiff CF14 0AU (hereafter referred to as 'the Site').

The purpose of the assessment is to advise on the discharge of the duty of care to manage the risk from trees. This duty arises in civil law and includes a requirement for the tree owner to take reasonable care to avoid acts or omissions that cause a reasonably foreseeable risk of injury to persons or property.

Additionally, the assessment is to provide comment on a proposal to reduce both trees in height. The extent of the proposed height reduction is shown in **Figure 2**.

ASSESSMENT METHODOLOGY

Two hybrid poplar trees were assessed. These trees are hereafter referred to as T1 and T2. The location of the trees is shown in **Figure 1: Tree Locations**.

The assessment of the two trees involved a visual inspection looking for mechanical and other external signs of structural weakness, disease or poor physiological health. This methodology was applied to all aspects of each tree including its overall shape, crown, stem, roots and the surrounding environment. Access to both trees was adequate and there were no restrictions on the completion of the assessment.

Limitations and assumptions which apply to the assessment are detailed in **Appendix B: Limitations and Assumptions**. A glossary of technical terms which may be of use is provided in **Appendix C: Glossary of Terms**.

Figure 1: Tree Locations

FINDINGS

Location and estimated dimensions

Two hybrid poplar trees were assessed. Both trees are located immediately beyond the southeastern boundary of 8 Coed Pengam and are within the grounds of 5 Portland Place, Lisvane CF14 0EQ. Both trees are mature in age, have estimated heights of 22m, average crown radii of 8m and stem diameters in excess of 600mm.

Background information and desk-based assessment

Mechanical characteristics

Reference to published material relating to the mechanical characteristics of poplar trees[1] describes them as having wood of low density and the ability to reach great size. This combination of

[1] Lonsdale, D. 2006. *Principles of Tree Hazard Assessment and Management*. London: Department for Communities and Local Government

characteristics means that they are often subject to the breakage of tips and branches during high winds. They are also described as being subject to twig abscission, which can be heavy, and could therefore be a nuisance in built-up areas.

Quality and value

Number 8 Coed Pengam is a newly constructed residential property. Consent for its construction was provided as part of planning application with tree survey data provided under application number 21/01777/MJR. The tree survey data is dated June 2021 and includes reference to both T1 and T2.

These trees, identified as item 35 in the survey schedule, are listed as being of low-quality using the British Standard BS 5837:2012 classification system. This system defines a low-quality tree as one which is "*present in groups or woodlands, but without this conferring on them significantly greater collective landscape value, and/or trees offering low or only temporary/transient landscape benefits*."

Documents made available as part of planning application 21/01777/MJR do not include anything which suggests that Cardiff Council objected to this assessment.

Statutory protection

Reference to the Cardiff Council website shows that one of the two poplars is covered by Tree Preservation Order "City and County of Cardiff (Portland Place Area, Lisvane), 2009". This Tree Preservation Order was made in excess of 14 years ago and it is unclear why only one of two trees was considered worthy of statutory protection.

Field Survey

Poplar tree T1 has a stem which bifurcates at a height of 1m above ground level. Beyond this point the tree comprises a dominant stem to the southeast and a sub-dominate stem to the northwest. The junction between the two stems shows evidence of bark inclusion.

Bark inclusion occurs in instances where bark becomes ingrown into the stem junction and prevents the stems from forming a strong union. Stem junctions with bark inclusions are weakened and more prone to failure. This is evident in tree T1 where reaction growth around the junction between the dominant and sub-dominant stem is indicative of abnormal stress and movement.

Poplar tree T2 arises from a single stem but is positioned close to a block-paved driveway to the southeast. The tree is so close that its buttress roots have engulfed the kerb of the driveway. This growth habit is likely to be unsustainable over the longer-term as not only could it prevent buttress root development but may also cause damage to, and prevent the repair of, the block-paved driveway.

It is probable that poplar tree T2 is covered by Tree Preservation Order "City and County of Cardiff (Portland Place Area, Lisvane), 2009". This would need to be confirmed by Cardiff Council.

Trees T1 and T2 were both risk assessed to determine whether they present an unacceptable threat to persons or property. This is relevant given the substantive change in land-use which has recently occurred to the northwest of the trees.

Notwithstanding the propensity for this species of tree to shed twigs and branches, the level of risk associated with tree T1 and T2 is acceptable. This means that tree work is not required for safety reasons alone.

Photographs of trees T1 and T2 are provided in **Annex A: Photographs**.

DISCUSSION

Hybrid poplar trees are generally unsuitable for urban locations. This is because they can achieve significant stature and also have a propensity to drop limbs and other detritus.

Furthermore, as a fast growing, short-lived species with a non-durable heartwood they are readily colonised by wood decaying fungi. This predisposes poplar trees to a high/very-high risk of decay related failure making them a challenge to manage in areas of moderate or high land-use. Poplar trees are unlikely to be retained for their full lifecycle in such situations as concerns over safety often dictate that they are removed.

It is proposed that trees T1 and T2 are subject to a considerable reduction in height the extent of which is shown in **Figure 2**. The purpose of this height reduction is to eliminate the encroachment of branches into the rear garden of 8 Coed Pengam, to minimise shading of the property, minimise leaf fall into the property and improve safety for users of the rear garden. It is understood that this height reduction has been agreed in principle with the owner of the trees.

Figure 2: Illustration of proposed height reduction to trees T1 and T2

It can be confirmed that the proposed height reduction will address the reasons put forward in support of the work. This is because the majority of each trees' crown will be removed including branches and leaf bearing twigs. Notwithstanding, both trees are likely to re-grow following completion of the proposed work and for the perceived benefits to be retained it will be necessary for any re-growth to be regularly removed. This will most likely require repeat pruning on a cyclical basis every 3-5 years.

In addition, both trees would require regular inspections to check for, and monitor, any internal wood decay which may arise. These inspections, to be conducted by a competent arboriculturist, may be necessary every 2-5 years.

One of the trees, potentially tree T2, is covered by a Tree Preservation Order (TPO). The purpose of a TPO is to protect trees which make a significant impact on their local surroundings.[2]. A reduction in the height of tree T2 would have some adverse impact in terms of public amenity. However, this would not be significant for the following reasons:

- The primary public amenity value of tree T2 arises from views from private residences on Coed Pengam, Portland Place and Lisvane Road. Public visibility from publicly accessible viewpoint (i.e., roads and footways) is currently limited (see **Photograph 4**) meaning that effects of a height reduction would not have a substantial adverse impact on the wider landscape.
- Tree T1 is not protected by a TPO, and its felling is not subject to statutory control. Were tree T1 to be felled then, because of the cohesive nature of two tree's crowns, the public amenity value of tree T2 would be substantially reduced, potentially to the point where no longer qualifies for inclusion within the TPO.
- Should tree T1 be felled and tree T2 not pruned as specified, then tree T2 will be subject to altered exposure to wind and other weather events. Were this to occur then the risk of tree breakage and failure would be increased, and safety related pruning would almost certainly be required. This work would likely be approved by Cardiff Council on the basis that would be in the interests of good arboricultural management and also required to ensure public safety.

RECOMMENDATIONS

In the event that the proposed height reduction is undertaken to trees T1 and T2 we would make the following recommendations:

- The formal consent of Cardiff Council must be obtained prior to undertaking work to any tree covered by a TPO. This is likely to apply to tree T2 but must be confirmed by the Council.
- Following completion of the proposed work both trees must be cyclically pruned and also regularly inspected by a competent arboriculturist. This is necessary to ensure that any re-growth does get to the size where it becomes hazardous and also as a means of assessing the overall safety of the trees,

  An appropriate cycle of pruning and inspection cannot be prescriptively defined at this stage as the response of the trees to the recommended pruning work remains unknown.

  On this basis it is further recommended that the services of a competent arboriculturist be secured, and an initial inspection of both trees undertaken within a period not exceeding three years from completion of the work. The purpose of the inspection shall be to advise on the need for ongoing pruning and the potential frequency of further assessment.

[2] Welsh Government, 2013. *Protected Trees* [Online] Available at: https://www.gov.wales/sites/default/files/publications/2018-09/protected-trees-a-guide-to-tree-preservation-procedures.pdf

ANNEX A – PHOTOGRAPHS

Photograph 1: Trees T1 (right) and T2 (left)

Photograph 2: Base of tree T1 showing include stem junction

Photograph 3: Base of tree T2 showing buttress roots engulfing paved driveway

Photograph 4: Trees T1 & T2 (ringed red) viewed from Lisvane Road

ANNEX B: LIMITATIONS

This report is subject to the following limitations.

VALIDITY PERIOD

Trees are biological entities which may be affected by a wide range of biotic and abiotic factors. Their structural and physiological condition can therefore change substantially over a limited period.

The recommendations made in this report do not take account of the effects of extremes of climate, vandalism, or accident, whether physical, chemical or fire. TR33 Environments cannot therefore accept any liability in connection with these factors, nor where prescribed work is not conducted in a correct and professional manner in accordance with current good practice. The authority of this report ceases after 12 months from the date of the survey or when any site conditions change, or pruning or other works unspecified in the report are conducted to, or affecting, trees within the Site, whichever is the sooner.

SITE OCCUPANCY

Unless otherwise stated, site occupancy is defined by the surveyor based upon observations made at the time of the survey. Therefore, it may not account for moveable or transitory targets the presence of which cannot be reasonably foreseen.

SEASONALITY

Whilst arboricultural surveys are not seasonally limited it is the case that certain pests and diseases may only be evident at specific times of the year.

Seasonally apparent pests and diseases include certain wood decaying fungi such as the Giant Polypore (*Meripilus giganteus*) where fruiting bodies are short-lived, and the initial stages of root decay may not result in other identifiable symptoms. They also include diseases such as ash dieback (*Hymenoscyphus fraxineus*) where, in the initial stages of infection, foliar symptoms can be the main method of identification, but which are absent during the winter months.

Survey data is therefore based upon observations made at the time of the site visit. The identification of seasonally apparent hazards must be addressed as part of a wider risk management strategy and are outside the scope of this assessment.

ACCESS

The survey has only been undertaken from land within the client's ownership, from public land or from areas where formal access has been arranged.

Whilst all reasonable efforts are made view trees from the required angles this may not always be possible where they are located on the Site boundary, where safe access cannot be assured or where dense vegetation obscures views.

WILDLIFE AND CONSERVATION

Trees have the capacity to provide habitat for species such as bats, birds, and mammals some of which may be protected under UK or European Legislation. It is a statutory offence to injure, kill or disturb any protected species or to damage or destroy their breeding site or resting place. It is also an offence to disturb any nesting bird.

Wildlife and conservation matters are beyond the scope of this report although incidental comments may be made where these are of direct relevant to the arboricultural survey or subsequent assessment. It is therefore advisable that specialist ecological advice is sought prior to any tree removal or maintenance activities. If applicable, then the recommendations contained within this report should be reviewed considering any ecological constraints which may be identified.

ANNEX C: GLOSSARY OF TERMS

Table 1 includes a glossary of technical terms which may be used in this report.

Table 1: Glossary of technical terms

Term	Description
Arisings:	any parts of the tree (including stem, roots, branches, and leaves) derived from the tree during tree work operations.
Bracket:	the fruiting body of a wood decaying fungus.
Canker:	area of dead bark killed by a pathogen.
Cavity:	a hole in the woody part of a tree caused by decay or damage.
Co-dominant:	upward growing stem/branch with a similar height and disposition as another stem/branch. Where such stems/branches arise from the same point then their stability or the integrity of their attachment could be compromised.
Coppicing:	cutting trees close to ground level with the intention of encouraging regrowth in the form of multiple shoots.
Crotch:	forked region formed by the junction of a branch and the stem, or by two branches.
Crown:	main foliage-bearing part of the tree.
Crown lifting:	removal of lower branches to achieve a stated vertical clearance above ground level or another surface.

Term	Description
Crown reduction:	the shortening of twigs and branches to reduce the height and/or spread of the crown.
Crown thinning:	selective removal of live branches to reduce crown density.
Dieback:	condition in which the branches in the crown die from the tips towards the centre.
Epicormic growth:	shoots growing from a woody stem or branch.
Heartwood:	central wood within a stem.
Included bark:	bark lodged in the union between and branch and parent stem, in the crotch between two branches, or between the bases of co-dominant stems, indicating potential weak attachment.
Phototrophic:	stem or branch whose growth is influenced by light; growing towards light.
Pollard:	a tree which has been cut so as to encourage the formation of numerous branches arising from the same height on the main stem and principal branches.
Stem:	principal above ground structural component of a tree that supports the branches.
Vitality:	overall measure of physiological and biomechanical processes, in which high vitality equates with near optimal function and low vitality equates with sub-optimal function.
Windthrow:	tree failure due to uprooting caused by wind.