URBAN FOREST CARE
Your Tree Care Specialists

Arboricultural Impact Assessment Report

Report Number: #29863
Date of Assessment: Friday, 28th March 2025

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1. Summary

This Arboricultural Impact Assessment was commissioned to inform a Development Application for a proposed childcare centre at 22 Brodie Hall Drive, Bentley. It has been prepared in accordance with the City of East Victoria Park's Local Planning Policy No. 39 – Tree Planting and Retention.

Seventeen trees were assessed in total, including *Pinus pinaster, Liquidambar styraciflua, Jacaranda mimosifolia, Pyrus calleryana, and Platanus × acerifolia*. Several *Pinus pinaster* specimens exhibit good structure and long useful life expectancy, while other trees, including juvenile *Liquidambar* and *Jacaranda*, were identified as either dead or in poor condition.

This report references development and landscape plans provided by the Client, identifying which trees are likely to be impacted. Where possible, trees in good health located outside primary construction zones have been recommended for retention. In response to client direction, potential transplanting opportunities have also been identified for several deciduous species in good condition.

Tree retention and replanting measures outlined in this report will ensure compliance with LPP 39, with the development exceeding the minimum canopy cover requirements through a combination of retained trees and new plantings.

The report provides clear guidance on which trees should be removed, which may be retained or relocated, and outlines the steps required to manage urban canopy objectives while enabling the proposed development to proceed.

2. Background

Urban Forest Care was engaged to undertake an Arboricultural Impact Assessment for the proposed childcare development located at 22 Brodie Hall Drive, Bentley. This assessment supports the client's Development Assessment Application to the City of East Victoria Park and is prepared in accordance with Local Planning Policy No. 39 – *Tree Planting and Retention*.

Seventeen trees were identified and assessed on-site, encompassing a variety of exotic species such as *Pinus pinaster*, *Liquidambar styraciflua*, *Jacaranda mimosifolia*, *Pyrus calleryana*, and *Platanus × acerifolia*. The assessment includes an evaluation of tree condition, structure, life expectancy, retention potential, and impacts associated with the proposed development.

3. Project Brief

The purpose of this report is to provide an objective assessment of existing tree assets within the subject site boundary and their interaction with the proposed development. The assessment aims to:

- Support the Development Assessment Application with clear Arboricultural data;
- Provide retention and removal recommendations based on tree health, structure, and site design;
- Identify potential transplanting opportunities for suitable trees in response to client direction; and
- Assess the site's compliance with LPP 39 canopy cover requirements.

4. Method

Tree data was collected during a detailed site inspection by qualified arborists. Each tree was individually assessed for species identification, height, diameter at breast height (DBH), canopy spread, health condition, structural integrity, age class, and useful life expectancy (ULE). Tree Protection Zones (TPZs) and Structural Root Zones (SRZs) were calculated where applicable in accordance with AS 4970–2009 (Protection of Trees on Development Sites).

The assessment also reviewed development and landscaping plans provided by the applicant to determine likely impacts and opportunities for retention or mitigation.

5. Assumptions

- Tree measurements were obtained from ground level using visual assessment methods and tools such as measuring tapes and range finders.
- Tree identification was based on visible morphological characteristics present at the time of assessment.
- All site plans and boundaries were assumed to be accurate as supplied by the client or their representatives.
- No excavation or root investigation was undertaken unless otherwise noted.

6. Limitations

- This assessment represents tree conditions at the time of inspection and does not account for changes that may result from seasonal variation, weather events, or construction activities.
- No invasive or diagnostic testing (e.g. tomography, root mapping) was conducted as part of this assessment.
- Subsurface conditions, including soil structure or root architecture, were not verified.
- Tree locations were interpreted based on on-site observations and supporting plans but may be subject to minor positional error.

7. Legislation

This assessment has been undertaken in accordance with the City of East Victoria Park's **Local Planning Policy No. 39 – Tree Planting and Retention**, which requires developments to retain existing trees wherever feasible and achieve a minimum canopy cover equivalent to 30% of the total site area.

Additional guidelines followed in this report include:

- **AS 4970–2009** – *Protection of Trees on Development Sites*
- **AS 4373–2007** – *Pruning of Amenity Trees*

- Arboricultural industry best practices for tree risk assessment, health evaluation, and transplant feasibility.

No trees on-site are listed under State or Commonwealth legislation as protected or significant, nor are they subject to Tree Preservation Orders (TPOs) under the City's current register, to the best of the assessor's knowledge at the time of reporting.

8. Site Details

The subject site is a relatively flat, cleared lot located at 22 Brodie Hall Drive, Bentley, with sparse vegetation and several boundary and centrally positioned trees. Existing hardscape is limited to kerbs and accessways, with no notable infrastructure encroaching on the assessed root zones of retained trees.

Development and landscape concept plans propose a new childcare centre with supporting outdoor spaces, which will impact several trees either due to direct footprint or adjacent construction activity. Proposed canopy replacement plantings include a mix of native and ornamental species suited to urban environments.

***Figure 1**. Google Street View of the property – Image captured November 2024*

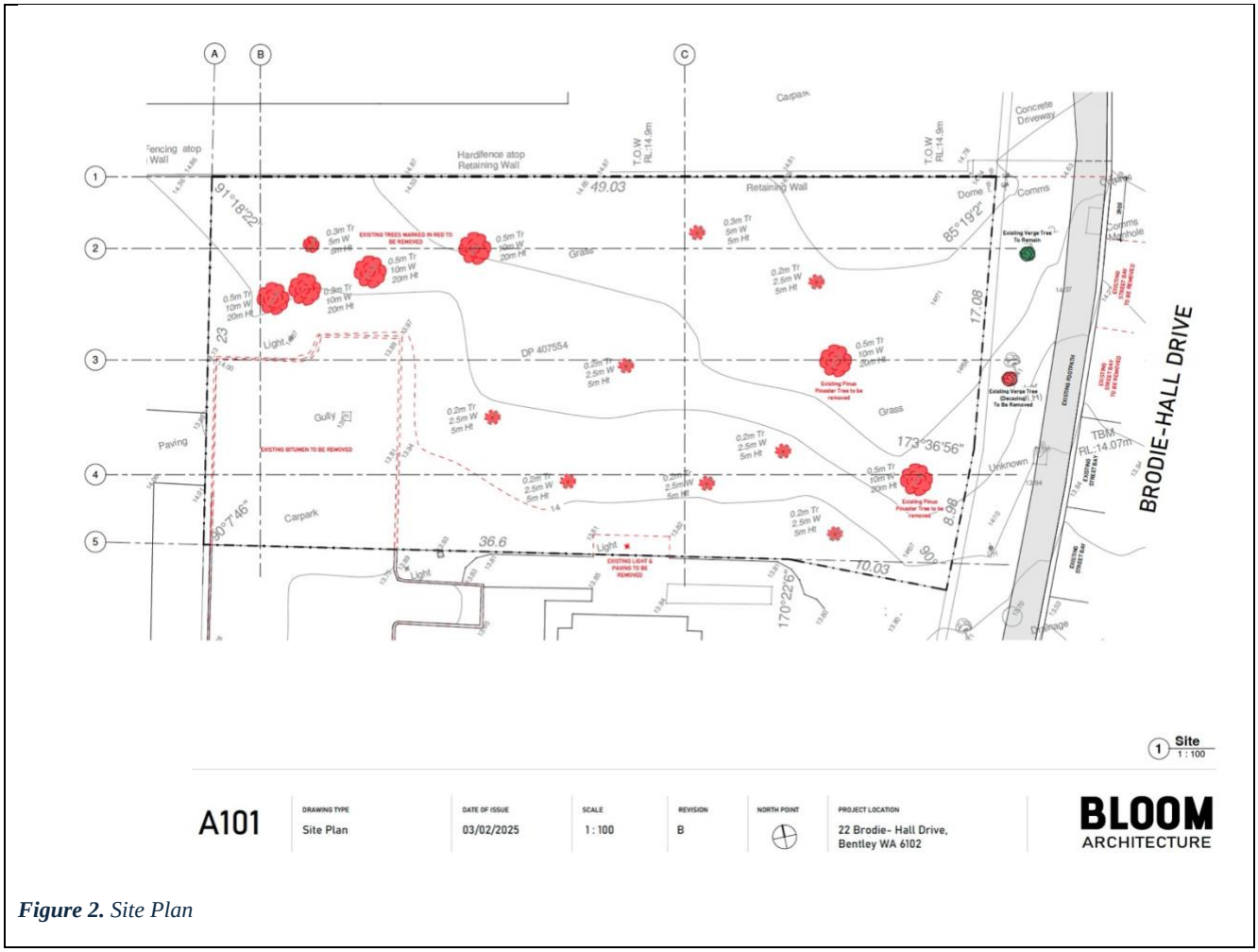

Figure 2. *Site Plan*

9. The Trees

A total of seventeen trees were identified and assessed on-site. All specimens are non-native to the local environment and include the following species: *Pinus pinaster* (Mediterranean Pine), *Liquidambar styraciflua* (Liquidambar), *Jacaranda mimosifolia* (Jacaranda), *Pyrus calleryana* (Ornamental Pear), and *Platanus* × *acerifolia* (London Plane).

While many of the *Pinus pinaster* specimens were observed to be in good health and structural condition, this species is recognised as an environmental weed in parts of Western Australia. It is known to naturalise readily, displace native vegetation, and contribute little ecological value within urban settings. As such, *Pinus pinaster* is not considered a suitable species for retention under Local Planning Policy No. 39 – Tree Planting and Retention.

Tree ID	Botanical Name	Common Name
#V1	*Liquidambar styraciflua*	Liquidambar
#V2	*Liquidambar styraciflua*	Liquidambar
#1	*Pinus pinaster*	Mediterranean Pine

#2	*Pinus pinaster*	Mediterranean Pine
#3	*Liquidambar styraciflua*	Liquidambar
#4	*Liquidambar styraciflua*	Liquidambar
#5	*Jacaranda mimosifolia*	Jacaranda
#6	*Pyrus calleryana*	Ornamental Pear
#7	*Platanus × acerifolia*	London Plane
#8	*Jacaranda mimosifolia*	Jacaranda
#9	*Pyrus calleryana*	Ornamental Pear
#10	*Jacaranda mimosifolia*	Jacaranda
#11	*Pinus pinaster*	Mediterranean Pine
#12	*Pinus pinaster*	Mediterranean Pine
#13	*Platanus × acerifolia*	London Plane
#14	*Pinus pinaster*	Mediterranean Pine
#15	*Pinus pinaster*	Mediterranean Pine

***Figure 3**. Tree ID and site location*

10. Visual Tree Assessment

A Visual Tree Assessment (VTA) was undertaken for all trees within the subject site. This non-invasive method is an industry-standard approach used to evaluate tree health and structural integrity based on observable characteristics. Each tree was assessed for indicators of vitality, defects, structural stability, and potential hazards.

The assessment considered aspects such as trunk taper, branch attachment, canopy density, presence of deadwood, pest or disease symptoms, and signs of environmental stress. Observations were made from ground level and recorded in accordance with arboricultural best practices. No invasive tools or root investigations were employed as part of this assessment.

The VTA findings form the basis for health ratings, useful life expectancy estimates, and recommendations for retention, removal, or viability of transplanting outlined throughout this report.

Tree ID	Botanical Name	Common Name	Height (m)	DBH (m)	Health	Structure	Age Class	ULE
#V1	*Liquidambar styraciflua*	Liquidambar	2.32	<0.1	Dead	Poor	Juvenile	0 years
#V2	*Liquidambar styraciflua*	Liquidambar	2.81	<0.1	Dead	Poor	Juvenile	0 years
#1	*Pinus pinaster*	Mediterranean Pine	20.86	0.74	Good	Good	Mature	>25 years
#2	*Pinus pinaster*	Mediterranean Pine	24.15	0.67	Good	Good	Mature	>25 years
#3	*Liquidambar styraciflua*	Liquidambar	4.44	<0.1	Dead	Poor	Juvenile	0 years
#4	*Liquidambar styraciflua*	Liquidambar	6.32	0.16	Good	Good	Juvenile	>25 years
#5	*Jacaranda mimosifolia*	Jacaranda	5.55	0.19	Good	Fair	Semi-mature	>25 years
#6	*Pyrus calleryana*	Ornamental Pear	5.02	0.27	Good	Good	Semi-mature	>20 years
#7	*Platanus × acerifolia*	London Plane	9.6	0.31	Good	Good	Semi-mature	>25 years
#8	*Jacaranda mimosifolia*	Jacaranda	5.13	0.12	Fair	Fair	Juvenile	5-15 years
#9	*Pyrus calleryana*	Ornamental Pear	6.2	0.34	Fair	Good	Semi-mature	5-15 years
#10	*Jacaranda mimosifolia*	Jacaranda	8.13	0.21	Good	Good	Semi-mature	>25 years
#11	*Pinus pinaster*	Mediterranean Pine	17.98	0.5	Good	Good	Mature	>25 years
#12	*Pinus pinaster*	Mediterranean Pine	19.51	0.62	Good	Good	Mature	>25 years
#13	*Platanus × acerifolia*	London Plane	9.88	0.24	Good	Good	Semi-mature	>25 years
#14	*Pinus pinaster*	Mediterranean Pine	19.38	0.32	Good	Fair	Semi-mature	<20 years
#15	*Pinus pinaster*	Mediterranean Pine	21.01	0.59	Good	Good	Mature	>25 years

11. Tree Protection and Structural Root Zones (TPZ & SRZ)

In accordance with *AS 4970–2009 Protection of Trees on Development Sites*, Tree Protection Zones (TPZ) and Structural Root Zones (SRZ) have been calculated for all trees assessed as part of this report. These measurements are critical for guiding development layout, excavation, and construction practices to minimise impacts on tree health and stability.

- The **TPZ** represents the minimum area surrounding a tree that must be protected to sustain its long-term viability.
- The **SRZ** defines the area required to maintain the tree's structural integrity and should not be encroached upon by significant excavation or footings.

TPZs and SRZs were calculated using trunk diameter measurements at 1.4m above ground level (DBH), in line with the formulas provided in the Australian Standard. A summary of TPZ and SRZ radius is provided in the following table:

Tree ID	Botanical Name	Latitude	Longitude	TPZ Radius (m)	SRZ Radius (m)
#1	*Pinus pinaster*	-31.996221	115.892648	17.76	5.84
#2	*Pinus pinaster*	-31.996156	115.892625	16.08	5.6
#4	*Liquidambar styraciflua*	-31.996254	115.892608	4.0	3.08
#5	*Jacaranda mimosifolia*	-31.996217	115.892567	4.56	3.3
#6	*Pyrus calleryana*	-31.996203	115.892526	6.48	3.82
#7	*Platanus × acerifolia*	-31.996069	115.892544	7.44	4.1
#8	*Jacaranda mimosifolia*	-31.996123	115.89247	4.0	3.0
#9	*Pyrus calleryana*	-31.996187	115.892435	8.16	4.34
#10	*Jacaranda mimosifolia*	-31.996147	115.892398	5.04	3.46
#11	*Pinus pinaster*	-31.996062	115.892392	12.0	5.08
#12	*Pinus pinaster*	-31.996072	115.892341	14.88	5.46
#13	*Platanus × acerifolia*	-31.996003	115.89226	5.76	3.66
#14	*Pinus pinaster*	-31.996081	115.892295	7.68	4.08
#15	*Pinus pinaster*	-31.996079	115.892262	14.16	5.34

12. Tree Health & Condition

An assessment of each tree's health and overall condition was conducted to determine its current vitality, structural stability, and long-term viability. This involved evaluating visible indicators such as foliage density and colour, presence of pests or disease, structural form, and signs of stress or decline.

The health rating considers both the physiological state of the tree (e.g. leaf growth, vigour) and its capacity to recover from stress, while the structural rating reflects any observed defects such as leaning, deadwood, basal flare abnormalities, or canopy imbalance.

Observations have been summarised in the accompanying Tree Health and Condition Table, which includes notes on root zone conditions, canopy density, presence of stress symptoms, and estimated useful life expectancy (ULE). These findings inform the recommendations for retention, removal, or transplanting and are critical to evaluating the arboricultural significance of each tree in the context of the proposed development.

Tree ID	Botanical Name	Health	Structure	Pests/Disease	Root Zone	Canopy Density	Signs of Stress	Comments
#V1	*Liquidambar styraciflua*	Dead	Poor	Yes	Poor	Sparse	Yes	Declined, likely due to environmental stresses i.e. extended heat stress, insufficient watering, etc
#V2	*Liquidambar styraciflua*	Dead	Poor	Yes	Poor	Sparse	Yes	Declined, likely due to environmental stresses i.e. extended heat stress, insufficient watering, etc
#1	*Pinus pinaster*	Good	Good	No	Good	Moderate	No	Deadwood present <10%
#2	*Pinus pinaster*	Good	Good	No	Good	Moderate	No	Deadwood present <10%
#3	*Liquidambar styraciflua*	Dead	Poor	Yes	Poor	Sparse	Yes	Declined, likely due to environmental stresses i.e. extended heat stress, insufficient watering, etc
#4	*Liquidambar styraciflua*	Good	Good	No	Good	Dense	No	
#5	*Jacaranda mimosifolia*	Good	Fair	No	Good	Dense	No	Minor deadwood; water-shoots
#6	*Pyrus calleryana*	Good	Good	No	Good	Dense	No	
#7	*Platanus × acerifolia*	Good	Good	No	Good	Dense	No	
#8	*Jacaranda mimosifolia*	Fair	Fair	No	Good	Sparse	Yes	Excessive deadwood throughout canopy >30%
#9	*Pyrus calleryana*	Fair	Good	No	Good	Dense	Yes	Stress growth response – basal and epicormic shooting.
#10	*Jacaranda mimosifolia*	Good	Good	No	Good	Dense	No	
#11	*Pinus pinaster*	Good	Good	No	Good	Moderate	No	Deadwood present <10%
#12	*Pinus pinaster*	Good	Good	No	Good	Moderate	No	Deadwood present <10%
#13	*Platanus × acerifolia*	Good	Good	No	Good	Dense	No	
#14	*Pinus pinaster*	Good	Fair	No	Good	Moderate	No	Canopy encroachment; leaning tree structure; minor deadwood
#15	*Pinus pinaster*	Good	Good	No	Good	Dense	No	Deadwood present <10%

13. Tree Worthy of Retention (TWOR)

In accordance with the City of East Victoria Park's ***Local Planning Policy No. 39 – Tree Planting and Retention***, each assessed tree has been evaluated against the Tree Worthy of Retention (TWOR) criteria. This process assists in identifying trees that should be prioritised for retention due to their potential environmental, aesthetic, or structural value within the context of the site and proposed development.

Under this policy, a tree may be considered worthy of retention if it meets one of the following size-based criteria:

- A trunk diameter of at least 100mm, or 200mm in aggregate (measured at 1.4m above ground); or
- A canopy width of at least 3 metres.

Additionally, the tree must:

- Not be a known environmental weed or unsuitable species for the location; and
- Exhibit signs of health and ongoing viability.

Several *Pinus pinaster* (Mediterranean Pine) specimens on site met the size and health requirements; however, this species is recognised as environmentally unsuitable in Western Australia due to its invasive nature, self-seeding behaviour, and lack of biodiversity value. As such, it does not meet the species suitability criterion for retention under LPP 39.

A summary of the TWOR assessment is provided in the Tree Worthy of Retention Table, outlining each tree's performance against the criteria and providing a clear indication of its retention status (Yes/No). These findings support informed decisions on tree protection and planning compliance for the proposed development.

Tree ID	Botanical Name	Trunk ≥100mm or 200mm aggregate / Canopy ≥3m	Weed/unsuitable species	Healthy + Ongoing viability	Worthy of Retention	Comments
#V1	*Liquidambar styraciflua*	No	No	No	No	Insufficient trunk diameter; Lacks health and/or viability
#V2	*Liquidambar styraciflua*	No	No	No	No	Insufficient trunk diameter; Lacks health and/or viability
#1	*Pinus pinaster*	Yes	Yes	Yes	No	Species considered environmentally unsuitable
#2	*Pinus pinaster*	Yes	Yes	Yes	No	Species considered environmentally unsuitable
#3	*Liquidambar styraciflua*	No	No	No	No	Insufficient trunk diameter; Lacks health and/or viability
#4	*Liquidambar styraciflua*	Yes	No	Yes	Yes	
#5	*Jacaranda mimosifolia*	Yes	No	Yes	Yes	
#6	*Pyrus calleryana*	Yes	No	Yes	Yes	
#7	*Platanus × acerifolia*	Yes	No	Yes	Yes	
#8	*Jacaranda mimosifolia*	Yes	No	No	No	Lacks health and/or viability
#9	*Pyrus calleryana*	Yes	No	No	No	Lacks health and/or viability
#10	*Jacaranda mimosifolia*	Yes	No	Yes	Yes	
#11	*Pinus pinaster*	Yes	Yes	Yes	No	Species considered environmentally unsuitable
#12	*Pinus pinaster*	Yes	Yes	Yes	No	Species considered environmentally unsuitable
#13	*Platanus × acerifolia*	Yes	No	Yes	Yes	
#14	*Pinus pinaster*	Yes	Yes	Yes	No	Species considered environmentally unsuitable
#15	*Pinus pinaster*	Yes	Yes	Yes	No	Species considered environmentally unsuitable

14. Transplanting Suitability Assessment

Several semi-mature deciduous species displayed good transplant potential. These trees offer an opportunity to increase overall retention outcomes if relocated successfully. Transplanting feasibility is subject to seasonal timing, equipment access, and sufficient aftercare.

Tree ID	Botanical Name	Height (m)	DBH (m)	Age Class	Health	Suitability
#4	*Liquidambar styraciflua*	6.32	0.16	Juvenile	Good	Suitable
#5	*Jacaranda mimosifolia*	*5.55*	*0.19*	*Semi-mature*	*Good*	*Suitable*
#6	*Pyrus calleryana*	5.02	0.27	Semi-mature	Good	Suitable
#7	*Platanus × acerifolia*	9.6	0.31	Semi-mature	Good	Suitable (with caution)
#9	*Pyrus calleryana*	6.2	0.34	Semi-mature	Fair	Possible (monitor closely)
#10	*Jacaranda mimosifolia*	8.13	0.21	Semi-mature	Good	Suitable
#13	*Platanus × acerifolia*	9.88	0.24	Semi-mature	Good	Suitable (with caution)

Note: Trees marked "Suitable (with caution)" may require advanced root pruning or support systems due to their current size or structure.

15. Discussion

The arboricultural assessment identified a total of seventeen non-native trees on the subject site, varying in species, age, and condition. While several trees demonstrated good health and structural integrity, others were found to be either in decline or unsuitable for long-term retention.

Pinus pinaster (Mediterranean Pine) specimens were among the most mature on-site; however, their classification as environmentally unsuitable due to invasive characteristics rendered them ineligible for retention under the criteria of LPP 39. Additionally, three juvenile *Liquidambar* and one *Jacaranda* were assessed as dead or in poor condition, supporting their removal.

In contrast, semi-mature deciduous species such as *Jacaranda mimosifolia*, *Pyrus calleryana*, and *Platanus × acerifolia* displayed good form and transplant potential. These trees present an opportunity to increase retention outcomes through relocation strategies and may contribute toward meeting canopy requirements.

TPZ and SRZ calculations were undertaken for all viable trees to inform future design considerations and protect structural root integrity during construction.

16. Recommendations

Establish and maintain Tree Protection Zones (TPZs) and Structural Root Zones (SRZs) for all retained trees throughout site preparation and construction works, in strict accordance with AS 4970–2009.

1. Remove all trees identified as dead, structurally compromised, or environmentally unsuitable (including *Pinus pinaster* and trees #V1, V2, 3, and 8).

2. Retain or transplant semi-mature deciduous trees (#4, 5, 6, 7, 9, 10, 13) where feasible, prioritising retention at boundary locations or within landscape areas.

3. Implement TPZ and SRZ protections for retained trees during site preparation, excavation, and construction in accordance with AS 4970–2009.

4. Incorporate proposed replanting to meet or exceed canopy coverage targets outlined in LPP 39, making use of suitable native and non-invasive species.

17. Conclusion

This report supports the proposed childcare development at 22 Brodie Hall Drive by providing a comprehensive arboricultural assessment of existing site trees and evaluating their retention value in the context of Local Planning Policy No. 39. While removal of several trees is recommended, particularly those of unsuitable species or poor condition, the inclusion of transplantable trees and a strategic planting scheme ensures a balanced outcome.

With careful consideration of TPZs, SRZs, and recommended management actions, the development can proceed with minimal long-term arboricultural impact while aligning with the City's urban greening objectives.

18. Disclaimer

This report is based on a visual ground-level inspection and does not include invasive investigation or subsurface analysis. Tree health may change over time. This report excludes consideration of underground utilities or potential root conflicts unless otherwise stated.

Tree health and structural integrity can change over time due to environmental factors, storm events, pest and disease activity, or undetectable internal defects. This report reflects the observed condition of trees at the time of inspection and should not be relied upon as a guarantee of future performance or safety.

19. Bibliography / References

- Australian Standard AS 4970–2009: *Protection of Trees on Development Sites*
- Australian Standard AS 4373–2007: *Pruning of Amenity Trees*
- City of East Victoria Park – *Local Planning Policy No. 39 – Tree Planting and Retention*
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