

Appendix J – Arboricultural Development Impact Assessment



ARBORICULTURAL DEVELOPMENT IMPACT ASSESSMENT REPORT

Wyong Palms - Pacific Highway Wyong NSW

16th of September 2023

Prepared for
AECOM

Prepared by

Birds Tree Consultancy

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Executive Summary

This Arboricultural Development Impact Assessment Report has been commissioned by AECOM to report on the existing palm avenue planting on Pacific Highway Wyong NSW. It has been commissioned to outline the health, condition and stability of these trees as well as their viability for translocation within the scope of the proposed development. The scope of this report includes 33 palms previously identified by AECOM as palms proposed for translocation.

The subject Trees are proposed for translocation and relocation. The trees are proposed for translocation from their existing location to an interim nursery location to be established prior to planting in the proposed final location.

The subject trees all have evidence of infestation by *Fusarium oxysporum* f.sp. *canariensis*, specifically the trees show foliar dieback extending downwards from the centre of the crown with the fronds showing initial dieback on one side of the frond midrib. Final diagnosis is recommended using pathology testing of samples from frond bases.

There is no known treatment for *Fusarium spp.* Infestation and trees infested will decline to death within 5 years. The subject trees are in various states of decline with Trees 10, 12, 14, 15, 16, 17, 18, 19, 20, 21, 23, 25, 28 and 29 in advanced stages of decline. Tree 26 remains in good condition and other trees appear to be in early stages of decline however *Fusarium spp.* is readily spread and it is likely that these trees have been infested with the pathogen.

Likely infestation of the subject trees with the fungal pathogen *Fusarium spp.* Makes the translocation of these trees impractical as the useful life expectancy is expected to be less than 5 years and the stress of the translocation process is likely to hasten the decline of these trees.

We recommend that this initial diagnosis of *Fusarium spp* infestation be corroborated by pathology testing of frond base samples at the Plantclinic, Royal Botanic Gardens. Based on confirmation of diagnosis, we recommend the safe removal of all of the *Phoenix canariensis* trees and replacement planting within the landscape design of the final development. *Fusarium spp.* Chlamydospores can survive in the soil for up to two years and therefore we recommend that no *Phoenix spp* or *Washingtonia spp.* are planted in the soil in this area.

When removing the palms, the following protocols are to be followed:

1. Minimise all cutting and disturbance of the tree (remove in largest pieces possible).
2. Spray the tree and surrounding area with water and keep the tree wet during removal.
3. No chipping is permitted,
4. All tools and equipment used in tree removal are to be disinfected using a chlorine-based disinfectant immediately after use and prior to removal from site.
5. Removal should include as much of the root ball as is possible.
6. All parts of the tree are to be transported in a covered truck, with tarpaulins covering all parts of the tree during transit.
7. Tree is to be deposited in landfill within the local eastern/southern Sydney area. The tree is not to be transported out of eastern Sydney.

8. Tarpaulins covering the tree are to be disinfected or disposed of after transport.

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1.0 Scope of Works

This Arboricultural Development Impact Assessment Report has been commissioned by AECOM to report on the existing palm avenue planting on Pacific Highway Wyong NSW. It has been commissioned to outline the health, condition and stability of these trees as well as their viability for translocation within the scope of the proposed development. The scope of this report includes 33 palms previously identified by AECOM as palms proposed for translocation.

On the 16th of September 2023, Glenn Bird of Birds Tree Consultancy attended site and inspected the subject trees from the ground. There was no aerial inspection carried out. A Visual Tree Assessment was undertaken in accordance with Visual Tree Assessment (VTA) guidelines (Mattheck and Breloer, 1994). Tree heights were measured using a Nikon Forestry 550 Heightmeter.

2.0 Site Analysis

2.1 Site

The subject site is Pacific Highway, Wyong Centre. The subject trees are located within the public domain adjacent to Pacific Highway.

2.2 Documentation

This Development Impact Assessment Report has been compiled based on the following documentation provided:

1. Survey provided.

2.3 Topography

The site is relatively flat. Trees 1 and 2 are located on a steep embankment adjacent to the vehicular bridge. Refer to detailed survey for detailed levels.

2.4 Identification

Trees are as identified in the attached inspection forms in Appendix C and shown in Tree location Plan A01 in Appendix D.

2.5 Soils

Soil material and horizons were not tested for this report.

3.0 Existing Trees

The following trees were inspected from the ground and the following items identified. Please refer also to the attached inspection data in Appendix C.

3.1. Tree 1. *Phoenix canariensis*

This mature tree is approximately 13m tall with a canopy spread of 6m. It has a single trunk with a diameter at breast height (DBH) of 3.5mm. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. Infestation.

3.2. Tree 2. *Phoenix canariensis*

This mature tree is approximately 9m tall with a canopy spread of 6m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.3. Tree 3. *Phoenix canariensis*

This mature tree is approximately 12m tall with a canopy spread of 7m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.



Figure 1 - Tree 3

3.4. Tree 4. *Phoenix canariensis*

This mature tree is approximately 12m tall with a canopy spread of 7m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.



Figure 2 - Tree 4

3.5. Tree 5. *Phoenix canariensis*

This mature tree is approximately 10m tall with a canopy spread of 6m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.6. Tree 6. *Phoenix canariensis*

This mature tree is approximately 10m tall with a canopy spread of 6m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.7. Tree 7. *Phoenix canariensis*

This mature tree is approximately 9m tall with a canopy spread of 6m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.



Figure 3 - Trees 5, 6, 7.

3.8. Tree 8. *Phoenix canariensis*

This mature tree is approximately 11m tall with a canopy spread of 6m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.9. Tree 9. *Phoenix canariensis*

This mature tree is approximately 11m tall with a canopy spread of 6m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.10. Tree 10. *Phoenix canariensis*

This mature tree is approximately 11m tall with a canopy spread of 6m. It has a single trunk. This tree is in poor health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.



Figure 4 - Trees 8, 9, 10.

3.11. Tree 11. *Phoenix canariensis*

This mature tree is approximately 12m tall with a canopy spread of 6m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.12. Tree 12. *Phoenix canariensis*

This mature tree is approximately 12m tall with a canopy spread of 6m. It has a single trunk. This tree is in poor health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.13. Tree 13. *Phoenix canariensis*

This mature tree is approximately 12m tall with a canopy spread of 6m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.14. Tree 14. *Phoenix canariensis*

This mature tree is approximately 12m tall with a canopy spread of 6m. It has a single trunk. This tree is in poor health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.15. Tree 15. *Phoenix canariensis*

This mature tree is approximately 7m tall with a canopy spread of 6m. It has a single trunk. This tree is in poor health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.



Figure 5 - Trees 14 and 15.

3.16. Tree 16. *Phoenix canariensis*

This mature tree is approximately 8m tall with a canopy spread of 5m. It has a single trunk. This tree is in poor health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.17. Tree 17. *Phoenix canariensis*

This mature tree is approximately 10m tall with a canopy spread of 6m. It has a single trunk. This tree is in poor health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.18. Tree 18. *Phoenix canariensis*

This mature tree is approximately 9m tall with a canopy spread of 6m. It has a single trunk. This tree is in poor health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.



Figure 6 - Trees 16, 17, 18.

- 3.19. Tree 19. *Phoenix canariensis***
This mature tree is approximately 7m tall with a canopy spread of 5m. It has a single trunk. This tree is in poor health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.
- 3.20. Tree 20. *Phoenix canariensis***
This mature tree is approximately 8m tall with a canopy spread of 5m. It has a single trunk. This tree is in poor health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.
- 3.21. Tree 21. *Phoenix canariensis***
This mature tree is approximately 9m tall with a canopy spread of 5m. It has a single trunk. This tree is in poor health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.
- 3.22. Tree 22. *Phoenix canariensis***
This mature tree is approximately 11m tall with a canopy spread of 6m. It has a single trunk. This tree is in poor health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.
- 3.23. Tree 23. *Phoenix canariensis***
This mature tree is approximately 7m tall with a canopy spread of 4m. It has a single trunk. This tree is in poor health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.
- 3.24. Tree 24. *Phoenix canariensis***
This mature tree is approximately 9m tall with a canopy spread of 5m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.



Figure 7 - Trees 22, 23, 24.

3.25. Tree 25. *Phoenix canariensis*

This mature tree is approximately 6m tall with a canopy spread of 2m. It has a single trunk. This tree is in poor health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.26. Tree 26. *Phoenix canariensis*

This mature tree is approximately 6m tall with a canopy spread of 2m. It has a single trunk. This tree is in good health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.27. Tree 27. *Phoenix canariensis*

This mature tree is approximately 11m tall with a canopy spread of 8m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.28. Tree 28. *Phoenix canariensis*

This mature tree is approximately 11m tall with a canopy spread of 8m. It has a single trunk. This tree is in poor health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.29. Tree 29. *Phoenix canariensis*

This mature tree is approximately 14m tall with a canopy spread of 8m. It has a single trunk. This tree is in poor health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.



Figure 8 - Trees 25, 26, 27, 28, 29.

3.30. Tree 30. *Phoenix canariensis*

This mature tree is approximately 13m tall with a canopy spread of 8m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.31. Tree 31. *Phoenix canariensis*

This mature tree is approximately 13m tall with a canopy spread of 7m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.32. Tree 32. *Phoenix canariensis*

This mature tree is approximately 13m tall with a canopy spread of 7m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.

3.33. Tree 33. *Phoenix canariensis*

This mature tree is approximately 12m tall with a canopy spread of 7m. It has a single trunk. This tree is in fair health and condition with a thinning canopy and significant deadwood. There is evidence of *Fusarium* spp. infestation.



Figure 9 - Trees 30, 31, 32, 33.

4.0 Landscape Significance of Trees

4.1 Landscape Significance

The significance of a tree within the landscape is a factor of the health and condition of the tree, vitality, the form of the tree, environmental, cultural, amenity and heritage value.

4.2 Methodology of Determining Landscape Significance

For the purpose of this report, the Significance of a Tree, Assessment Rating System (STARS) as developed by the Institute of Australian Consulting Arborists (IACA) has been implemented. Please refer to Appendix A for greater detail of this assessment system. This system defines Landscape Significance for individual trees as High, Medium or Low Significance.

4.3 Landscape Significance of Subject Trees

Based on our assessment of the subject trees and implementation of the IACA Significance of a Tree, Assessment Rating System, the Landscape Significance of the Subject Trees was determined as shown in Table 1.

Tree no.	Species	Landscape Significance
1.	<i>Phoenix canariensis</i>	Medium
2.	<i>Phoenix canariensis</i>	Medium

3.	<i>Phoenix canariensis</i>	High
4.	<i>Phoenix canariensis</i>	High
5.	<i>Phoenix canariensis</i>	High
6.	<i>Phoenix canariensis</i>	High
7.	<i>Phoenix canariensis</i>	High
8.	<i>Phoenix canariensis</i>	High
9.	<i>Phoenix canariensis</i>	High
10.	<i>Phoenix canariensis</i>	High
11.	<i>Phoenix canariensis</i>	High
12.	<i>Phoenix canariensis</i>	High
13.	<i>Phoenix canariensis</i>	High
14.	<i>Phoenix canariensis</i>	High
15.	<i>Phoenix canariensis</i>	High
16.	<i>Phoenix canariensis</i>	High
17.	<i>Phoenix canariensis</i>	High
18.	<i>Phoenix canariensis</i>	High
19.	<i>Phoenix canariensis</i>	High
20.	<i>Phoenix canariensis</i>	High
21.	<i>Phoenix canariensis</i>	High
22.	<i>Phoenix canariensis</i>	High
23.	<i>Phoenix canariensis</i>	High
24.	<i>Phoenix canariensis</i>	High
25.	<i>Phoenix canariensis</i>	Low
26.	<i>Phoenix canariensis</i>	High
27.	<i>Phoenix canariensis</i>	High
28.	<i>Phoenix canariensis</i>	High
29.	<i>Phoenix canariensis</i>	High
30.	<i>Phoenix canariensis</i>	High
31.	<i>Phoenix canariensis</i>	High
32.	<i>Phoenix canariensis</i>	High
33.	<i>Phoenix canariensis</i>	High

Table 1 - Landscape Significance

5.0 Subject Tree Retention Value

5.1 Tree Retention Value Methodology

For the purpose of this report, the Tree Retention Values have been assessed by incorporating Landscape Significance Values as determined in 4.0 with the Useful Life Expectancy of the subject trees and assessing the retention values based on the Tree Retention Value Priority Matrix as developed by the Institute of Australian Consulting Arborists (IACA). Please refer to Appendix B for greater detail on this Tree Retention Value Priority Matrix. This matrix defines Landscape Significance for individual trees as High, Medium or Low Retention Value as well as Priority for Removal.

5.2 Retention Value of Subject Trees

Based on our assessment of the subject trees and implementation of the IACA Tree Retention Value Priority Matrix, the Retention Values of the Subject Trees were determined as shown in Table 2.

Tree no.	Species	Retention Value
1.	<i>Phoenix canariensis</i>	Low
2.	<i>Phoenix canariensis</i>	Low
3.	<i>Phoenix canariensis</i>	Low
4.	<i>Phoenix canariensis</i>	Low
5.	<i>Phoenix canariensis</i>	Low
6.	<i>Phoenix canariensis</i>	Low
7.	<i>Phoenix canariensis</i>	Low
8.	<i>Phoenix canariensis</i>	Low
9.	<i>Phoenix canariensis</i>	Low
10.	<i>Phoenix canariensis</i>	Low
11.	<i>Phoenix canariensis</i>	Low
12.	<i>Phoenix canariensis</i>	Low
13.	<i>Phoenix canariensis</i>	Low
14.	<i>Phoenix canariensis</i>	Low
15.	<i>Phoenix canariensis</i>	Low
16.	<i>Phoenix canariensis</i>	Low
17.	<i>Phoenix canariensis</i>	Low
18.	<i>Phoenix canariensis</i>	Low
19.	<i>Phoenix canariensis</i>	Low
20.	<i>Phoenix canariensis</i>	Low
21.	<i>Phoenix canariensis</i>	Low
22.	<i>Phoenix canariensis</i>	Low
23.	<i>Phoenix canariensis</i>	Low
24.	<i>Phoenix canariensis</i>	Low
25.	<i>Phoenix canariensis</i>	Low
26.	<i>Phoenix canariensis</i>	Low
27.	<i>Phoenix canariensis</i>	Low
28.	<i>Phoenix canariensis</i>	Low
29.	<i>Phoenix canariensis</i>	Low
30.	<i>Phoenix canariensis</i>	Low
31.	<i>Phoenix canariensis</i>	Low
32.	<i>Phoenix canariensis</i>	Low
33.	<i>Phoenix canariensis</i>	Low

Table 2 – Tree Retention Value

6.0 Fusarium Infestation

The subject trees present crown dieback that is presenting in a very specific pattern with the crown dying back from the centre down and each frond initially dying on one side of the midrib before the other. This specific pattern of dieback is indicative of *Fusarium oxysporum* f.sp. *canariensis* infection resulting in Fusarium Wilt.



Figure 10 - Unilateral dieback of palm fronds.

Fusarium oxysporum f.sp. *canariensis* is an Ascomycota fungal pathogen that impacts *Phoenix* spp. and some *Washingtonia* spp.. *Fusarium* spp. is a serious pathogen which

will eventually kill the palm. There is no known treatment for this pathogen. *Fusarium* is easily spread and therefore complete removal of the tree is recommended as soon as possible in order to prevent the spread of the pathogen.

7.0 Recommendations

The subject Trees are proposed for transplantation and relocation. The trees are proposed for translocation from their existing location to an interim nursery location to be established prior to planting in the proposed final location.

The subject trees all have evidence of infestation by *Fusarium oxysporum* f.sp. *canariensis*, specifically the trees show foliar dieback extending downwards from the centre of the crown with the fronds showing initial dieback on one side of the frond midrib. Final diagnosis is recommended using pathology testing of samples from frond bases.

There is no known treatment for *Fusarium spp.* Infestation and trees infested will decline to death within 5 years. The subject trees are in various states of decline with Trees 10, 12, 14, 15, 16, 17, 18, 19, 20, 21, 23, 25, 28 and 29 in advanced stages of decline. Tree 26 remains in good condition and other trees appear to be in early stages of decline however *Fusarium spp.* is readily spread and it is likely that these trees have been infested with the pathogen.

Likely infestation of the subject trees with the fungal pathogen *Fusarium spp.* Makes the transplantation of these trees impractical as the useful life expectancy is expected to be less than 5 years and the stress of the transplantation process is likely to hasten the decline of these trees.

We recommend that this initial diagnosis of *Fusarium spp* infestation be corroborated by pathology testing of frond base samples at the Plantclinic, Royal Botanic Gardens. Based on confirmation of diagnosis, we recommend the safe removal of all of the *Phoenix canariensis* trees and replacement planting within the landscape design of the final development. *Fusarium spp.* Chlamydospores can survive in the soil for up to two years and therefore we recommend that no *Phoenix spp* or *Washingtonia spp.* are planted in the soil in this area.

When removing the palms, the following protocols are to be followed:

9. Minimise all cutting and disturbance of the tree (remove in largest pieces possible).
10. Spray the tree and surrounding area with water and keep the tree wet during removal.
11. No chipping is permitted,
12. All tools and equipment used in tree removal are to be disinfected using a chlorine-based disinfectant immediately after use and prior to removal from site.
13. Removal should include as much of the root ball as is possible.
14. All parts of the tree are to be transported in a covered truck, with tarpaulins covering all parts of the tree during transit.
15. Tree is to be deposited in landfill within the local eastern/southern Sydney area. The tree is not to be transported out of eastern Sydney.
16. Tarpaulins covering the tree are to be disinfected or disposed of after transport.

8.0 Environmental / Heritage/ Legislative Considerations

None of the subject trees are identified as threatened species or elements of endangered ecological communities within the NSW Biodiversity Conservation Act 2016.

9.0 References

Mattheck, C. Breloer, K. 1993, The Body Language of Trees: A Handbook for Failure Analysis, 12th Impression 2010 The Stationery Office.
AS4970-2009 Protection of Trees on Development Sites: Standards Australia

10.0 Disclaimer

This Appraisal has been prepared for the exclusive use of the Client and Birds Tree Consultancy.

Birds Tree Consultancy accepts no responsibility for its use by other persons. The Client acknowledges that this Appraisal, and any opinions, advice or recommendations expressed or given in it, are based on the information supplied by the Client and on the data inspections, measurements and analysis carried out or obtained Birds Tree Consultancy and referred to in the Appraisal. The Client should rely on the Appraisal, and on its contents, only to that extent.

Every effort has been made in this report to include, assess and address all defects, structural weaknesses, instabilities and the like of the subject trees. All inspections were made from ground level using only visual means and no intrusive or destructive means of inspection were used. For many structural defects such as decay and inclusions, internal inspection is required by means of Resistograph or similar. No such investigation has been made in this case. Trees are living organisms and are subject to failure through a variety of causes not able to be identified by means of this inspection and report.

IACA Significance of a Tree, Assessment Rating System (STARS) © (IACA 2010) ©

In the development of this document IACA acknowledges the contribution and original concept of the Footprint Green Tree Significance & Retention Value Matrix, developed by Footprint Green Pty Ltd in June 2001.

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured qualitative criteria to assist in determining the retention value for a tree. To assist this process all definitions for terms used in the *Tree Significance - Assessment Criteria* and *Tree Retention Value - Priority Matrix*, are taken from the IACA Dictionary for Managing Trees in Urban Environments 2009.

This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of *High*, *Medium* and *Low* significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined.

Tree Significance - Assessment Criteria



1. High Significance in landscape

- The tree is in good condition and good vigour;
- The tree has a form typical for the species;
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age;
- The tree is listed as a Heritage Item, Threatened Species or part of an Endangered ecological community or listed on Councils significant Tree Register;
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity;
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values;
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa *in situ* - tree is appropriate to the site conditions.

2. Medium Significance in landscape

- The tree is in fair-good condition and good or low vigour;
- The tree has form typical or atypical of the species;
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street,
- The tree provides a fair contribution to the visual character and amenity of the local area,
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa *in situ*.

3. Low Significance in landscape

- The tree is in fair-poor condition and good or low vigour;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings,
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area,
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen,
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa *in situ* - tree is inappropriate to the site conditions,
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms,
- The tree has a wound or defect that has potential to become structurally unsound.

Environmental Pest / Noxious Weed Species

- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties,
- The tree is a declared noxious weed by legislation.

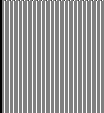
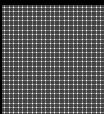
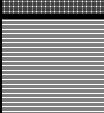
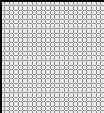
Hazardous/Irreversible Decline

- The tree is structurally unsound and/or unstable and is considered potentially dangerous,
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

The tree is to have a minimum of three (3) criteria in a category to be classified in that group.

Note: The assessment criteria are for individual trees only, however, can be applied to a monocultural stand in its entirety e.g. hedge.

Appendix B Tree Retention Values

		Significance				
		1. High	2. Medium	3. Low		
		Significance in Landscape	Significance in Landscape	Significance in Landscape	Environmental Pest / Noxious Weed Species	Hazardous / Irreversible Decline
Estimated Life Expectancy	1. Long >40 years					
	2. Medium 15-40 Years					
	3. Short <1-15 Years					
	Dead					
<p><u>Legend for Matrix Assessment</u></p> <div>  Priority for Retention (High) - These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 <i>Protection of trees on development sites</i>. Tree sensitive construction measures must be implemented e.g. pier and beam etc if works are to proceed within the Tree Protection Zone. </div> <div>  Consider for Retention (Medium) - These trees may be retained and protected. These are considered less critical; however their retention should remain priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted. </div> <div>  Consider for Removal (Low) - These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention. </div> <div>  Priority for Removal - These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development. </div>						

REFERENCES

Australia ICOMOS Inc. 1999, *The Burra Charter – The Australian ICOMOS Charter for Places of Cultural Significance*, International Council of Monuments and Sites, www.icomos.org/australia

Draper BD and Richards PA 2009, *Dictionary for Managing Trees in Urban Environments*, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood, Victoria, Australia.

Footprint Green Pty Ltd 2001, *Footprint Green Tree Significance & Retention Value Matrix*, Avalon, NSW Australia, www.footprintgreen.com.au

Appendix C - Tree Inspection Data

Birds Tree Consultancy

Consulting Arborist • Project Management • Horticultural Consultancy • Landscape Management

Inspection Data
Wyong Palms

16-Sep-23

Tree no.	Species	Common Name	Height	Spread(m)	Trunk (single, twin, multiple @)	TPZ Radius (m)	SRZ radius (m)	Trunk lean	Tree Age	Overall Health & Vigour	Crown Distribution	Structure	Pruning History	Defects	Pest / Disease	Canopy Density	Deadwood	Epicormic Growth	Life expectancy	Env. & Landscape significance	Retention Value	Notes
1	Phoenix canariensis	Canary Island Date Palm	13	6	1	3.5	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	Medium	Low	Evidence of Fusarium spp. infestation
2	Phoenix canariensis	Canary Island Date Palm	9	6	1	3.5	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	Medium	Low	Evidence of Fusarium spp. infestation
3	Phoenix canariensis	Canary Island Date Palm	12	7	1	4	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
4	Phoenix canariensis	Canary Island Date Palm	12	7	1	4	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
5	Phoenix canariensis	Canary Island Date Palm	10	6	1	3.5	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
6	Phoenix canariensis	Canary Island Date Palm	10	6	1	3.5	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
7	Phoenix canariensis	Canary Island Date Palm	9	6	1	3.5	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
8	Phoenix canariensis	Canary Island Date Palm	11	6	1	3.5	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation

Tree no.	Species	Common Name	Height	Spread(m)	Trunk (single, twin, multiple @)	TPZ Radius (m)	SRZ radius (m)	Trunk lean	Tree Age	Overall Health & Vigour	Crown Distribution	Structure	Pruning History	Defects	Pest / Disease	Canopy Density	Deadwood	Epicormic Growth	Life expectancy	Env. & Landscape significance	Retention Value	Notes
9	Phoenix canariensis	Canary Island Date Palm	11	6	1	3.5	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
10	Phoenix canariensis	Canary Island Date Palm	11	6	1	3.5	N/A	Nil	Mature	Poor (50-59)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	40%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
11	Phoenix canariensis	Canary Island Date Palm	12	6	1	3.5	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
12	Phoenix canariensis	Canary Island Date Palm	12	6	1	3.5	N/A	Nil	Mature	Poor (50-59)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
13	Phoenix canariensis	Canary Island Date Palm	12	6	1	3.5	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
14	Phoenix canariensis	Canary Island Date Palm	12	6	1	3.5	N/A	Nil	Mature	Poor (50-59)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	40%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
15	Phoenix canariensis	Canary Island Date Palm	7	6	1	3.5	N/A	Nil	Mature	Poor (50-59)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	40%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
16	Phoenix canariensis	Canary Island Date Palm	8	5	1	3	N/A	Nil	Mature	Poor (50-59)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	40%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
17	Phoenix canariensis	Canary Island Date Palm	10	6	1	3.5	N/A	Nil	Mature	Poor (50-59)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	40%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation

Tree no.	Species	Common Name	Height	Spread(m)	Trunk (single, twin, multiple @)	TPZ Radius (m)	SRZ radius (m)	Trunk lean	Tree Age	Overall Health & Vigour	Crown Distribution	Structure	Pruning History	Defects	Pest / Disease	Canopy Density	Deadwood	Epicormic Growth	Life expectancy	Env. & Landscape significance	Retention Value	Notes
18	Phoenix canariensis	Canary Island Date Palm	9	6	1	3.5	N/A	Nil	Mature	Poor (50-59)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	40%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
19	Phoenix canariensis	Canary Island Date Palm	7	5	1	3	N/A	Nil	Mature	Poor (50-59)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	40%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
20	Phoenix canariensis	Canary Island Date Palm	8	5	1	3	N/A	Nil	Mature	Poor (50-59)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	40%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
21	Phoenix canariensis	Canary Island Date Palm	9	5	1	3	N/A	Nil	Mature	Poor (50-59)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	40%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
22	Phoenix canariensis	Canary Island Date Palm	11	6	1	3.5	N/A	Nil	Mature	Poor (50-59)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	40%	N/A	6-10 years	High	Low	Evidence of Fusarium spp. infestation
23	Phoenix canariensis	Canary Island Date Palm	7	4	1	2.5	N/A	Nil	Mature	Poor (50-59)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	40%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
24	Phoenix canariensis	Canary Island Date Palm	9	5	1	3	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	40%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
25	Phoenix canariensis	Canary Island Date Palm	6	2	1	1.5	N/A	Nil	Mature	Poor (50-59)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	70%	N/A	1-5 years	Low	Low	Evidence of Fusarium spp. infestation
26	Phoenix canariensis	Canary Island Date Palm	11	8	1	4.5	N/A	Nil	Mature	Good (70-79)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	20%	N/A	6-10 years	High	Low	Evidence of Fusarium spp. infestation

Tree no.	Species	Common Name	Height	Spread(m)	Trunk (single, twin, multiple @)	TPZ Radius (m)	SRZ radius (m)	Trunk lean	Tree Age	Overall Health & Vigour	Crown Distribution	Structure	Pruning History	Defects	Pest / Disease	Canopy Density	Deadwood	Epicormic Growth	Life expectancy	Env. & Landcape significance	Retention Value	Notes
27	Phoenix canariensis	Canary Island Date Palm	11	8	1	4.5	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	40%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
28	Phoenix canariensis	Canary Island Date Palm	11		1	0.5	N/A	Prominent North	Mature	Poor (50-59)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	40%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
29	Phoenix canariensis	Canary Island Date Palm	14	8	1	4.5	N/A	Nil	Mature	Poor (50-59)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	40%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
30	Phoenix canariensis	Canary Island Date Palm	13	8	1	4.5	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
31	Phoenix canariensis	Canary Island Date Palm	13	7	1	4	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
32	Phoenix canariensis	Canary Island Date Palm	13	7	1	4	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation
33	Phoenix canariensis	Canary Island Date Palm	12	7	1	4	N/A	Nil	Mature	Fair (60-69)	Symmetrical	Good	No Evidence	No Evidence	Evidence of Fusarium spp. infestation	Thinning	30%	N/A	1-5 years	High	Low	Evidence of Fusarium spp. infestation

Appendix D - Tree Location Plan



Legend



Live Crown of Tree

Birds Tree Consultancy

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Project: Wyong Centre - Palms

Client: AECOM

DWG: A01

Plan: Tree Location Plan

Date: 19 Sept 2023 Scale : 1:750 @ A3