

Arboricultural Impact Assessment Report

7 Lismore Rd
Bangalow.
NSW 2479.

Client:
Mr Terry Healy

Report compiled by
Northern Tree Care
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18th December, 2019.



Table of Contents

1.	Introduction	3
2.	Scope	3
3.	Method	3
4.	Description	4
5.	Tree Significance	5
6.	Tree Retention Value	6
7.	Appraisal	7
8.	Recommendations	7
9.	Tree Protection	8
10.	Replacement Trees	9
11.	Disclaimer.	10
12.	Bibliography	10
13.	About the Author	10
14.	Attachment 1. Location Plan.	11
15.	Attachment 2. Currently Approved Plan.	12
16.	Attachment 3. Proposed Plan	13
17.	Attachment 4. Existing Trees	14
18.	Attachment 5. Protective Fencing.	15
19.	Attachment 6. Replacement Planting.	16
20.	Attachment 7. Photos	17

1. Introduction

Peter Gray has compiled this report on request from Mr Terry Healy, owner of the property at 7 Lismore Rd, Bangalow, NSW 2479 Lot 16 in DP 1227099. Mr Healy has recently purchased the property. There was an approved development 10.2018.506.1 for the construction of a dwelling on the land. The previous owner Mr D Robinson was granted approval for the DA on 15th July, 2018. Mr Healy wishes to amend the approval to allow the construction of a garage and pool on the land as well as the dwelling. There is a large Norfolk Island Pine and a group of young rainforest trees growing on the property.

2. Scope

This report describes the trees and assesses their significance in the landscape. The likely affect of the proposed amendment is assessed and recommendations regarding the suitability of the trees for retention in the development are made.

3. Method

The trees were assessed visually from the ground. The diameter at breast height (DBH) was measured at 1 m above ground level with a girthing tape. The height of the trees was measured with a hypsometer. The methods recommended in the Australian Standard AS 4970-2009 *Protection of trees on development sites* was used assess the trees.

The health and condition of the trees was assessed using the Visual Tree Assessment method (Mattheck & Breloer 2003). This is a method of assessing the trees using the body language or shape and features of the trees to indicate their condition. These tree shapes or body language are a reliable indicator of the underlying condition of that part of the tree. The trees were identified using the signs and features present at the time of inspection.

The information in this report is derived from a site visit carried out on 28th March, 2019 and from documents and plans supplied by Mr Healy. The documents and drawings are:

- *Notice of Determination of a Development Application No. 10.2018.506.1.* Byron Shire Council. 15/7/2018.
- *Development Application Evaluation Report DA No. 10.2018.506.1.* Byron Shire Council
- *Tree Report.* Byron Tree Services. 27th March, 2018.

4. Description

The subject property is a vacant block of land at 7 Lismore Rd, Bangalow NSW 2479, Lot 16 in DP 12209. The land is zoned R2 Low Density Residential. It is located on the outskirts of the residential area of Bangalow and next to the heritage listed Reading Building. The property fronts Lismore Rd to the west and has private residences to the south and east. The Reading building is adjacent to the north. The land is constrained by a Heritage Conservation Area listing.

The land is relatively flat and the soil is clay loam red krasnozem. This soil is relatively deep, fertile and well suited to the growth of trees.

There is a large Pine tree growing to the rear of the property and a group of recently planted rainforest trees in the south east corner of the property. The Pine tree was previously incorrectly identified as the local native species Hoop Pine *Araucaria cunninghamii*. On 27th May, 2018 a Request for Further Information letter was sent to Mr Robinson that asked at 2. for an Arborist report regarding the “Hoop Pine”.

The approval for the development application was granted on 15th July subject to Condition 3. Protection of Norfolk Island Pine;

The development must retain and protect the Norfolk Island Pine on the site which is part of the ecology and heritage of the locality. The development must be carried out at all times in accordance with the recommendations of the letter by Alex Nowell of Byron Tree Services dated 5th July, 2019 in order to protect the Norfolk Island Pine tree.

The Pine tree is identified as a Norfolk Island Pine *Araucaria heterophylla* (Earle 2019). The species is endemic to Norfolk Island and is now grown as an ornamental tree throughout the world. The Pine tree report and the group of trees growing on the subject property are described in detail in **Table 1. Tree Data.**

Table 1. Tree Data.

Tree #	Name	Condition	Height m	DBH mm	Crown m	TPZ m	SRZ m
1	Norfolk Island Pine <i>Araucaria heterophylla</i>	Good	25	960	9	11.5	3.4
2	Pepperberry <i>Cryptocarya obovata</i>	Good	8	120	3	2.0	1.5
3	Lilli Pilli <i>Syzygium</i> sp.	Good	7	120	3	2.0	1.5
4	Lilli Pilli <i>Syzygium</i> sp.	Good	7	120	3	2.0	1.5
5	Lilli Pilli <i>Syzygium</i> sp.	Good	7	120	3	2.0	1.5
6	Lilli Pilli <i>Syzygium</i> sp.	Good	7	120	3	2.0	1.5
7	Red Apple <i>Syzygium ingens</i>	Good	9	240	4	2.9	1.9

(Earle 2019; Harden et al 2009).

5. Tree Significance

When considering the retention value of trees, two major issues were considered. They are the significance of the tree and its estimated life expectancy.

When assigning a value to the significance of the tree a number of factors should be considered (Moreton 2003). The significant outcomes have been determined in **Attachment 2. Significance of the Tree in the Landscape**

Table 2. Significance of Tree in the Landscape.

Tree #	Name	Condition	Vigour	Protected	Environmental value	Amenity value	Heritage value	Significance
1	Norfolk Island Pine <i>Araucaria heterophylla</i>	Good	Good	Yes	Medium	High	Medium	Moderate
2	Pepperberry <i>Cryptocarya obovata</i>	Good	Good	Yes	High	Medium	Medium	Low
3	Lilli Pilli <i>Syzygium</i> sp.	Good	Good	Yes	High	Medium	Medium	Low
4	Lilli Pilli <i>Syzygium</i> sp.	Good	Good	Yes	High	Medium	Medium	Low
5	Lilli Pilli <i>Syzygium</i> sp.	Good	Good	Yes	High	Medium	Medium	Low
6	Lilli Pilli <i>Syzygium</i> sp.	Good	Good	Yes	High	Medium	Medium	Low
7	Red Apple <i>Syzygium ingens</i>	Good	Good	Yes	High	Medium	Medium	Low

6. Tree Retention Value

Once the significance of the tree in the landscape has been determined, it can be assessed against its Estimated Life Expectancy. The values for the trees have been placed into **Table 3. Tree Retention Values** below.

Table 3. Tree Retention Values

	Landscape Significant Rating						
	1 Significant	2 Very High	3 High	4 Moderate	5 Low	6 Very Low	7 Insignificant
Estimated Life Expectancy	Greater than 40 years	High Retention Value			Moderate Retention Value # 1	Low Retention Value	
	15 to 40 years				# 2, 3, 4, 5, 6, 7		
	5 to 15 years						
	Less than 15 years					Very Low Retention Value	

Ref:- Modified from

Couston, Mark & Howden, Melanie (2001) *Tree Retention Values Table*. Footprint Green Pty Ltd, Sydney Australia

Where trees have a high retention value they should be retained and protected in the development if possible. Where trees have a low retention value they can be removed if they conflict with the development. Where there is no conflict they may be retained (Barrell 2006). Where the trees are considered important and they conflict with the development, a decision must be made as to whether the tree or the development is more important. The environmental, aesthetic and heritage value of the trees should all be taken into consideration when making that decision.

7. Appraisal

Tree # 1.

Norfolk Island Pine *Araucaria heterophylla*

This is a large tree growing at the rear of the property. The tree was wrongly identified as a local native species Hoop Pine *Araucaria cunninghamii* by the surveyor and architect who drew the plans for DA 10.2018.506.1 (see Attachment 2. Site Detail). The tree was first correctly identified as *Araucaria heterophylla* by Byron Tree Services and all subsequent references to it are to a Norfolk Island Pine. Norfolk Island Pine is not a local native species although it has been widely planted as an amenity tree. As it grows to a very large size it is best suited to park and street planting. In small urban allotments the large size of the tree is unsuitable.

The tree is growing in the footprint of the current proposal to construct a garage on the property. The site of the garage is the only practical position to locate a garage. The land zoning permits the building of a garage.

Retention of the tree is not possible if a garage is built on the property. The tree therefore conflicts with the development. The tree is assessed as having a moderate retention value. If the residence is constructed as approved, the visibility from the street will be reduced. When considering whether to allow development that conflicts with tree retention a judgement must be made as to whether the tree or the development is more important. In this case the proposed development is allowed under the zoning. The tree has only a moderate retention value and the visibility and therefore the aesthetic amenity to the community will be reduced by construction of the approved dwelling. The tree is common, has little benefit to the local ecological environment and is an exotic species. The best reason for retaining the tree is that it is growing in a Heritage Conservation Area.

Trees # 2, 3, 4, 5, 6 and 7 are all small local native rainforest species that have been planted. It is proposed to retain all of these trees.

8. Recommendations

It is recommended that tree # 1 Norfolk Pine tree be removed to allow the construction of the proposed garage. Byron Shire Development Control Plan 2014 Chapter B2 Preservation of Trees and Other Vegetation provides for the replacement of trees removed. It is proposed to replace the tree at the ratio of 10:1. There is sufficient room in the south east corner of the property to plant 10 replacement trees (see Attachment 5 Replacement Planting).

It is recommended that the trees to be retained, trees # 2, 3, 4, 5, 6 and 7 be protected during construction. Details of the recommended measures to be taken for the protection of the trees is given in 10. Tree Protection.

9. Tree Protection

The trees retained on the site should be protected during construction in accordance with the recommendations of the Australian Standard AS 4970-2009 *Protection of trees on development sites*. The standard sets out a Tree Protection Zone that is calculated to be an area around the tree with a radius of 12 times the diameter at breast height (DBH). The TPZ has a maximum radius of 15m. The TPZ should be protected during development to ensure the viability of the tree.

The Standard lists activities that are prohibited in the TPZ. They are:

- (a) machine excavation including trenching;*
- (b) excavation for silt fencing;*
- (c) cultivation;*
- (d) storage;*
- (e) preparation of chemicals, including preparation of cement products;*
- (f) parking of vehicles and plant;*
- (g) refuelling;*
- (h) dumping of waste;*
- (i) wash down and cleaning of equipment;*
- (j) placement of fill;*
- (k) lighting of fires;*
- (l) soil level changes;*
- (m) temporary or permanent installation of utilities and signs, and*
- (n) physical damage to the tree.*

The proposed development will be constructed close to trees that are planned to be retained. The Standard recommends tree protective fencing consisting of 1.8 m high panels be positioned at the edge of the TPZ. In this case the use of 1.8 m high panels is considered to be impractical and instead it is recommended that 1 m high visibility plastic mesh fence be used to protect as much of the TPZ's as is practicable. An example of a suitable high visibility plastic mesh fence is shown in Figure 1 below. The recommended location of the fencing is shown in Attachment 5. Protective Fencing. The recommended location of the fencing is shown in Attachment 6. Protective Fencing.



Figure 1.
Example of high visibility temporary fencing.

10. Replacement Trees

Byron Shire Council's Development Control Plan 2014 Chapter B2 Preservation of Trees and Other Vegetation Section B2.2.2 provides that where trees are removed they are likely to be required to be replaced. The replacement ratio for the Norfolk Island Pine tree is likely to be 10:1. Council does not require species like for like replacement. A list of suitable tree species is shown in Table 4 Compensatory Planting Species List.

Not all of the species shown in the list must be planted and the list is not exhaustive. Other local native rainforest tree species can be used. There is an area available for planting that is considered large enough to accommodate the required compensatory planting (see Attachment 5 Replacement Planting).

Table 4. Compensatory Planting Species List.

Bangalow Palm *Archontophoenix cunninghamiana*
Blueberry Ash *Elaeocarpus reticulatus*
Brown Pine *Podocarpus elatus*
Firewheel Tree *Stenocarpus sinuatus*
Small Leaved Tamarind *Diploglottis campbellii*
Three Veined Laurel *Cryptocarya triplinervis*
Yellow Pearfruit *Mischocarpus pyriformis*
Yellowwood *Flindersia xanthoxyla*

11. Disclaimer

The information contained in the report is true and accurate to the best knowledge of the author. Best professional judgement was used to make recommendations. However the author of this report is not responsible for any action which might be taken or not taken in reliance on it.

This report remains the property of the author and Mr Darren. Williams. It may not be used or reprinted without their express permission.

12. Bibliography

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13. About the Author

This report was compiled by Peter Gray, of Northern Tree Care. The author is an arborist who has been providing Arborist Assessment Reports for Local Government, State Government and private clients for over 15 years. His qualifications include:

- Graduate Certificate of Arboriculture (AQF 8)
- Diploma of Arboriculture (AQF level 5)
- Diploma of Horticulture (Arboriculture)
- Quantified Tree Risk Assessment (QTRA)
- VALID Tree Risk-Benefit Management Validator

He is a registered general member of Arboriculture Australia No. 2344, trained and registered practitioner of Quantified Tree Risk Assessment (QTRA) Registered User number 980 and a registered member of VALID Tree Risk-Benefit Management..

I declare that I have compiled this report impartially using best professional judgement. I have no financial interest in the outcome of the report.

Signed Peter Gray, Northern Tree Care
18th December, 2019.

14. Attachment 1. Location Plan.



[illegible]

PROPOSED DEVELOPMENT
LOT 16 IN DP 1227099
7 LISMORE ROAD, BANGALOW

DRIVEWAY PLAN

NOT FOR CONSTRUCTION: SUBJECT TO DETAILED SURVEY & DESIGN.

NOTES:

1. ALL FINISHED SURFACES TO BE SELF DRAINING TO AVOID PONDING
2. APPROX EXISTING CONTOURS SHOWN AT 0.25m INTERVALS
3. UNDERGROUND SERVICES IN APPROXIMATE POSITION ONLY
4. PROTECT ANY EXISTING SERVICES

DRIVEWAY PAVEMENT DETAILS

CONCRETE AREAS
 100mm THICK CONCRETE
 F₁ = 25MPa, S143 MESH
TURNING AREA
 100mm THICK GRAVEL, LIGHTLY COMPACT TO 20% WETTED DEPTH

Scale: 1:250

North Arrow: (Indicated by a line pointing towards the top right of the plan)

Surveyor: Ishwinder Thind, Professional Engineer, No. 1227099

Project: Proposed Development, Lot 16 in DP 1227099, 7 Lismore Road, Bangalow

Sheet: 1 of 3

CONCRETE AREAS
100mm THICK CONCRETE
C15 = 25MPa, SUEH SH
TURNING AREA
100mm THICK GRAVEL
LIGHTLY COMPACTED
ON WOVEN GEOTEXTILE

NOTES:

1. ALL FINISHED SURFACES TO BE SELF-DRAINING TO AVOID PONDING.
2. APPROX EXISTING CONTOURS.
3. UNDERGROUND SERVICES IN APPROXIMATE POSITION ONLY. PROTECT ANY EXISTING SERVICES.

NOT FOR CONSTRUCTION: SUBJECT TO DETAILED SURVEY & DESIGN.

PROPOSED DEVELOPMENT

LOT 16 IN DP 1227099

7 LISMORE ROAD, BANGALOW

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consulting engineers

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PROPOSED DEVELOPMENT
LOT 16 IN DP 1227099
7 LISMORE ROAD, BANGALOW

Project: Proposed Development
Lot 16 in DP 1227099
7 Lismore Road, Bangalow

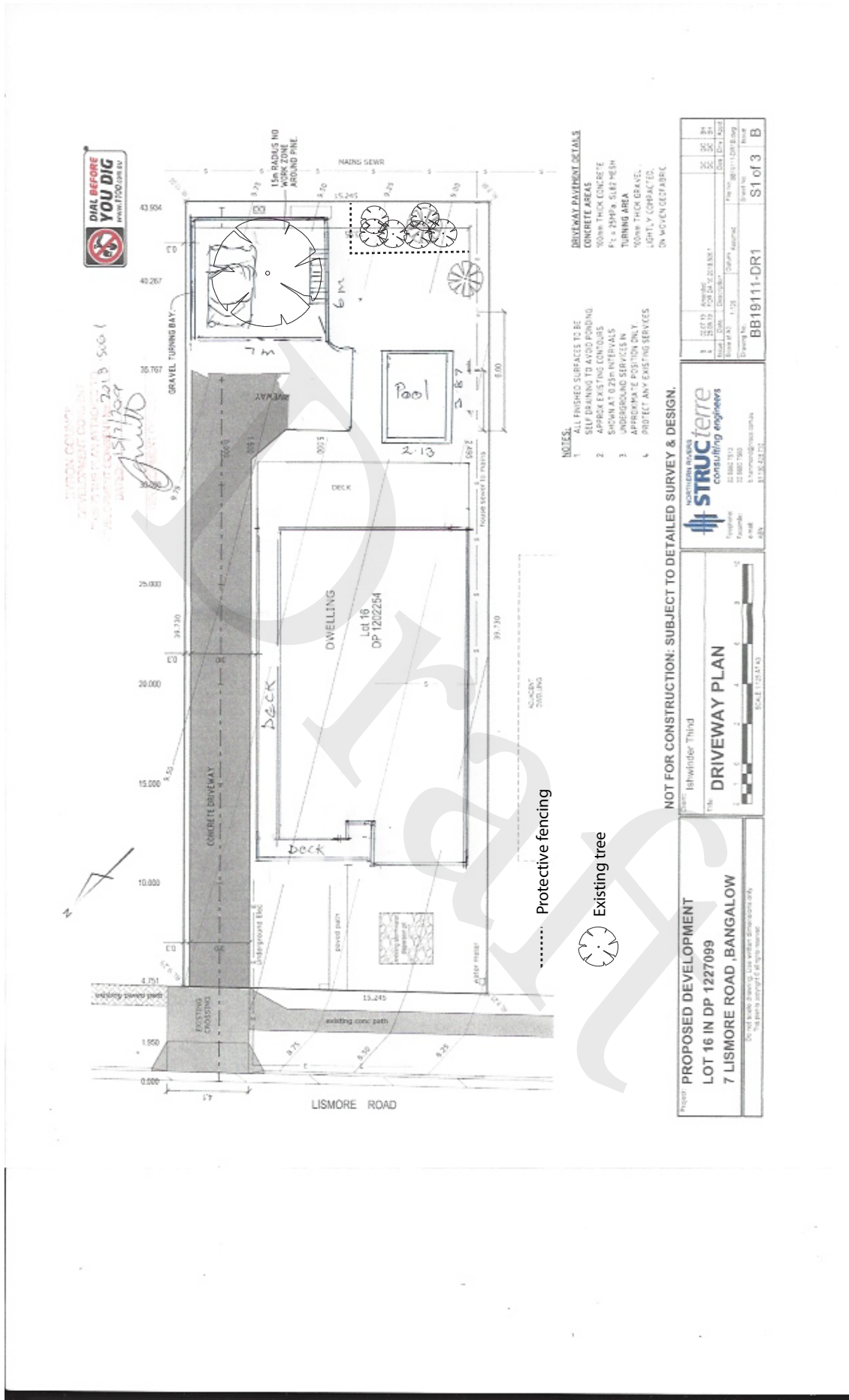
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North Arrow

Notes:
1. ALL FINISHED SURFACES TO BE
2. SELF DRAINING TO AVOID PONDING
3. APPROX EXISTING CONTOURS
4. SHOWN AT 0.25M INTERVALS
5. UNDERGROUND SERVICES IN
6. APPROPRIATE POSITION ONLY
7. PROTECT ANY EXISTING SERVICES

NOT FOR CONSTRUCTION. SUBJECT TO DETAILED SURVEY & DESIGN.

STRUTTER consulting engineers
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18. Attachment 5. Protective Fencing.



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20. Attachment 7. Photos



Photo 1
Tree # 1
Norfolk Island Pine.



Photo 2
Tree # 2, 3, 4, 5, 6, 7
Planted trees.