ARBORICULTURAL IMPACT REPORT

8 LIDO AVENUE
NORTH NARRABEEN NSW

12 JULY 2019

PREPARED FOR JENNY SHARPLES

Prepared by:
Guy Paroissien
Landscape Matrix Pty Ltd.
ABN 53 110 564 102
T/F. 9943 6510, M. 0425 342 051
40 Timbarra Road St Ives NSW 2075
E-mail: landscapematrix@optusnet.com.au

1. BACKGROUND

Landscape Matrix Pty Ltd has been engaged by Jenny Sharples to prepare an Arboricultural Impact Report in respect to 9 trees potentially affected by proposed additions to the dwelling and a swimming pool at 8 Lido Avenue North Narrabeen (the site). The trees assessed for this report are located in the front and rear garden areas of the site.

This report has been prepared by Guy Paroissien a Director of Landscape Matrix Pty Ltd. The site was inspected on 9th July 2019 to collect the data for 9 trees at the site.

The assessment of the trees is based upon a visual inspection of the trees from ground level using elements of the Visual Tree Assessment (VTA) method described by Mattheck & Breloer (1994). The Useful Life Expectancy (ULE) categories identified in the report follows Barrell (1996).

The inspection was limited to visual inspection of the trees without dissection, probing or coring. No aerial inspection of the trees was carried out and the assessment did not include any woody tissue testing or subterranean root investigation.

The tree heights and canopy spreads were estimated and are expressed in metres and the tree diameters at breast height (DBH) were measured using a standard metal tape and are expressed in millimetres. The DBH for trees 5 and 7 was estimated from the nearest boundary.

Measurements from the trees referred to in this report are to be taken as if measured from the centre of the trees' trunks.

2. TREES ASSESSED FOR THIS REPORT

Nine mature trees have been assessed in preparing this report. The trees assessed for this report are located in the front and rear garden areas of the site. The location and context of the site is illustrated in the photograph on the cover page of this report.

A summary of these trees, their dimensions, condition, Useful Life Expectancy (ULE) and landscape significance is attached in Appendix B. The ULE categories identified in Appendix B follow those of Barrell (1996).

The locations of the trees are shown on the Site Plan and Site Analysis Plan prepared by Ukalovic Design Architectural Drafting Services dated 9/7/2019 and identified as Project Number 1840, Sheet 2 of 13.

The nine trees are summarised in table 1 as follows:

Table 1: Summary of trees assessed at 8 Lido Avenue North Narrabeen

Tree Number	Species and Common Name	Summary
1	*Libidibia ferrea syn Caesalpinia ferrea* (Leopard Tree)	A mature, multi trunked specimen approximately 8 metres in height with a canopy spread of 13 metres and diameters at breast height (DBH) of up to 360mm (520mm above the root flare). In good health and of moderate to high landscape significance. The tree displays fair branch attachment with codominant leaders from 1 metre and multiple leaders from 1.2 metres with some evidence of poor attachment - not considered at risk of failure in the short term. At the time of inspection the tree exhibited low levels of dieback in the lower crown branches.
2	*Jacaranda mimosifolia* (Jacaranda)	A mature, single trunked specimen approximately 8 metres in height with a canopy spread of 5 x 7 metres and a DBH of 320mm. In good health and of moderate landscape significance. The tree's past canopy development has been suppressed. At the time of inspection the tree was of fair vigour and exhibited low levels of dieback in the upper crown. Exempt species.
3	*Cupressus sempevirens* (Italian Cypress, Mediterranean Cypress)	A mature, single trunked specimen approximately 9 metres in height with a canopy spread of 2 metres and a DBH of 340mm. In good health and of moderate landscape significance. Exempt species.
4	*Syagrus romanzoffiana* (Cocos Palm, Queen Palm)	A mature, single trunked specimen approximately 7 metres in height with a canopy spread of 6 metres and a DBH of 230mm. In good health and an environmental pest species of moderate visual significance. significance. Environmental pest species. Exempt species.
5	*Casuarina glauca* (Swamp Oak)	A mature, multi trunked specimen approximately 12 metres in height with a canopy spread of 13 metres and DBH of 480, 490 and 480mm. In moderate health and of moderate to high landscape significance. The tree displays fair branch attachment with multiple leaders from ground level with evidence of poor attachment at the junction - the junction is a weak point in the tree's structure with increased risk of failure. There is also evidence of past branch failures. At the time of inspection the tree was of moderate health and poor vigour and exhibited significantly reduced foliage size and density and moderate levels of dieback. Short ULE.
6	*Casuarina glauca* (Swamp Oak)	A mature, twin trunked specimen approximately 12 metres in height with a canopy spread of 6 metres and DBH of 250 and 360mm. In good health and of moderate landscape significance. The tree's past canopy development has been significantly suppressed. Th tree displays fair branch attachment with codominant leaders from ground level with some evidence of poor attachment - not considered at risk of failure in the short term.
7	*Casuarina glauca* (Swamp Oak)	A mature, twin trunked specimen approximately 14 metres in height with a canopy spread of 3 x 5 metres and DBH of 180 and 400mm. In good health and of moderate landscape significance. Continued…

		The tree's past canopy development has been significantly suppressed. Th tree displays fair to poor branch attachment with evidence of a past failure at 1 metre to ground level on the south side with subsequent decay entry and associated reaction wood - not considered at risk of failure at the moment due to good vigour (ongoing production of reaction wood) and shelter provided by adjacent trees.
8	*Casuarina glauca* (Swamp Oak)	A mature, twin trunked specimen approximately 15 metres in height with a canopy spread of 9 metres and DBH of 370 and 400mm. In good health and of moderate to high landscape significance. The tree's past canopy development has been significantly suppressed. Th tree displays fair branch attachment with codominant leaders from ground level with some evidence of poor attachment (small bark inclusion) - not considered at risk of failure in the short term - monitoring of junction recommended.
9	*Casuarina glauca* (Swamp Oak)	A mature, multi trunked specimen approximately 14 metres in height with a canopy spread of 8 x 10 metres and DBH of 260, 290 and 480mm. In good health and of moderate to high landscape significance. The tree displays fair to poor branch attachment with multiple leaders from ground level with some evidence of poor attachment - this poor attachment is compounded by past wounding in the main leader with evidence of significant decay extending from 1.2 metres into the basal trunk at the junction of trunks - this is a weak point in the tree with increased risk of failure. There is also evidence of past wounding (following a branch failure) on the eastern leader at 1.6 metres with extensive decay. Risk of failure will increase if any adjacent trees are removed resulting in increased wind loading. Short ULE.

3. IDENTIFICATION OF SETBACKS FOR THE TREES

A number of methods to determine the likely extent of root zones and appropriate setbacks for tree root protection zones for trees on development sites have been developed in the past. The key criteria used in determining setbacks is the tree's trunk diameter at breast height (DBH) in conjunction with other factors including the sensitivity of the species in question to environmental disturbance/change, the age of the tree and the tree's health and vigour at the time.

Harris et al (2004) provide formulae for calculating tree protection zones based on the above criteria and modified from the 1991 British Standard for protection of trees on construction sites (BS 5837:1991). The 2005 version of the British Standard (BS 5837:2005) recommends a radius of 12 times the tree's DBH. For multi trunked trees BS 5837:2005 recommends a setback of 10 times the basal trunk diameter.

The Australian Standard AS 4970-2009 Protection of Trees on Construction Sites also identifies a 'Tree Protection Zone' of 12 times the tree's DBH. The Australian Standard also provides a formula for calculating the "Structural Root Zone' of trees on development sites. In regard to palms, other monocots, cycads and tree ferns the Standard identifies the Tree Protection Zone should not be less than 1 metre outside the crown projection. (Australian Standards Association 2009)

The tree protection zones identified below have been calculated using the Australian Standard AS 4970 Protection of Trees on Construction Sites and are the identified setback from the trees where disturbance (e.g. soil level changes, compaction, excavation etc) should be minimised to reduce potential impacts on the long term health of the trees.

Table 2: Tree Protection Zones - 8 Lido Avenue North Narrabeen

Tree Number	Species and Common Name	Tree Protection Zone	Structural Root Zone
1	*Libidibia ferrea syn Caesalpinia ferrea* (Leopard Tree)	6.2 metres	2.5 metres
2	*Jacaranda mimosifolia* (Jacaranda)	3.8 metres	2.3 metres
3	*Cupressus sempevirens* (Italian Cypress, Mediterranean Cypress)	4.1 metres	2 metres
4	*Syagrus romanzoffiana* (Cocos Palm, Queen Palm)	4 metres	N/A
5	*Casuarina glauca* (Swamp Oak)	10.1 metres	3.6 metres
6	*Casuarina glauca* (Swamp Oak)	6 metres	2.6 metres
7	*Casuarina glauca* (Swamp Oak)	5.3 metres	2.6 metres
8	*Casuarina glauca* (Swamp Oak)	6.5 metres	2.7 metres
9	*Casuarina glauca* (Swamp Oak)	7.4 metres	2.9 metres

Preferably, no more than 10% of the tree protection zone should be disturbed with compensation made by extension of other areas of the tree protection to compensate for the area(s) disturbed. Where greater than 10% of the tree protection zone is potentially disturbed the tree's viability needs to be investigated and demonstrated by the project arborist.

The structural root zone is the area required for stability and where disturbance of any sort should be avoided

4. POTENTIAL IMPACTS ON THE TREES

The extent of impacts to the trees has been assessed on the basis of the information provided in the Site Plan and Site Analysis Plan prepared by Ukalovic Design Architectural Drafting Services dated 9/7/2019 and identified as Project Number 1840, Sheet 2 of 13.

The extent of potential impacts to the trees is summarised in the table 3 as follows and has been rated using the following guideline:

0% of root zone impacted – no impact of significance
0 to 10% of TPZ impacted – low level of impact
10 to 15% of TPZ impacted – low to moderate level of impact
15 to 20% of TPZ impacted – moderate level of impact
20 to 25% of TPZ impacted – moderate to high level of impact
25 to 35% of TPZ impacted – high level of impact
>35% of TPZ impacted – significant level of impact

The root zone calculations referred to in this report were made using scale drawings of the trees' identified tree protection zones (TPZ) in a CAD program (TurboCAD®) with potentially affected areas added to the drawing. The area of potential impact was converted to a percentage of TPZ using a spreadsheet (Microsoft Excel®).

Table 3: Summary of potential impacts on the trees – 8 Lido Avenue North Narrabeen

Tree Number	Species and Common Name	Summary
1	*Libidibia ferrea syn Caesalpinia ferrea* (Leopard Tree)	The proposed porch area is located 2.68 metres from the tree at the closest point and is calculated to encroach within 6.77m^2 or 5.54% of the tree's identified TPZ – this is a low level of impact and within an acceptable threshold. In addition, the porch is to be constructed above existing grade, minimising disturbance. The roof line for the porch and over the existing forward section of the dwelling is to be at a higher profile than the existing roof profile and will require pruning of several lower branches from the tree. The pruning will not affect the overall shape of the tree's crown and is considered to be within an acceptable threshold. The 1st floor addition will be located at the outer edge of the crown spread and will not require any pruning of substance. All pruning is to be undertaken in accordance with AS4373-2007 pruning of amenity trees. Continued next page…

		The proposed front fence is within the tree's TPZ and SRZ – it is recommended the fence be constructed as a lightweight elevated structure to avoid a strip footing in the tree's SRZ – piers to be located by hand excavation to avoid removal of or damage to roots of 30mm diameter or greater.
2	*Jacaranda mimosifolia* (Jacaranda)	The tree is identified to be removed as part of the works. (NB: Exempt species)
3	*Cupressus sempevirens* (Italian Cypress, Mediterranean Cypress)	The tree is identified to be removed as part of the works. (NB: Exempt species)
4	*Syagrus romanzoffiana* (Cocos Palm, Queen Palm)	The proposed pool area is located 3.1 metres from the tree at the closest point and is calculated to encroach within 1.69m^2 o 3.36% of the tree's identified TPZ – this is a low level of impact and within an acceptable threshold.
5	*Casuarina glauca* (Swamp Oak)	The proposed pool area is located 7 metres from the tree at the closest point and the pool 8.2 metres form the tree – these structures combined are calculated to encroach within 14.05m^2 or 4.4% of the tree's identified TPZ – this is a low level of impact and within an acceptable threshold.
6	*Casuarina glauca* (Swamp Oak)	The proposed pool area is located 7.26 metres from the tree at the closest point and is outside the tree's identified TPZ – no impact of substance.
7	*Casuarina glauca* (Swamp Oak)	The proposed pool area is located 7.8 metres from the tree at the closest point and is outside the tree's identified TPZ – no impact of substance.
8	*Casuarina glauca* (Swamp Oak)	The proposed pool area is located 9 metres from the tree at the closest point and is outside the tree's identified TPZ – no impact of substance.
9	*Casuarina glauca* (Swamp Oak)	The proposed pool area is located 8.63 metres from the tree at the closest point and is outside the tree's identified TPZ – no impact of substance.

<u>The potential impacts can be summarised as follows:</u>

- The proposed works are outside the identified TPZs of tree numbers 6, 7, 8 and 9 and no impact of substance is predicted for these trees.
- The proposed works will impact on less than 10% of the identified TPZs of tree numbers 1, 4 and 5 and is a low level of impact and within an acceptable threshold for these trees. Tree number 1 will require pruning of lower branches to accommodate the raised roof profile but this is considered to be within an acceptable threshold. It is also recommended the fence in the SRZ/TPZ of tree number 1 be constructed as a lightweight elevated structure to avoid a strip footing in the tree's SRZ – piers to be located by hand excavation to avoid removal of or damage to roots of 30mm diameter or greater.
- Tree numbers 2 and 3 are proposed to be removed as part of the works – both of these trees are 'exempt species' under Northern Beaches Council tree management controls (i.e. they can be removed without the need to obtain consent).

5. TREE PROTECTION MEASURES

The following generic tree protection measures are recommended to assist in minimising potential impacts to trees proposed for retention at the site.

A. Measures to be implemented prior to the commencement of any works on the site.

1. Tree to be retained are to be clearly identified by signage as protected trees.

2. The tree protection zones (TPZ) of trees to be retained are to be protected by fencing during the entire construction period except for specific areas directly required to achieve construction works.

3. The tree protection fence shall be constructed of galvanised pipe at 2.4 metre spacing and connected by securely attached chain mesh fencing to a minimum height of 1.8 metres and shall be installed prior to work commencing.

4. The tree protection fencing shall be installed as closely as possible to the alignment of the identified TPZ and shall be approved and certified by the site arborist prior to commencement of any construction or demolition works on the site.

B. Measures to be implemented and maintained during the life of construction works on the site.

5. Any excavation within the identified TPZ of trees to be retained shall be carried out by hand to minimize disturbance to tree roots. Roots greater than 40mm are not to be damaged or severed without prior assessment by an arborist to determine likely level of impact and the restorative actions required to minimise the impacts of root damage.

6. The following activities/actions are prohibited from the tree protection zones:

- Soil cut or fill including excavation and trenching
- Soil cultivation, disturbance or compaction
- Stockpiling storage or mixing of materials
- The parking, storing, washing and repairing of tools, equipment and machinery
- The disposal of liquids and refueling
- The disposal of building materials
- The sitting of offices or sheds
- Any action leading to the impact on tree health or structure

7. Canopy pruning of trees identified for protection which is necessary to accommodate approved building works shall be undertaken in accordance with *Australian Standard 4373-2007 'Pruning of Amenity Trees'*.

6. CONCLUSION

Nine mature trees have been assessed for this report. The trees assessed for this report are located in the front and rear garden areas of the site.

The trees comprise a mix of planted exotic species and remnant trees in a modified landscape setting. The majority of the trees were in good health at the time of inspection with the exception of tree number 5 which is of poor vigour. Tree numbers 6, 7, 8 and 9 exhibited structural issues of varying magnitude.

<u>The potential impacts can be summarised as follows:</u>

- The proposed works are outside the identified TPZs of tree numbers 6, 7, 8 and 9 and no impact of substance is predicted for these trees.
- The proposed works will impact on less than 10% of the identified TPZs of tree numbers 1, 4 and 5 and is a low level of impact and within an acceptable threshold for these trees. Tree number 1 will require pruning of lower branches to accommodate the raised roof profile but this is considered to be within an acceptable threshold. It is also recommended the fence in the SRZ/TPZ of tree number 1 be constructed as a lightweight elevated structure to avoid a strip footing in the tree's SRZ – piers to be located by hand excavation to avoid removal of or damage to roots of 30mm diameter or greater.
- Tree numbers 2 and 3 are proposed to be removed as part of the works – both of these trees are 'exempt species' under Northern Beaches Council tree management controls (i.e. they can be removed without the need to obtain consent).

Generic tree protection measures are identified in section 5 of this report.

Guy Paroissien MAIH, MIACA, MISA, MAA
M Env. Mgt. & Restor., Dip. Arboriculture, Hort. Cert., Tree Care Cert.
Director
Landscape Matrix Pty Ltd
12th July 2019

BIBLIOGRAPHY/REFERENCES

Australian Standards Association (2007) AS 4373- 2007 - Australian Standard 4373-2007 'Pruning of Amenity Trees'.

Australian Standards Association (2009) AS 4790- 2009 - Australian Standard 4790-2009 'Protection of trees on development sites'.

Barrell J (1996) - Pre-planning Tree Surveys: SULE is the Natural Progression. Arboricultural Journal 17, 33-46.

Harris et al (2004). Harris RW, Clark JR, Matheny NP: Arboriculture – Integrated Management of Landscape Trees Shrubs and Vines 4TH Edition. Prentice Hall, New Jersey 07458.

Mattheck & Breloer (1994) – The Body Language of Trees – a handbook for failure analysis - Research for Amenity Trees No. 4. Published by TSO (The Stationary Office) Norwich UK.

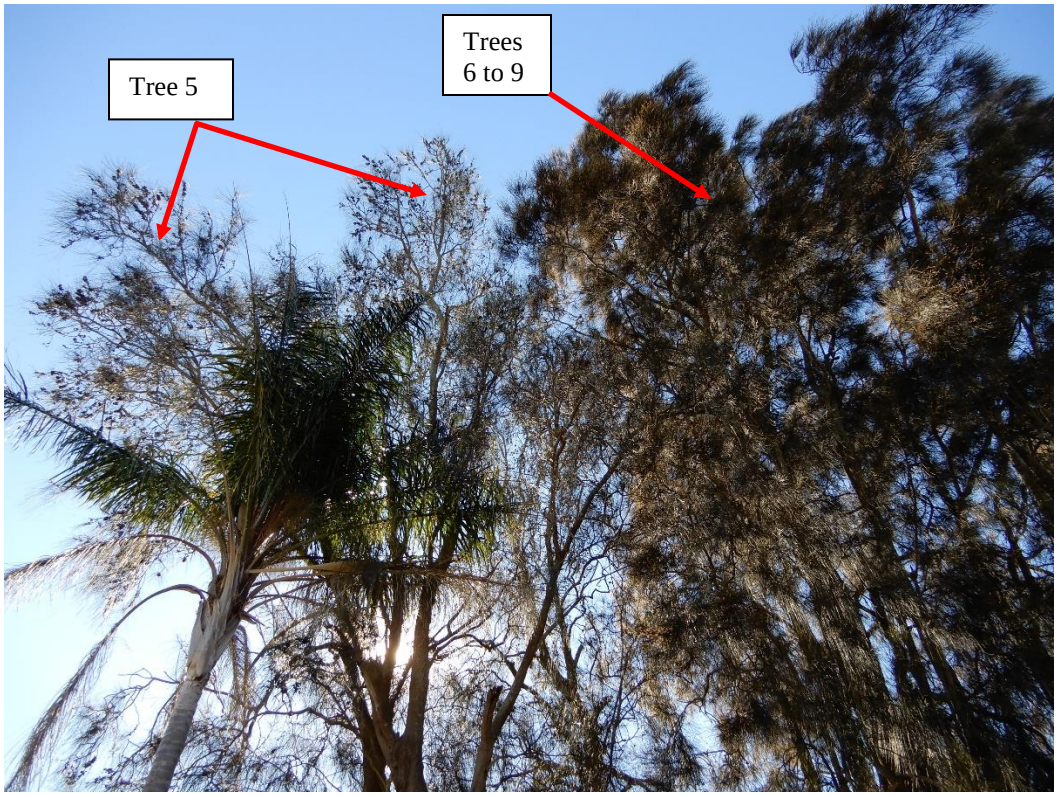
Ukalovic Design Architectural Drafting Services (2019) - Site Plan and Site Analysis Plan prepared by Ukalovic Design Architectural Drafting Services dated 9/7/2019 and identified as Project Number 1840, Sheet 2 of 13.

APPENDIX A

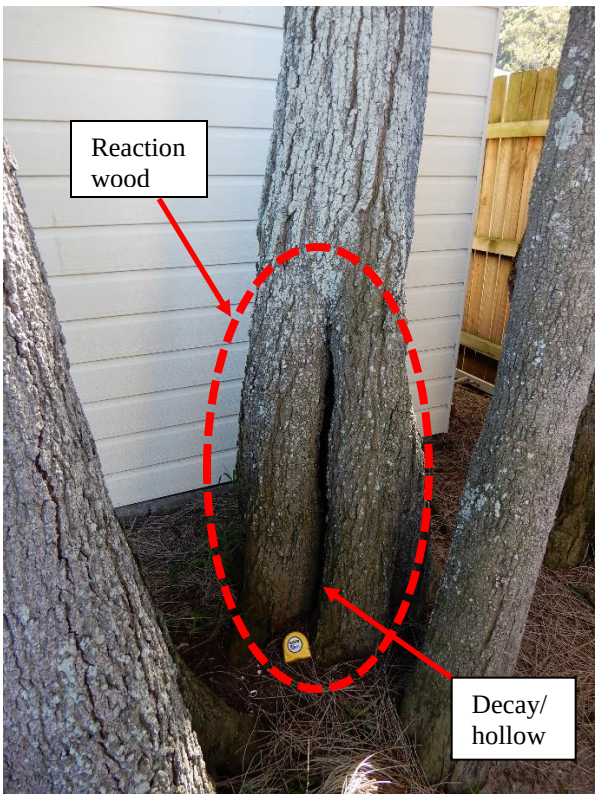
Photograph 1: Tree # 1 – Illustrating multiple leaders with some evidence of poor attachment.

Photograph 2: Tree # 5 – Illustrating multiple leaders from ground level with some evidence of poor attachment.

Photograph 3: Tree # 5 – Illustrating the reduced foliage density and dieback.



Photograph 4: : Tree # 5 – Illustrating the reduced foliage density and dieback compared with healthy Swamp Oaks 6 to 9.



Photograph 5: : Tree # 7 – Illustrating the decay in basal trunk following past branch failure.

Photograph 6: Tree # 8 - Illustrating codominant leaders from 1 metre.

Photograph 7: Tree # 9 - Illustrating multiple leaders from ground level with evidence of extensive decay at the junction.

Photograph 8: Tree # 9 – Illustrating a closer view of the decay/hollow at the junction.

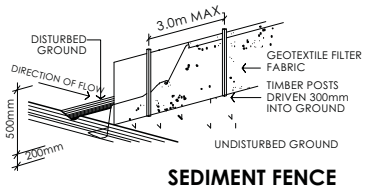
APPENDIX B - TREE DATA SUMMARY - 8 LIDO AVENUE NORTH NARRABEEN

Tree No.	*Genus, Species (Common Name)*	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
1	*Libidibia ferrea syn Caesalpinia ferrea* (Leopard Tree)	8	13	Up to 360 (520 above the root flare)	520	520	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past for OH wire clearance on south	Appears stable	Fair branch attachment	Good health	Good vigour	5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Moderate to high landscape significance	2	The tree displays fair branch attachment with codominant leaders from 1 metre and multiple leaders from 1.2 metres with some evidence of poor attachment - not considered at risk of failure in the short term. At the time of inspection the tree exhibited low levels of dieback in the lower crown branches.
2	*Jacaranda mimosifolia* (Jacaranda)	8	5 x 7	320	320	400	Good foliage condition	Mature	Single trunk	Slight trunk lean to the NE	Majority of canopy to the NE	Lower limbs pruned in past to 3 metres	Appears stable	Sound branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Moderate landscape significance	2	The tree's past canopy development has been suppressed. At the time of inspection the tree was of fair vigour and exhibited low levels of dieback in the upper crown. Exempt species.
3	*Cupressus sempevirens* (Italian Cypress, Mediterranean Cypress)	9	2	340 at 1 metre	340	290	Good foliage condition	Mature	Single trunk	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.4 metres	Appears stable	Sound branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Moderate landscape significance	2	Exempt species.
4	*Syagrus romanzoffiana* (Cocos Palm, Queen Palm)	7	6	230	N/A	N/A	Good foliage condition	Mature	Single trunk	Upright trunk	Balanced canopy area	No evidence of significant past pruning	Appears stable	N/A	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Environmental pest species	4	Environmental pest species. Exempt species.
5	*Casuarina glauca* (Swamp Oak)	12	13	480, 490, 480	840	1210	Fair foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 3 metres	Appears stable	Fair branch attachment	Moderate health	Poor vigour	10 to 15%	No visual evidence of significant pest or disease	3 Short (5 to 15 years)	Moderate to high landscape significance	3	The tree displays fair branch attachment with multiple leaders from ground level with evidence of poor attachment at the junction - the junction is a weak point in the tree's structure with increased risk of failure. There is also evidence of past branch failures. At the time of inspection the tree was of moderate health and poor vigour and exhibited significantly reduced foliage size and density and moderate levels of dieback. Short ULE.
6	*Casuarina glauca* (Swamp Oak)	12	6	350, 360	500	580	Good foliage condition	Mature	Twin trunked	Upright trunk	All canopy to the south	Lower limbs pruned in past to 3.5 metres	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	The tree's past canopy development has been significantly suppressed. Th tree displays fair branch attachment with codominant leaders from ground level with some evidence of poor attachment - not considered at risk of failure in the short term.
7	*Casuarina glauca* (Swamp Oak)	14	3 x 5	180, 400	440	580	Good foliage condition	Mature	Twin trunked	Upright trunk	Majority of canopy on an E x W axis	No evidence of significant past pruning	Appears stable	Fair to poor branch attachment	Good health	Good vigour	<5%	Decay in basal trunk of main leader following past branch failure	2 Medium (15 to 40 years)	Moderate landscape significance	2	The tree's past canopy development has been significantly suppressed. Th tree displays fair to poor branch attachment with evidence of a past failure at 1 metre to ground level on the south side with subsequent decay entry and associated reaction wood - not considered at risk of failure at the moment due to good vigour (ongoing production of reaction wood) and shelter provided by adjacent trees.
8	*Casuarina glauca* (Swamp Oak)	15	9	370, 400	540	630	Good foliage condition	Mature	Twin trunked	Upright trunk	All canopy to the north	Lower limbs pruned in past to 3 metres	Appears stable	Fair branch attachment	Good health	Good vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate to high landscape significance	2	The tree's past canopy development has been significantly suppressed. Th tree displays fair branch attachment with codominant leaders from ground level with some evidence of poor attachment (small bark inclusion) - not considered at risk of failure in the short term - monitoring of junction recommended.

Tree No.	*Genus, Species (Common Name)*	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
9	*Casuarina glauca* (Swamp Oak)	14	8 x 10	260, 290, 480	620	720	Good foliage condition	Mature	Multi trunked	Upright trunk	All canopy to the east	No evidence of significant past pruning	Appears stable	Fair to poor branch attachment	Good health	Good vigour	<5%	Decay in centre extending into root plate and decay in eastern leader following branch failure	3 Short (5 to 15 years)	Moderate to high landscape significance	3	The tree displays fair to poor branch attachment with multiple leaders from ground level with some evidence of poor attachment - this poor attachment is compounded by past wounding in the main leader with evidence of significant decay extending from 1.2 metres into the basal trunk at the junction of trunks - this is a weak point in the tree with increased risk of failure. There is also evidence of past wounding (following a branch failure) on the eastern leader at 1.6 metres with extensive decay. Risk of failure will increase if any adjacent trees are removed resulting in increased wind loading. Short ULE.
ca = approximate diameter at breast height (DBH) estimated from nearest property boundary or fence where trees were located on adjoining properties																						
* Retention Values: 1 - High (Priority for retention); 2 - Moderate (Consider for retention); 3 - Low or short ULE (Not warranting specific design consideration) and 4 - Remove (very short ULE, structurally unsound, weed species etc.)																						

SITE CALCULATIONS

SITE AREA		464.52 m²
OPEN SPACE AREA	59%	276.09 m²
FSR		**0.35: 1**
RESIDENCE		
EXISTING LIVING		109.26 m²
PROPOSED LIVING		62.48 m²
TOTAL LIVING		**171.74 m²**
EXISTING PERGOLA (TO BE DEMOLISHED)		25.75 m²
PROPOSED DECK AREAS		**61.36 m²**
EXISTING GARAGE		16.06 m²
PROPOSED CARPORT		**17.85 m²**



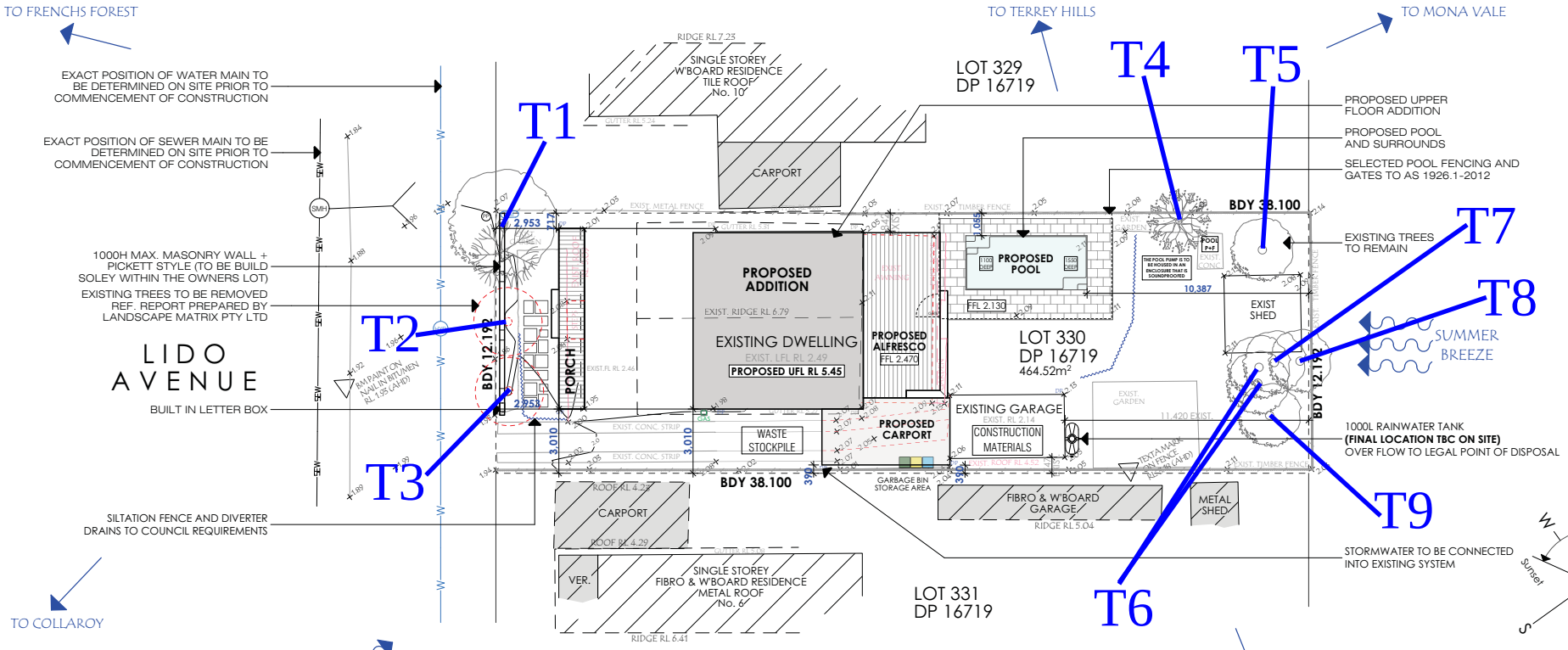
SEDIMENT FENCE
N.T.S

SEDIMENT CONTROL NOTES

1. ALL EROSION AND SEDIMENTATION CONTROL MEASURES, INCLUDING REVEGETATION AND STORAGE OF SOIL AND TOPSOIL, SHALL BE IMPLEMENTED TO COUNCIL REQUIREMENTS.
2. ALL DRAINAGE WORKS SHALL BE CONSTRUCTED AND STABILISED AS EARLY AS POSSIBLE DURING DEVELOPMENT.
3. SEDIMENT TRAPS SHALL BE CONSTRUCTED AROUND ALL INLET PITS, CONSISTING OF 300mm WIDE X 300mm DEEP TRENCH.
4. ALL SEDIMENT BASINS AND TRAPS SHALL BE CLEANED WHEN THE STRUCTURES ARE A 60% FULL OF SOIL MATERIALS, INCLUDING THE MAINTENANCE PERIOD.
5. ALL DISTURBED AREAS SHALL BE REVEGETATED AS SOON AS THE RELEVANT WORKS ARE COMPLETED.
6. SOIL AND TOPSOIL STOCKPILES SHALL BE LOCATED AWAY FROM DRAINAGE LINES AND AREA WHERE WATER MAY CONCENTRATE.
7. FILTER SHALL BE CONSTRUCTED BY STRETCHING A FILTER FABRIC (PROPEX OR APPROVED EQUIVALENT BETWEEN POST AT 3.0m CENTRES. FABRIC SHALL BE BURIED 150mm ALONG ITS LOWER EDGE.

SITE NOTES:

- REMOVE EXISTING STRUCTURES ON SITE AS NOTED
- NO KNOWN WATERCOARSES OR WATERWAYS ON SITE
- NO CUT AND FILL REQUIRED
- PROVIDE SILTATION BARRIER AS REQUIRED BY COUNCIL
- STORMWATER TO BE CONNECTED INTO EXISTING SYSTEM
- EXISTING TREES TO BE REMOVED SHOWN DASHED LINE
- THE BUILDING SITE IS TO BE SECURED BY A SAFETY FENCE TO PROHIBIT UNAUTHORISED PUBLIC ACCESS DURING THE COURSE OF CONSTRUCTION
- ALL LEVELS ARE TO AHD
- DRAINAGE/STORMWATER INDICATIVE ONLY:- SUBJECT TO SITE CONDITIONS
- **ALL BUILDING MATERIALS USED OR LOCATED BELOW RL 3.53m AHD MUST BE FLOOD COMPATABLE REFER TO FLOOD RISK MANAGEMENT REPORT PREPARED BY PITTWATER DATA SERVICES PTY LTD**



SITE PLAN
Scale 1:200

Tuesday, 9 July 2019

UKALOVIC DESIGN
ARCHITECTURAL DRAFTING SERVICES
M 0418 225 440
P 02 4380 0541
E jay.ukalovic@aapt.net.au

ISSUE	DATE	AMENDMENT
a	09.07.2019	DA SUBMISSION

PROJECT: **ALTERATIONS AND ADDITIONS INCLUDING ATTACHED CARPORT + SWIMMING POOL**
SHEET TITLE: **SITE PLAN + SITE ANALYSIS PLAN**
REVISION: a
CLIENT: **SHARPLES**
ADDRESS: **LOT 330 DP 16719 No. 8 LIDO AVENUE, NORTH NARRABEEN**
SCALE: **1:200**
PROJECT No: **1840**
2/13

T1, T2 etc = tree numbers as per report by Landscape Matrix Pty Ltd