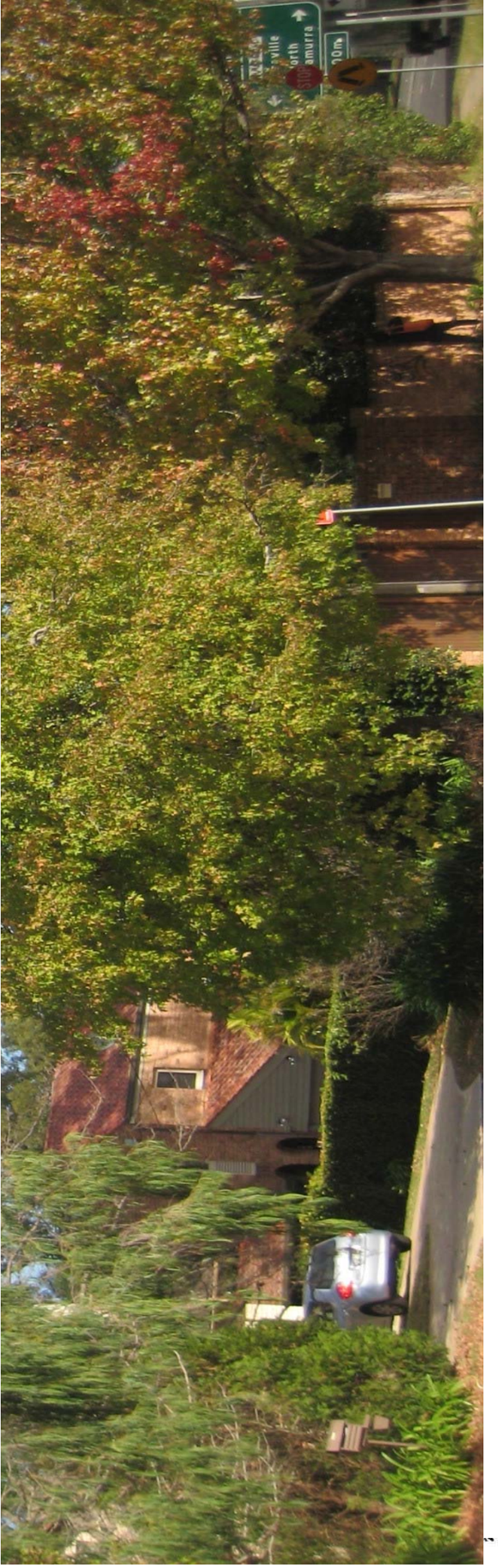

arboricultural impact assessment, proposed development 124 – 128 killeaton street, st ives

13th October 2014

prepared by Melanie Howden - Ass. Dip. Hort. (Haw. Ag. C.), SoA. Arb. MAIH, MIACA

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Executive Summary

This report has been prepared to assess the condition and significance of a number of trees on and adjacent the properties known as 142, 146 & 148 Killeaton Street St Ives and assess the potential impact of the proposed development on the identified trees.

The assessments carried out in this report are based upon the Australian Standard 4970 - 2009, Protection of Trees on Development Sites. The terminology used in this report is also consistent with that used in the AS 4970-2009.

The definition of a Tree used in this report is consistent with that used in the Local Centres Development Control Plan, 2013, Volume A, Part 13 being:
"a perennial plant with at least one self-supporting woody, fibrous stem, whether native or exotic, which is 5 metres or more in height; or a plant that has a trunk diameter of 150mm or more measured at ground level."

The report has been commissioned by Ausprospect Pty Ltd and site instructions have been provided by Marchese & Partners Pty Ltd. Site inspections and field work were initially undertaken on the 4th June 2014 with a subsequent inspection carried out on the 7th October 2014.

The subject site has an area of approximately 4,500 m2 and is currently developed containing 3 dwellings, 3 swimming pools, 1 detached garage and formal landscaped areas of private open space. The proposed development involves demolition of the existing built structures, the removal of trees and construction of new residential apartments with basement level car parking (Marchese, 2014).

There are 60 trees that have been considered in this report of which 35 are located on the site, 15 trees are on adjacent allotments and 10 trees are located within the road reserve. Of the **60** tree considered in this report based upon the proposed plans:

- **32** trees to be retained (10 on site, 15 on adjacent allotments, 7 within the road reserve), and
- **28** trees are to be removed (25 on site, 3 within the road reserve).).

Contents

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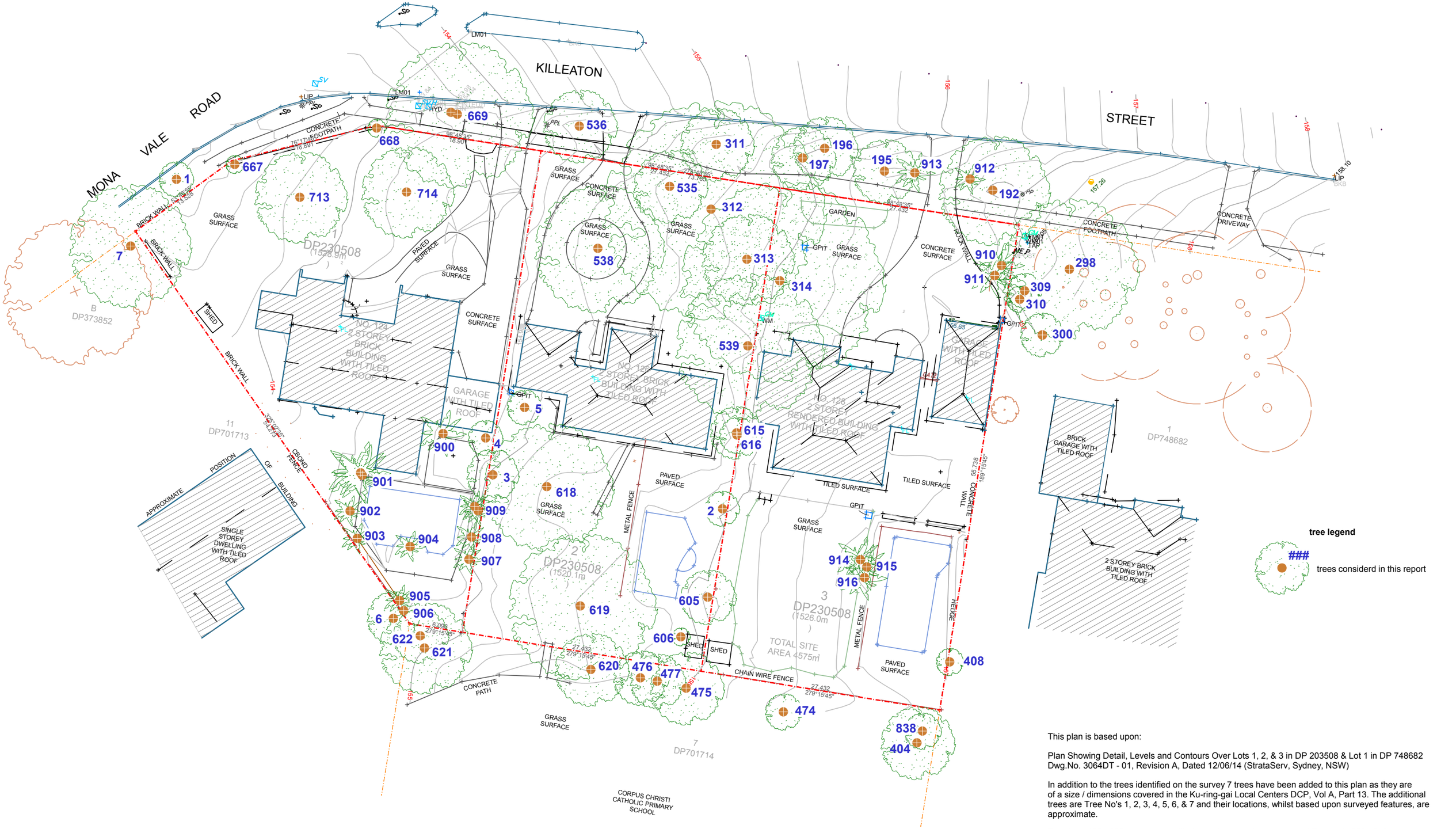

tree legend

trees considerd in this report

This plan is based upon:

Plan Showing Detail, Levels and Contours Over Lots 1, 2, & 3 in DP 203508 & Lot 1 in DP 748682 Dwg.No. 3064DT - 01, Revision A, Dated 12/06/14 (StrataServ, Sydney, NSW)

In addition to the trees identified on the survey 7 trees have been added to this plan as they are of a size / dimensions covered in the Ku-ring-gai Local Centers DCP, Vol A, Part 13. The additional trees are Tree No's 1, 2, 3, 4, 5, 6, & 7 and their locations, whilst based upon surveyed features, are approximate.

Tree No's 192 - 838 correspond with those shown on the survey and Tree No's 900 - 916 have been allocated to the palms that were plotted on the original survey without reference numbers.

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project
arboricultural impact assessment - 124-128 killeaton street, st ives

drawing title
existing site - tree locations & reference numbers

tree significance

significance in the environment

Trees need to be considered in the overall environment and are subject to specific legislation such as:

- Threatened Species Conservation Act (NSW) 1995, and
- Noxious Weeds Act (NSW) 1993.

Threatened Species Conservation Act (NSW) 1995
The Threatened Species Conservation Act lists in its schedules a number of species, populations or ecological communities that are either endangered or vulnerable. The Act requires the preparation of a species impact statement if an activity or development is going to have a significant effect on species, populations or endangered ecological communities listed in the schedules of the Act. Where identified on or adjacent the site, threatened tree species are considered in this report, however no attempt is made to identify threatened ecological communities or populations.

Noxious Weeds Act (NSW) 1993
The Noxious Weeds Act provides the Minister with the powers to issue an Order declaring a plant noxious and these plants can be either agricultural or significant environmental pest species. The Minister's declaration may specify a plant to be noxious in part or all of the State and the Minister also may specify the level of noxious weed control required for that species.

Environmental Pest Species
There are a number of environmental pest species that commonly cause problems in developed urban areas or readily spread into natural bushland areas. In urban areas these species can have aggressive root systems and cause damage to built structures or services. Alternatively some species can be problematic in natural bushland areas degrading habitats and reducing natural biodiversity.
Many of these are not considered noxious but are recognised by Councils as pest species and are exempt from protection under Council's Tree Preservation Order.

significance in the landscape

Assessment of a tree's significance in the landscape is generally categorised as either:

- Very High Landscape Significance- prominent from a broad landscape perspective;
- High Landscape Significance - prominent from a neighbourhood perspective;
- Moderate Landscape Significance - prominent from adjacent areas surrounding the site, and
- Low Landscape Significance - prominent from a site perspective only.

tree condition & life expectancy

condition

The assessment of the trees condition is undertaken by visual inspection of the trees themselves, surrounding vegetation and the site conditions.

An assessment of each tree is undertaken taking into account the condition of the tree's roots, trunk, branches, foliage, previous pruning works, pests and disease, nesting hollows, fauna scratchings and the surrounding environment that may influence the condition of the tree.

Safe Useful Life Expectancy (SULE)

The condition information is used to determine the Safe Useful Life Expectancy (SULE) of each tree and takes into account the age of the tree, the life span of the species, local environment conditions, estimated life expectancy, the location of the tree and safety aspects.

The SULE method takes into account whether a tree can be retained with an acceptable level of risk based on the information available at the time of inspection. A SULE assessment is not static as it relates to the tree's health and the surrounding conditions. Whilst it is recognised that changes to the tree's condition will effect the assessment, changes to the surrounding environment may result in changes to the SULE assessment.

Table 1 Safe Useful Life Expectancy (SULE), (Barrell, 2001)

Category	Description
1	Long -Life span greater than 40 years
2	Medium - Life span from 15 to 40 years
3	Short - Life span from 5 to 15 years
4	Should be removed within 5 years
5	Small, Young or Regularly Pruned, Trees that can readily be moved or replaced.

In addition to the categories listed above, trees that show signs of imminent structural failure are listed as 'Unstable'.

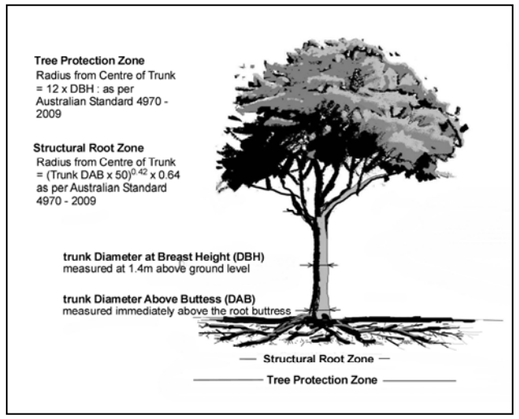
Unstable	Unstable in the ground or have significant trunk damage rendering them structurally hazardous.

development planning & general impacts on trees

tree protection zones

Where trees are intended to be retained, development footprints should be located away from trees so as to provide adequate clearances for a tree protection zone.
Disturbance within Tree Protection Zones can be detrimental to the tree's root system and in turn affect the stability, health and condition of the tree. In many cases damage to the root systems is the major cause of tree decline in urban areas.

Figure 3.1 Typical diagram of a Tree Protection Zone & Structural Root Zone of a tree based upon AS 4970 – 2009.



Where trees are multi-trunk specimens assessment needs to be made based upon the number of trunks and the diameter of each trunk. Based upon the Australian Standard for Protection of Trees on Development Sites, AS 4970 – 2009, the DBH of multi-trunk trees is calculated by:

$$DBH = \sqrt{(DBH_1)^2 + (DBH_2)^2 + (DBH_3)^2}$$

development design & Tree Protection Zones

Where trees are intended to be retained, proposed developments must provide an adequate Tree Protection Zone around trees. This Tree Protection Zone is set aside for the tree's root zone and it is essential for the stability and longevity of the tree. Existing soil levels should be retained within the Tree Protection Zone.

Based upon the Australian Standard for Protection of Trees on Development Sites, AS 4970 – 2009, the radius of the Tree Protection Zone (TPZ) is calculated as: TPZ = 12 x DBH with a minimum 2.0m radius and a maximum 15m radius.

developments within the Tree Protection Zone

Minor encroachments into Tree Protection Zones
Based upon AS 4970 – 2009 some development activity can occur within the vicinity of trees and minor encroachments can occur within the calculated Tree Protection Zone provided that:

- no more that 10% of the area (m2) of the Tree Protection Zone is removed (0.7 x TPZ radius on 1 side only);
- the encroachment does not extend into the Structural Root Zone, and
- the area (m2) to be removed is compensated for by increasing the distance of the Tree Protection Zone in other directions so that there is no net loss in area (m2) of the Tree Protection Zone

Major encroachments into Tree Protection Zones
Where the proposed development activity is greater than that described as a minor encroachment (refer above); the activity is considered to be a major encroachment into the Tree Protection Zone.

Where major encroachments are to occur within the Tree Protection Zone of trees intended to be retained, it must be demonstrated that the works or activities will not have a significant impact on the health and condition of the tree. To demonstrate this detailed root mapping investigation by non invasive methods may be necessary; and other factors such as the age class, health & vigour, trunk lean, disturbance tolerance of the species, and building design may need to be taken into account in the arboricultural assessment.

Where major encroachments are proposed to occur into the Tree Protection Zone the tree's Structural Root Zone should also be taken into account.

developments within the tree's Structural Root Zone

The Structural Root Zone is the area surrounding the tree where the severance of roots and excavation is likely to affect the structural stability of the tree and is likely to have a significant detrimental impact on the health & condition of the tree.
Based upon AS 4970 – 2009 the radius of a tree's Structural Root Zone (SRZ) is determined by measuring the diameter of the trunk immediately above the root buttress (DAB) and calculated by: SRZ = (DAB x 50) 0.42 x 0.64.

Developments should not encroach into the tree's Structural Root Zone and existing soil levels must remain unchanged. Excavation should not occur within this area unless a detailed arboricultural assessment is undertaken and Specific Tree Protection measures will be required.

Tree No	Genus Species	Common Name	Height (m)	Canopy Spread (m)	DBH (mm)	DAB (mm)	Description	Environmental / Landscape Significance	Condition	Foliage Condition	% Canopy Dead Wood	Evidence of Pests, Disease, Cavity, Bracket Fungi	SULE	On / off site	TPZ Radius (m)	Area of TPZ (m2)
1	*Alectryon tomentosus*	Rambutan	5	4	200	300	Mature single trunk tree with an upright rounded form; a slight trunk lean to the north and majority of canopy and branch development is towards the north east. Upper branches have been pruned to accommodate overhead wires.	Low L/scape Sig.	The tree appears stable and its branch attachment appears fair. The tree is considered to be in good health and displays good vigour.	Good	5%	The tree has suckering regrowth in response to pruning.	2	Within road reserve	2.4	18.1
2	*Melaleuca bracteata*	Revolution Gold	8	4	220	300	Mature single trunk tree with a broad spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Low L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	Some twiggy dead wood in the canopy.	2	On site	2.6	21.9
3	*Magnolia grandiflora*	Bull Bay Magnolia	5	6	1*180, 1*140, 1*100	300	Semi-mature multi trunk tree with a broad spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Low L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	None evident	1	On site	3	28.1
4	*Ficus benjamina*	Weeping Fig	6	4	260	400	Semi-mature multi trunk tree with an upright spreading form; an upright trunk/s and balanced canopy and branch development. Lower limbs of the tree have been pruned to 2m.	Low L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Excellent	5%	None evident	1	On site	2.4	18.1
5	*Camellia japonica*	Camellia	5	4	200	250	Mature single trunk tree with an upright spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Low L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Very Good	<5%	None evident	2	On site	2.4	18.1
6	*Acer palmatum*	Japanese Maple	6	6	6*200	500	Mature multi trunk tree with a broad spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Low L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in moderate health and displays good vigour.	Fair	10%	Ivy is growing on the tree to 6m.	2	On adjacent allotment	5.9	110.9
7	*Syncarpia glomulifera*	Turpentine	17	14	1*400, 1*500, 1*600, 1*550	1400	Mature multi trunk tree with a broad spreading form; an upright trunk/s and majority of canopy and branch development is towards the north east. Branches have been pruned to accommodate overhead wires on the western side.	High L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Very Good	5%	None evident	1	On adjacent allotment	12.4	485.4

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project
arboricultural impact assessment - 124-128 killeaton street, st ives

drawing title
arboricultural assessment – tree data sheet

Tree No	Genus Species	Common Name	Height (m)	Canopy Spread (m)	DBH (mm)	DAB (mm)	Description	Environmental / Landscape Significance	Condition	Foliage Condition	% Canopy Dead Wood	Evidence of Pests, Disease, Cavity, Bracket Fungi	SULE	On / off site	TPZ Radius (m)	Area of TPZ (m2)
192	*Liquidambar formosana*	-	11	9	500	700	Mature single trunk tree with an upright spreading form; an upright trunk/s and majority of canopy and branch development is towards the north. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	10%	None evident	1	Within road reserve	6	113.1
195	*Liquidambar formosana*	-	11	7	400	500	Mature single trunk tree with an upright elliptical form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	None evident	1	Within road reserve	4.8	72.4
196	*Hakea sp.*		5	4	1*180, 3*120	550	Dead multi trunk tree with an upright form; an upright trunk/s and majority of branch development is towards the north. No evidence of significant branch pruning.	Low L/scape Sig.	The tree stability is suspect and its branch attachment appears poor. The tree is considered to be dead and displays no signs of any vigour.	None	100%	The tree is dead	Unstable	Within road reserve	3.3	34.2
197	*Liquidambar formosana*	-	12	8	480	650	Mature single trunk tree with an upright spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	<5%	None evident	1	Within road reserve	5.8	104.3
298	*Eucalyptus saligna*	Sydney Blue Gum	25	16	800	1060	Mature single trunk tree with a tall forest form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	High L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	None evident	1	On adjacent allotment	9.6	289.6
300	*Melaleuca styphelioides*	Prickly-Leaved Tea Tree	11	5	320	400	Mature single trunk tree with an upright spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	None evident	2	On adjacent allotment	3.8	46.3
309	*Ligustrum lucidum*	Large Leaf Privet	5	4	3*100, 3*60	400	Mature multi trunk tree with a broad spreading form; an upright trunk/s and majority of canopy and branch development is towards the north. No evidence of significant branch pruning.	Noxious Weed	The tree appears stable and its branch attachment appears sound. The tree is considered to be in moderate health and displays good vigour.	Good	10%	None evident	1	On adjacent allotment	2.2	15.2
310	*Ligustrum lucidum*	Large Leaf Privet	5	3	5*50, 2*30	340	Mature multi trunk tree with a broad spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Noxious Weed	The tree appears stable and its branch attachment appears sound. The tree is considered to be in moderate health and displays good vigour.	Good	5%	None evident	1	On adjacent allotment	2	12.6
311	*Liquidambar formosana*	-	13	9	550	700	Mature single trunk tree with an upright spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	None evident	1	Within road reserve	6.6	136.9
312	*Eucalyptus elata*	River Peppermint	14	18	1*100, 1*800	1400	Mature twin trunk tree with an upright spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	High L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in moderate health and displays fair vigour.	Good	10%	The tree has a sparse canopy with reduced leaf size and the central leader has a hollow at 9m. The tree has Kino exuding and decayed sections with burls on numerous branch junctions. Termite activity is also evident.	3	On site	9.7	294.2
313	*Fraxinus oxycarpa cv. 'Raywood'*	Claret Ash	9	9	3*200	500	Mature multi trunk tree with a broad spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears fair. The tree is considered to be in good health and displays good vigour.	Deciduous None	5%	The tree has a moderate bark inclusion at 1m.	2	On site	4.2	54.3
314	*Eucalyptus globulus*	Tasmanian Blue Gum	23	17	900	1300	Mature single trunk tree with a tall forest form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	High L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in moderate health and displays fair vigour.	Fair	15%	The tree has a sparse canopy with some epicormic growth, There is twiggy dead wood in the canopy and evidence of minor limb failures. There is Longicorn Beetle damage to the lower trunk and bark cracking on the southern side.	3	On site	10.8	366.6
408	*Callistemon viminalis*	Weeping Bottlebrush	6	3	1*60, 1*80, 1*120	260	Mature multi trunk tree with an upright spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Low L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	None evident	2	On adjacent allotment	2	12.6
474	*Banksia integrifolia*	Coastal Banksia	10	6	400	520	Mature single trunk tree with a broad spreading form; an upright trunk/s and balanced canopy and branch development. Lower limbs of the tree have been pruned.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	None evident	2	On adjacent allotment	4.8	72.4
475	*Brachychiton acerifolius*	Illawarra Flame Tree	9	6	420	560	Mature single trunk tree with an upright spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	The tree appears to be suppressed by the adjacent vegetation	2	On adjacent allotment	5	79.8
476	*Cupressus sp.*	Cypress	15	5	580	670	Mature single trunk tree with an upright elliptical form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	10%	None evident	2	On adjacent allotment	7	152.2
477	*Cupressus sp.*	Cypress	15	5	550	650	Mature single trunk tree with an upright elliptical form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	None evident	2	On adjacent allotment	6.6	136.9
535	*Liquidambar styraciflua*	Sweet Gum	14	9	450	650	Mature single trunk tree with an upright pyramidal form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Deciduous None	5%	None evident	1	On site	5.4	91.6
536	*Liquidambar formosana*	-	12	7	500	750	Mature single trunk tree with an upright spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	None evident	1	Within road reserve	6	113.1
538	*Nyssa sylvatica*	Tupelo	13	11	400	550	Mature single trunk tree with an upright pyramidal form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Deciduous None	5%	None evident	1	On site	4.8	72.4
539	*Ulmus procera "vanhouttie"*	Golden Elm	11	12	500	800	Mature twin trunk tree with a broad spreading form; an upright trunk/s and balanced canopy and branch development. Lower limbs of the tree have been pruned to 5m.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	15%	The tree has moderate bark inclusions at several points and twiggy dead wood in the canopy. Monsteria is growing on the tree to 3m.	2	On site	6	113.1
605	*Syagrus romanzoffianum*	Cocos Palm	12	5	240	400	Mature single trunk tree with an elevated spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Species is Exempt from Council's DCP	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	None evident	2	On site	2	12.6
606	*Cupressus sempervirens 'Swane's Golden'*	Swane's Golden Pencil Pine	21	1	200	230	Mature single trunk tree with an upright clumping form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Low L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	The tree appears to be suppressed by the adjacent vegetation on the southern side.	2	On site	2.4	18.1

Tree No	Genus Species	Common Name	Height (m)	Canopy Spread (m)	DBH (mm)	DAB (mm)	Description	Environmental / Landscape Significance	Condition	Foliage Condition	% Canopy Dead Wood	Evidence of Pests, Disease, Cavity, Bracket Fungi	SULE	On / off site	TPZ Radius (m)	Area of TPZ (m2)
615	*Archontophoenix cunninghamii*	Bangalow Palm	13	5	220	340	Mature single trunk tree with an elevated rounded form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	<5%	None evident	2	On site	1.9	11.3
616	*Pittosporum eugenoides 'Variegated'*	Variegated Pittosporum	6	4	280	360	Mature single trunk tree with an upright elliptical form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Low L/scape Sig.	The tree displays some signs of instability and its branch attachment appears fair. The tree is considered to be in poor health and displays fair vigour.	Fair		There is evidence of decay and bark cracking in the main trunk. Jasmine is growing in the canopy and dead wood is evident in the lower canopy.	4	On site	3.4	35.5
618	*Nyssa sylvatica*	Tupelo	18	14	1*400, 1*380	860	Mature twin trunk tree with an upright spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	High L/scape Sig.	The tree appears stable and its branch attachment appears fair. The tree is considered to be in good health and displays good vigour.	Deciduous None	<5%	The tree has codominant trunks with a bark inclusion at the main junction. Vertical cracking has developed on the southern side of the main trunk at 5m.	1	On site	6.6	137.8
619	*Ulmus parvifolia*	Chinese Weeping Elm	14	16	1*260, 1*500, 1*180, 1*400	900	Mature multi trunk tree with a broad spreading form; an upright trunk/s and balanced canopy and branch development. Lower limbs of the tree have been pruned to 2m.	High L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Deciduous None	10%	Areas of decay have developed in some branch pruning stubs and there appears to be dieback in the southern and western leaders.	2	On site	8.6	230.8
620	*Pittosporum undulatum*	Sweet Pittosporum	12	9	2*320, 1*280	550	Mature multi trunk tree with a broad spreading form; an upright trunk/s and majority of canopy and branch development is towards the south. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	10%	Ivy is growing on the tree to 1.5m.	2	On adjacent allotment	6.4	128.2
621	*Prunus sp.*	-	8	58	1*120, 1*130, 2*140, 1*60	500	Mature multi trunk tree with a broad spreading form; an upright trunk/s and majority of canopy and branch development is towards the south. Lower limbs of the tree have been pruned to 2m.	Low L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Deciduous None	5%	The tree appears to be suppressed by the adjacent vegetation	2	On adjacent allotment	3.3	33.5
622	*Ligustrum lucidum*	Large Leaf Privet	8	5	2*160, 1*100	380	Mature multi trunk tree with an upright elliptical form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Noxious Weed	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Very Good	5%	None evident	1	On adjacent allotment	3	27.7
667	*Melaleuca quinquenervia*	Paperbark	13	6	1*400, 1*280, 1*180	680	Mature multi trunk tree with an upright elliptical form; an upright trunk/s and majority of canopy and branch development is towards the east. Upper branches have been pruned to accommodate overhead wires on the western side and adjacent the roadway.	Moderate L/scape Sig.	The tree stability is suspect and its branch attachment appears sound. The tree is considered to be in moderate health and displays fair vigour.	Good	10%	The tree has been poorly pruned and is predominately epicormic growth and there is sooty mould on the foliage.	2	On site	6.2	122.6
668	*Melaleuca quinquenervia*	Paperbark	13	5	1*340, 1*400	600	Mature twin trunk tree with an upright forest form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	High L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	10%	The tree has twiggy dead wood through out the canopy.	1	On site	6.3	124.7
669	*Liquidambar styraciflua*	Sweet Gum	12	8	650	750	Mature multi trunk (at 2m) tree with an upright elliptical form; an upright trunk/s and balanced canopy and branch development. Appears that the central leader has been pruned/removed at 2m.	Moderate L/scape Sig.	The tree displays some signs of instability and its branch attachment appears fair. The tree is considered to be in moderate health and displays fair vigour.	Fair	15%	There is an elongated trunk wound on the north western side and the tree has dead wood and a fungal fruiting body in the central section. Small hollows are evident in the lower parts of the eastern leader.	3	Within road reserve	7.8	191.2
713	*Eucalyptus racemosa*	Narrow-Leaved Scribbly Gum	13	14	1*600, 1*350	750	Mature twin trunk tree with an upright forest form; an upright trunk/s and balanced canopy and branch development. Lower limbs of the tree have been pruned to 8m on the southern side.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Very Good	5%	The tree is carrying some smaller dead wood.	1	On site	8.3	218.4
714	*Eucalyptus grandis*	Flooded Gum	25	17	1000	1400	Mature twin trunk tree with an upright forest form; an upright trunk/s and balanced canopy and branch development. Some pruning has occurred in the upper canopy on the southern side.	Very High L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Very Good	10%	The tree has cracking of the bark in the lower trunk to 2m on the southern side along with some Longicorn Beetle damage. The tree appears to have lost numerous lower limbs to a height of 12m ranging in dia. from 0.2m - 0.4m.	1	On site	12	452.6
838.404	*Syncarpia glomulifera*	Turpentine	15	13	1*200, 1*250	750	Mature multi trunk tree with an upright forest form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	High L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Very Good	5%	Some decay is present in the junction at 2m on the smaller northern trunk.	1	On adjacent allotment	3.8	46.4
900	*Archontophoenix cunninghamii*	Bangalow Palm	11	5	1*230, 1*220	750	Mature twin trunk tree with an elevated spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree displays some signs of instability and its branch attachment appears fair. The tree is considered to be in good health and displays good vigour.	Good	<5%	The tree has an inclusion at the junction of the main stems.	2	On site	2.3	16.6
901	*Archontophoenix cunninghamii*	Bangalow Palm	12	5	1*180, 1*200	600	Mature twin trunk tree with an elevated spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears fair. The tree is considered to be in good health and displays good vigour.	Very Good	5%	None evident	2	On site	2.3	16.6
902	*Archontophoenix cunninghamii*	Bangalow Palm	13	4	180	400	Mature single trunk tree with an elevated spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Low L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	None evident	2	On site	2.1	13.9
903	*Archontophoenix cunninghamii*	Bangalow Palm	5	4	220	300	Semi-mature single trunk tree with an elevated spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Low L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Excellent	5%	None evident	2	On site	1.2	4.5
904	*Howea forsteriana*	Kentia Palm	6	4	150	200	Semi-mature single trunk tree with an elevated rounded form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Low L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Excellent	<5%	None evident	1	On site	1	3.1
905	*Archontophoenix cunninghamii*	Bangalow Palm	6	3	3*140	400	Semi-mature multi trunk tree with an elevated spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Low L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Very Good	5%	None evident	2	On site	1.3	5.3
906	*Archontophoenix cunninghamii*	Bangalow Palm	5	2	1*40, 1*60, 1*100	220	Semi-mature multi trunk tree with an elevated spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Low L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	The tree appears to be suppressed by the adjacent vegetation	2	On site	1	3.1
907	*Archontophoenix cunninghamii*	Bangalow Palm	7	36	1*220, 1*120, 1*100	500	Semi-mature multi trunk tree with an elevated spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Low L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	Ivy is growing on the palm.	2	On site	1.5	7.1
908	*Archontophoenix cunninghamii*	Bangalow Palm	7	3	220	350	Semi-mature single trunk tree with an elevated spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Low L/scape Sig.	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	Ivy is growing on the palm to 2m and cracking is evident on the main stem on the western side.	2	On site	1.3	5.3

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project: **arboricultural impact assessment - 124-128 killeaton street, st ives**

drawing title: **arboricultural assessment – tree data sheet**

Tree No	Genus Species	Common Name	Height (m)	Canopy Spread (m)	DBH (mm)	DAB (mm)	Description	Environmental / Landscape Significance	Condition	Foliage Condition	% Canopy Dead Wood	Evidence of Pests, Disease, Cavity, Bracket Fungi	SULE	On / off site	TPZ Radius (m)	Area of TPZ (m2)
909	*Archontophoenix cunninghamii*	Bangalow Palm	12	5	1*280, 1*300	700	Mature twin trunk tree with an elevated spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Moderate L/scape Sig.	The tree appears stable and its branch attachment appears fair. The tree is considered to be in good health and displays good vigour.	Very Good	5%	Ivy is growing on the palm to 5m.	2	On site	2.3	16.6
910	*Syagrus romanzoffianum*	Cocos Palm	11	5	300	400	Mature single trunk tree with an elevated elliptical form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Species is Exempt from Council's DCP	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Very Good	5%	None evident	2	On site	1.8	10.2
911	*Syagrus romanzoffianum*	Cocos Palm	8	4	260	300	Mature single trunk tree with an elevated spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Species is Exempt from Council's DCP	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	None evident	2	On site	1.4	6.2
912	*Syagrus romanzoffianum*	Cocos Palm	10	3	300	500	Mature single trunk tree with an elevated spreading form; an upright trunk/s and majority of canopy and branch development is towards the No evidence of significant branch pruning.	Species is Exempt from Council's DCP	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	The tree appears to be suppressed by the adjacent vegetation	2	Within road reserve	1.9	11.3
913	*Syagrus romanzoffianum*	Cocos Palm	11	5	300	600	Mature single trunk tree with an elevated rounded form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Species is Exempt from Council's DCP	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Very Good	5%	None evident	2	Within road reserve	2.1	13.9
914	*Syagrus romanzoffianum*	Cocos Palm	14	6	400	520	Mature single trunk tree with an elevated spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Species is Exempt from Council's DCP	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	None evident	2	On site	2.5	19.6
915	*Syagrus romanzoffianum*	Cocos Palm	7	4	250	350	Mature single trunk tree with an elevated spreading form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Species is Exempt from Council's DCP	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Good	5%	None evident	2	On site	1.3	5.3
916	*Syagrus romanzoffianum*	Cocos Palm	13	8	400	600	Mature single trunk tree with an elevated rounded form; an upright trunk/s and balanced canopy and branch development. No evidence of significant branch pruning.	Species is Exempt from Council's DCP	The tree appears stable and its branch attachment appears sound. The tree is considered to be in good health and displays good vigour.	Very Good	<5%	None evident	2	On site	2.3	16.6

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project
arboricultural impact assessment
- 124-128 killeaton street, st ives

drawing title
arboricultural assessment
– tree data sheet

tree legend

trees to be retained

trees to be removed

This plan is based upon:

Plan Showing Detail, Levels and Contours Over Lots 1, 2, & 3 in DP 203508 & Lot 1 in DP 748682 Dwg.No. 3064DT - 01, Revision A, Dated 12/06/14 (StrataServ, Sydney, NSW)

Ground Level Plan, Dwg No. DA-1.03, Dated June 2014, (Marchese & Partners International, Nth Sydney, NSW)

Landscape Plan, Dwg No. L01, Dated September 2014, (Jane Britt Design, Annandale, NSW)

In addition to the trees identified on the survey 7 trees have been added to this plan as they are of a size / dimensions covered in the Ku-ring-gai Local Centers DCP, Vol A, Part 13. The additional trees are Tree No's 1, 2, 3, 4, 5, 6, & 7 and their locations, whilst based upon surveyed features, are approximate.

Tree No's 192 - 838 correspond with those shown on the survey and Tree No's 900 - 916 have been allocated to the palms that were plotted on the original survey without reference numbers.

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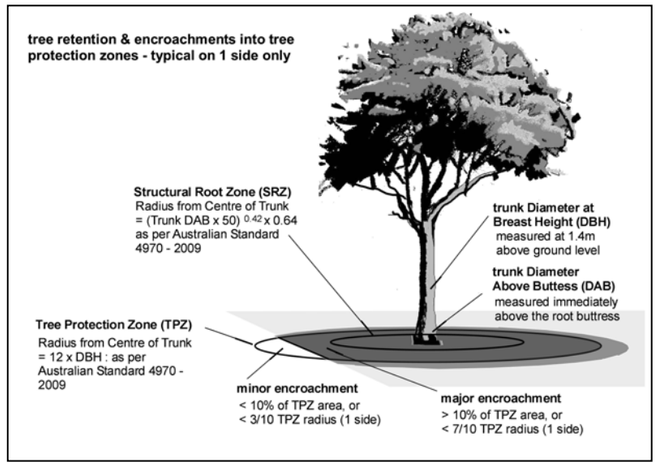
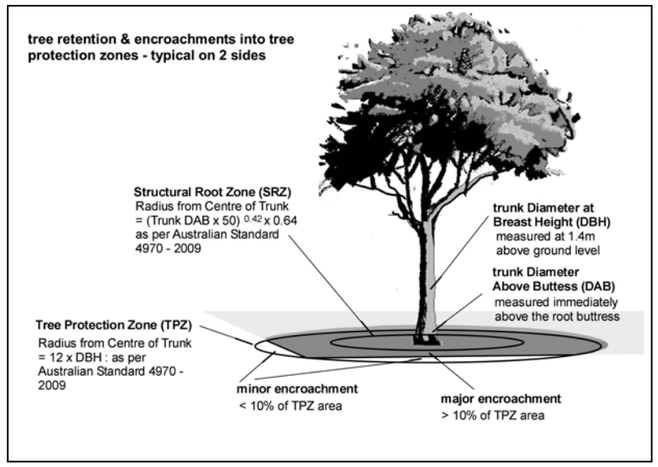
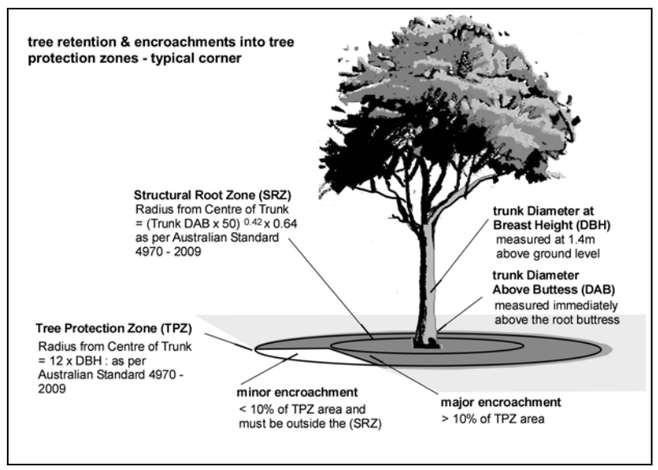
project
arboricultural impact assessment - 124-128 killeaton street, st ives

drawing title
proposed development - tree retention & removal

typical application of Australian Standard 4970-2009 - Protection of Trees on Development Sites







Tree No	Genus Species	DBH (mm)	DAB (mm)	SULE	Env./ L/scape Sig.	TPZ Radius (m)	Area of TPZ (m2)	Radius of 90% of TPZ area (7/10)	SRZ Radius (m)	Adjacent Works	Influence on Tree	Plan Status	On / off site
1	*Alectryon tomentosus*	200	300	2	Low L/scape Sig.	2.40	18.10	1.70	2.00	The front boundary fence is within 2.0m (south east) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	Within road reserve
2	*Melaleuca bracteata*	220	300	2	Low L/scape Sig.	2.60	21.90	1.80	2.00	The proposed building footprint spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
3	*Magnolia grandiflora*	1*180, 1*140, 1*100	300	1	Low L/scape Sig.	3.00	28.10	2.10	2.00	The proposed building footprint spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
4	*Ficus benjamina*	260	400	1	Low L/scape Sig.	2.40	18.10	1.70	2.30	The proposed building footprint spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
5	*Camellia japonica*	200	250	2	Low L/scape Sig.	2.40	18.10	1.70	1.80	The proposed building footprint spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
6	*Acer palmatum*	6*200	500	2	Low L/scape Sig.	5.90	110.90	4.20	2.50	The proposed external path is within 3.4m (north east) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On adjacent allotment
7	*Syncarpia glomulifera*	1*400, 1*500, 1*600, 1*550	1400	1	High L/scape Sig.	12.40	485.40	8.70	3.80	The proposed new fence is within 1.7m (north east) of the tree. The proposed external path is within 3.2m (north east) of the tree and the proposed courtyard fence is within 9.5m (south east) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with Designed Tree Protection Measures	On adjacent allotment
192	*Liquidambar formosana*	500	700	1	Moderate L/scape Sig.	6.00	113.10	4.20	2.80	The proposed driveway crossing is within 2.8m (west) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with Designed Tree Protection Measures	Within road reserve
195	*Liquidambar formosana*	400	500	1	Moderate L/scape Sig.	4.80	72.40	3.40	2.50	The proposed driveway crossing is within 3.4m (east) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with Designed Tree Protection Measures	Within road reserve
196	*Hakea sp.*	1*180, 3*120	550	Unstable	Low L/scape Sig.	3.30	34.20	2.30	2.60	No proposed works within the tree's Tree Protection Zone.	No significant impact however, the tree is dead.	To be Removed	Within road reserve
197	*Liquidambar formosana*	480	650	1	Moderate L/scape Sig.	5.80	104.30	4.00	2.80	The front boundary palisade fence is within 3.8m (south) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	Within road reserve
298	*Eucalyptus saligna*	800	1060	1	High L/scape Sig.	9.60	289.60	6.70	3.40	No proposed works apart from soft landscaping within the tree's Tree Protection Zone.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On adjacent allotment
300	*Melaleuca styphelioides*	320	400	2	Moderate L/scape Sig.	3.80	46.30	2.70	2.30	No proposed works apart from soft landscaping within the tree's Tree Protection Zone.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On adjacent allotment
309	*Ligustrum lucidum*	3*100, 3*60	400	1	Noxious Weed	2.20	15.21	1.54	2.25	No proposed works apart from soft landscaping within the tree's Tree Protection Zone.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On adjacent allotment

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project: **arboricultural impact assessment - 124-128 killeaton street, st ives**

drawing title: **impact of proposed development on individual trees**

Tree No	Genus Species	DBH (mm)	DAB (mm)	SULE	Env./ L/scape Sig.	TPZ Radius (m)	Area of TPZ (m2)	Radius of 90% of TPZ area (7/10)	SRZ Radius (m)	Adjacent Works	Influence on Tree	Plan Status	On / off site
310	*Ligustrum lucidum*	5*50, 2*30	340	1	Noxious Weed	2.00	12.60	1.40	2.10	No proposed works apart from soft landscaping within the tree's Tree Protection Zone.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On adjacent allotment
311	*Liquidambar formosana*	550	700	1	Moderate L/scape Sig.	6.60	136.90	4.60	2.80	The proposed front boundary fence is within 3.7m (south) of the tree and the proposed entrance structure is within 4.2m (south west) from the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with Designed Tree Protection Measures	Within road reserve
312	*Eucalyptus elata*	1*100, 1*800	1400	3	High L/scape Sig.	9.70	294.20	6.80	3.80	The proposed entrance structure is within 4.3m (west) of the tree. A corner of the proposed basement car park is within 5.5m (south east) of the tree. The court yard fence is within 2.4m (south) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with Designed Tree Protection Measures	On site
313	*Fraxinus oxycarpa cv. 'Raywood'*	3*200	500	2	Moderate L/scape Sig.	4.20	54.30	2.90	2.50	The proposed basement car park is within 1.6m (south) of the tree.	Excavation is likely to involve severance of significant tree roots resulting in the decline of the tree and/or rendering it unstable.	To be Removed	On site
314	*Eucalyptus globulus*	900	1300	3	High L/scape Sig.	10.80	366.60	7.60	3.70	The proposed basement car park spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
408	*Callistemon viminalis*	1*60, 1*80, 1*120	260	2	Low L/scape Sig.	2.00	12.60	1.40	1.90	The proposed retaining wall is within 2.9m (west) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On adjacent allotment
474	*Banksia integrifolia*	400	520	2	Moderate L/scape Sig.	4.80	72.40	3.40	2.50	No proposed works apart from soft landscaping within the tree's Tree Protection Zone.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On adjacent allotment
475	*Brachychiton acerifolius*	420	560	2	Moderate L/scape Sig.	5.00	79.80	3.50	2.60	The proposed BBQ area is within 4.1m (north) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On adjacent allotment
476	*Cupressus sp.*	580	670	2	Moderate L/scape Sig.	7.00	152.20	4.90	2.80	The proposed BBQ area is within 3.7m (north) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with Designed Tree Protection Measures	On adjacent allotment
477	*Cupressus sp.*	550	650	2	Moderate L/scape Sig.	6.60	136.90	4.60	2.80	The proposed BBQ area is within 3.8m (north) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with Designed Tree Protection Measures	On adjacent allotment
535	*Liquidambar styraciflua*	450	650	1	Moderate L/scape Sig.	5.40	91.60	3.80	2.80	The proposed entrance structure spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
536	*Liquidambar formosana*	500	750	1	Moderate L/scape Sig.	6.00	113.10	4.20	2.90	The proposed front boundary fence is within 3.4m (south) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	Within road reserve
538	*Nyssa sylvatica*	400	550	1	Moderate L/scape Sig.	4.80	72.40	3.40	2.60	The proposed basement car park is within 5.2m (south) of the tree. The proposed entrance path is within 5.3m (east) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On site
539	*Ulmus procera "vanhouttie"*	500	800	2	Moderate L/scape Sig.	6.00	113.10	4.20	3.00	The proposed building footprint spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site

Tree No	Genus Species	DBH (mm)	DAB (mm)	SULE	Env./ L/scape Sig.	TPZ Radius (m)	Area of TPZ (m2)	Radius of 90% of TPZ area (7/10)	SRZ Radius (m)	Adjacent Works	Influence on Tree	Plan Status	On / off site
605	*Syagrus romanzoffianum*	240	400	2	Species is Exempt from Council's DCP	2.00	12.60	1.40	1.40	The proposed basement car park is within 0.6m (north) of the tree.	Excavation is likely to involve severance of significant tree roots resulting in the decline of the tree and/or rendering it unstable.	To be Removed	On site
606	*Cupressus sempervirens 'Swane's Golden'*	200	230	2	Low L/scape Sig.	2.40	18.10	1.70	1.80	The proposed BBQ area spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
615	*Archontophoenix cunninghamii*	220	340	2	Moderate L/scape Sig.	1.90	11.30	1.30	1.30	The proposed building footprint spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
616	*Pittosporum eugenoides 'Variegated'*	280	360	4	Low L/scape Sig.	3.40	35.50	2.40	2.20	The proposed building footprint spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
618	*Nyssa sylvatica*	1*400, 1*380	860	1	High L/scape Sig.	6.60	137.80	4.60	3.10	The proposed building footprint spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
619	*Ulmus parvifolia*	1*260, 1*500, 1*180, 1*400	900	2	High L/scape Sig.	8.60	230.80	6.00	3.20	A corner of the proposed basement car park is within 5.7m (north west) of the tree. The proposed courtyard retaining wall is within 3.0m (north east) of the tree.	Excavation is likely to involve severance of significant tree roots resulting in the decline of the tree and/or rendering it unstable.	To be Removed	On site
620	*Pittosporum undulatum*	2*320, 1*280	550	2	Moderate L/scape Sig.	6.40	128.20	4.50	2.60	No proposed works apart from soft landscaping within the tree's Tree Protection Zone	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On adjacent allotment
621	*Prunus sp.*	1*120, 1*130, 2*140, 1*60	500	2	Low L/scape Sig.	3.30	33.50	2.30	2.50	No proposed works apart from soft landscaping within the tree's Tree Protection Zone	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On adjacent allotment
622	*Ligustrum lucidum*	2*160, 1*100	380	1	Noxious Weed	3.00	27.70	2.10	2.20	No proposed works apart from soft landscaping within the tree's Tree Protection Zone	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On adjacent allotment
667	*Melaleuca quinquenervia*	1*400, 1*280, 1*180	680	2	Moderate L/scape Sig.	6.20	122.60	4.40	2.80	The existing boundary fence is to be removed and a new boundary fence is to be constructed within 2.5m (east, south & west) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with Designed Tree Protection Measures	On site
668	*Melaleuca quinquenervia*	1*340, 1*400	600	1	High L/scape Sig.	6.30	124.70	4.40	2.70	The existing boundary fence is to be removed and a new boundary fence is to be constructed within 2.2m (east, south & west) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with Designed Tree Protection Measures	On site
669	*Liquidambar styraciflua*	650	750	3	Moderate L/scape Sig.	7.80	191.20	5.50	2.90	The proposed front boundary fence is within 2.7m (south) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with Designed Tree Protection Measures	Within road reserve
713	*Eucalyptus racemosa*	1*600, 1*350	750	1	Moderate L/scape Sig.	8.30	218.40	5.80	2.90	The proposed basement car park is within 7.5m (south east) of the tree. The proposed front boundary fence is within 4.5m (north west) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with Designed Tree Protection Measures	On site

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project: **arboricultural impact assessment - 124-128 killeaton street, st ives**

drawing title: **impact of proposed development on individual trees**

Tree No	Genus Species	DBH (mm)	DAB (mm)	SULE	Env./ L/scape Sig.	TPZ Radius (m)	Area of TPZ (m2)	Radius of 90% of TPZ area (7/10)	SRZ Radius (m)	Adjacent Works	Influence on Tree	Plan Status	On / off site
714	*Eucalyptus grandis*	1000	1400	1	Very High L/scape Sig.	12.00	452.60	8.40	3.80	The proposed basement car park is within 8.0m (south) of the tree. The proposed front boundary fence is within 4.9m (north west) of the tree.	No significant impact with appropriate Tree Protection Measures.	Retained with Designed Tree Protection Measures	On site
838.404	*Syncarpia glomulifera*	1*200, 1*250	750	1	High L/scape Sig.	3.80	46.40	2.70	2.90	No proposed works apart from soft landscaping within the tree's Tree Protection Zone	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On adjacent allotment
900	*Archontophoenix cunninghamii*	1*230, 1*220	750	2	Moderate L/scape Sig.	2.30	16.60	1.60	1.60	The proposed building footprint spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
901	*Archontophoenix cunninghamii*	1*180, 1*200	600	2	Moderate L/scape Sig.	2.30	16.60	1.60	1.60	The proposed external path spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
902	*Archontophoenix cunninghamii*	180	400	2	Low L/scape Sig.	2.10	13.90	1.50	1.50	The proposed external path is within 1.0m (east) of the palm.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On site
903	*Archontophoenix cunninghamii*	220	300	2	Low L/scape Sig.	1.20	4.50	0.80	0.80	The proposed external path is within 1.2m (east) of the palm.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On site
904	*Howea forsteriana*	150	200	1	Low L/scape Sig.	1.00	3.10	0.70	0.70	The proposed basement car park is within 0.3m (north) of the tree.	Excavation is likely to involve severance of significant tree roots resulting in the decline of the tree and/or rendering it unstable.	To be Removed	On site
905	*Archontophoenix cunninghamii*	3*140	400	2	Low L/scape Sig.	1.30	5.30	0.90	0.90	The proposed external path is within 1.4m (north east) of the palm.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On site
906	*Archontophoenix cunninghamii*	1*40, 1*60, 1*100	220	2	Low L/scape Sig.	1.00	3.10	0.70	0.70	The proposed external path is within 2.0m (north east) of the palm.	No significant impact with appropriate Tree Protection Measures.	Retained with General Tree Protection Measures	On site
907	*Archontophoenix cunninghamii*	1*220, 1*120, 1*100	500	2	Low L/scape Sig.	1.50	7.10	1.10	1.10	The proposed basement car park is within 0.7m (north) of the tree.	Excavation is likely to involve severance of significant tree roots resulting in the decline of the tree and/or rendering it unstable.	To be Removed	On site
908	*Archontophoenix cunninghamii*	220	350	2	Low L/scape Sig.	1.30	5.30	0.90	0.90	The proposed building footprint spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
909	*Archontophoenix cunninghamii*	1*280, 1*300	700	2	Moderate L/scape Sig.	2.30	16.60	1.60	1.60	The proposed building footprint spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
910	*Syagrus romanzoffianum*	300	400	2	Species is Exempt from Council's DCP	1.80	10.20	1.30	1.30	The proposed external path is within 2.7m (west) of the tree.	No significant impact however, retention of the tree conflicts with the landscape plan.	To be Removed	On site
911	*Syagrus romanzoffianum*	260	300	2	Species is Exempt from Council's DCP	1.40	6.20	1.00	1.00	The proposed external path is within 2.1m (west) of the tree.	No significant impact however, retention of the tree conflicts with the landscape plan.	To be Removed	On site
912	*Syagrus romanzoffianum*	300	500	2	Species is Exempt from Council's DCP	1.90	11.30	1.30	1.30	The proposed driveway crossing spatially conflicts with the location of the tree.	Not applicable	To be Removed	Within road reserve
913	*Syagrus romanzoffianum*	300	600	2	Species is Exempt from Council's DCP	2.10	13.90	1.50	1.50	The proposed driveway crossing spatially conflicts with the location of the tree.	Not applicable	To be Removed	Within road reserve
914	*Syagrus romanzoffianum*	400	520	2	Species is Exempt from Council's DCP	2.50	19.60	1.80	1.80	The proposed building footprint spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
915	*Syagrus romanzoffianum*	250	350	2	Species is Exempt from Council's DCP	1.30	5.30	0.90	0.90	The proposed building footprint spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site
916	*Syagrus romanzoffianum*	400	600	2	Species is Exempt from Council's DCP	2.30	16.60	1.60	1.60	The proposed building footprint spatially conflicts with the location of the tree.	Not applicable	To be Removed	On site

Figure 7.1 - Tree No.312 looking west will require pruning of the low branch on the western (left) side

Figure 7.2 – Tree No.192 (left) will require branch pruning to provide vehicular access for the proposed driveway crossover.

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project
arboricultural impact assessment - 124-128 killeaton street, st ives

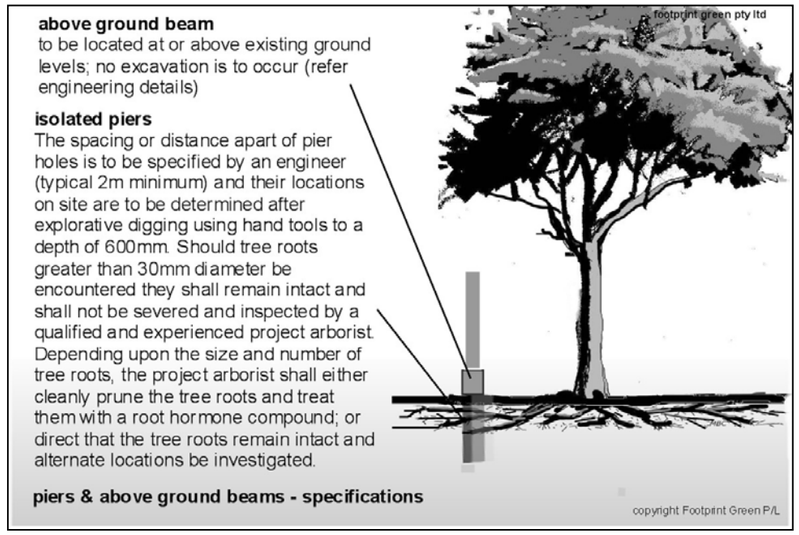
drawing title
impact of proposed development on individual trees

tree protection measures

designed tree protection measures

Proposed Front Boundary Fence in the Vicinity of Tree No's 7, 311, 312, 667, 668, 669, 713, 714

The proposed front boundary fence is to be constructed within the Tree Protection Zones of Tree No's 7, 311, 312, 667, 668, 669, 713 & 714. The existing masonry wall is within the vicinity of Tree No's 7, 667, 668 & 669. To minimise disturbance to the root zone the proposed boundary fence is to be constructed using the existing footings, where appropriate or constructed on piers incorporating above ground beams (refer specification below) or panel inserts between posts.



Proposed Driveway Crossing in the Vicinity of Tree No. 192 & 195

The proposed driveway crossing is within 2.8m (west) of Tree No.192 and is 3.4m (east) of Tree No.195. To minimise disturbance to the root zones of these trees removal of the existing driveway is to be carried out under the supervision of an experienced and qualified project arborist.

The alignment of the proposed driveway is to be excavated using hand tools under the supervision of a qualified and experienced arborist and no tree roots greater than 30mm diameter are to be damaged or severed. The project arborist shall inspect the work and depending upon the number and size of the exposed tree roots the project arborist shall either prune the tree roots and treat them with a root hormone compound or advise the project manager that alternate design levels be investigated to retain the tree roots.

specific tree protection measures

Proposed External Paths, Entrance Structure & BBQ area within the Vicinity of Tree No's 6, 7, 312, 476 & 477

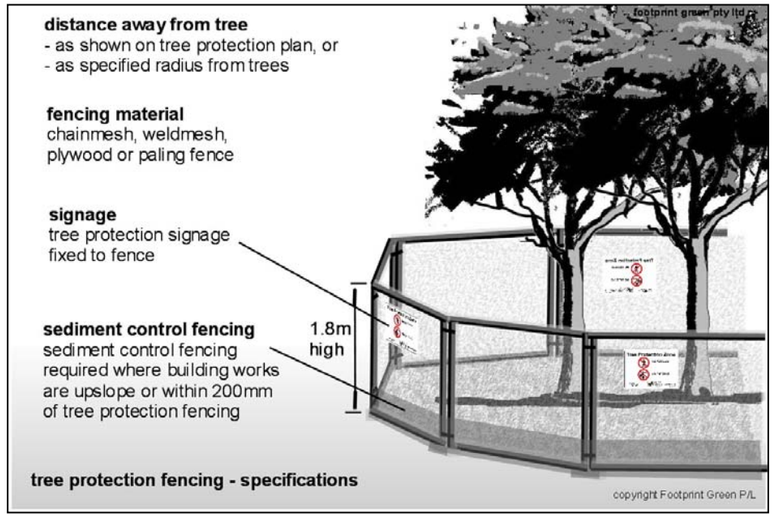
The proposed external paths, entrance structure and the BBQ area are considered to be landscape structures for the purposes of this report. These structures must be constructed at existing levels as that are within the Tree Protection Zones of Tree No's 6, 7, 312, 476 & 477 (refer specifications opposite).

general tree protection during construction

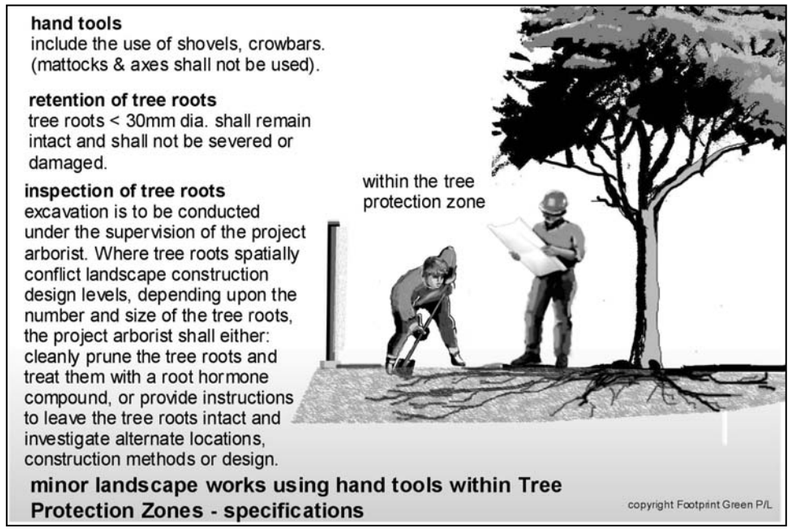
Prior to demolition or construction, the trees identified as being removed shall be removed ensuring that no damage occurs to the root system, trunk, branches or foliage of trees identified as being retained.

Prior to demolition or construction, secure protective fencing is to be erected around individual trees or groups of trees identified as being retained and should be located no closer than the Tree Protection Zones (refer TPZ sheets 7-9) unless the approved building footprint extends into the Tree Protection Zone.

The building contractor shall ensure that at all times during site works no activities, stock piles, storage or disposal of materials shall take place within the fenced off areas and that all Protective Fences remain secure throughout the development work period.



All access within the tree protection fencing for temporary and permanent works must be carried out under the instructions of an experienced and qualified project arborist.



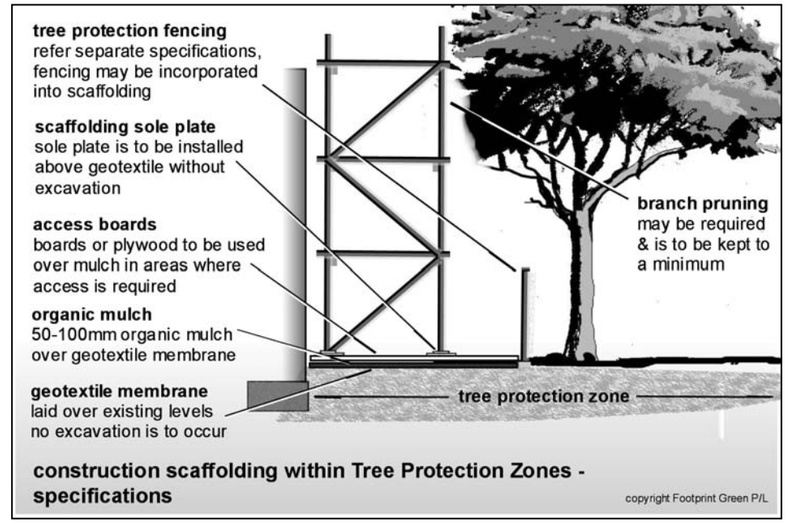
Tree Protection Fencing shall remain in functional condition for the duration of building works and can be removed to allow for soft landscaping works identified in the landscape plan.

Should construction scaffolding be required within the Tree Protection Zones of trees to be retained it must be constructed in accordance with the specification opposite.

Specific excavation for services that require critical fall (eg. sewer, stormwater) may be undertaken within the tree protection zones only under the direct supervision of the project arborist.

Outside the approved building footprints or retaining walls, landscape works in the vicinity of the trees must be sympathetic to tree retention and existing ground levels within the Tree Protection Zones (refer TPZ sheets 6-7) must remain unchanged.

Any tree damage that occurs to trees or tree roots during site works is to be treated by an experienced and qualified arborist. Should branch pruning be required, all pruning works including the removal of deadwood are to be undertaken in accordance with Australian Standard AS 4373-2007 Pruning of Amenity Trees and the work is to be undertaken by an experienced and qualified arborist.



tree report summary

conclusion

This report has been prepared to assess the condition and significance of a number of trees on and adjacent the properties at 124, 126 & 128 Killeaton Street, St Ives and assess the potential impact of the proposed development on the identified trees.

The assessments carried out in this report are based upon the Australian Standard 4970 - 2009, Protection of Trees on Development Sites. The terminology used in this report is also consistent with that used in the AS 4970-2009.

There are 60 trees that have been considered in this report of which 35 are located on the site, 15 trees are on adjacent allotments and 10 trees are located within the road reserve.

Of the **60** tree considered in this report based upon the proposed plans:

- **32** trees are to be retained (10 on site, 15 on adjacent allotments, 7 within the road reserve), and
- **28** trees are to be removed (25 on site, 3 within the road reserve).

Details of the 17 Trees in to be Retained On Site & Within The Road Reserve (number of trees)

Condition	Environmental / Landscape Significance					
	Noxious	Env. Pest (Exempt from DCP)	Low L/scape Sig.	Moderate L/scape Sig.	High L/scape Sig.	Very High L/scape Sig.
SULE - 1				7	1	1
SULE - 2			5	1		
SULE - 3				1	1	
SULE - 4						
Unstable						

Details of the 28 Trees to be Removed On Site & Within The Road Reserve (number of trees)

Condition	Environmental / Landscape Significance					
	Noxious	Env. Pest (Exempt from DCP)	Low L/scape Sig.	Moderate L/scape Sig.	High L/scape Sig.	Very High L/scape Sig.
SULE - 1			3	1	1	
SULE - 2		8	5	6	1	
SULE - 3					1	
SULE - 4			1			
Unstable			1			

Provided that the designed, specific and general tree protection measures (refer this sheet) are implemented and works are undertaken in a sensitive manner, it is considered that the proposed development will not have a significant impact on the long-term health of the trees identified as being retained.

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project: **arboricultural impact assessment - 124-128 killeaton street, st ives**

drawing title: **tree protection measured & report summary**