5.5. OPERATIONAL WORK REMOVE TREES 11 TI TREE ST PT DOUGLAS

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DEPARTMENT Development Assessment and Coordination

PROPOSAL Operational Works (Vegetation Damage) for tree removal

APPLICANT Steven Bowtell
23 Dilkera St
Balmoral Qld 4171

LOCATION OF SITE 11 Ti-Tree Street Port Douglas

PROPERTY Lot 25 on RP728667

LOCALITY PLAN

Figure 1 - Locality Plan

LOCALITY	Port Douglas and Environs
PLANNING AREA	Tourist and Residential
PLANNING SCHEME	Douglas Shire Planning Scheme 2006
REFERRAL AGENCIES	None Applicable
NUMBER OF SUBMITTERS	Not Applicable
STATUTORY ASSESSMENT DEADLINE	13 November 2017
APPLICATION DATE	5 September 2017

RECOMMENDATION

That Council approves a Preliminary Approval for the development application for Operational Work (Vegetation Damage) to remove two significant trees over land described as Lot 25 on RP728667, located at 11 Ti-Tree Street. Port Douglas, subject to the following:

APPROVED DRAWING(S) AND / OR DOCUMENT(S)

The term 'approved drawing(s) and / or document(s)' or other similar expressions means:

Drawing or Document	Reference	Date
Site Plan	**Generally as submitted with application on 5 September 2017 Council document 826336 and as amended by Condition 3.**	**5 September 2017**

ASSESSMENT MANAGER CONDITIONS

1. **Prior to an application for a Development Permit for Operational work (Vegetation Damage) being lodged, a Development Permit for Building Work must be current for a Swimming Pool in the front yard of the land.**

Amendment to Design

2. **The application for a Development Permit must be accompanied by amended plans that detail:**

   a. **The detail and particular location of the swimming pool and associated pool fencing;**

   b. **Landscaping in lieu of the removed significant trees having regard to the requirements for swimming pool fencing and overhead power lines connecting the house. All landscaping must be on the land.**

3. Carry out the approved development generally in accordance with the approved drawing(s) and/or document(s), and in accordance with:

a. The specifications, facts and circumstances as set out in the application submitted to Council; and

b. The following conditions of approval and the requirements of Council's Planning Scheme and the FNQROC Development Manual.

Except where modified by these conditions of approval.

Timing of Effect

4. The conditions of the Preliminary Approval must be effected prior to the lodgement of an application for a Development Permit for Operational Work (Vegetation Damage), except where specified otherwise in these conditions of approval.

5. No vegetation damage is to occur until the Issue of a Development Permit is issued.

Ant Plants and Other Protected Species

6. A clearing permit (protected plants) must be obtained from the Department of Environment and Heritage Protection prior to the clearing of vegetation and/or tree removal where plant species protected under the provisions of the Nature Conservation Act 1992 occur within the area covered by this development approval.

ADVICE

1. This Preliminary Approval, granted under the provisions of the *Planning Act 2016*, shall lapse two (2) years from the day the approval takes effect in accordance with the provisions of section 85 of the *Planning Act 2016*.

2. This approval does not negate the requirement for compliance with all other relevant Local Laws and other statutory requirements.

3. For information relating to the *Planning Act 2016* log on to www.dilgp.qld.gov.au. To access the *FNQROC Development Manual*, Local Laws and other applicable Policies, log on to www.douglas.qld.gov.au.

4. Council waves the application fee for the Development Permit for Operational work (Vegetation Damage).

EXECUTIVE SUMMARY

Application has been made to remove two large, mature *mealeuca leucadendra* paperbark trees. The trees are sited along the front property boundary. The applicant intends to construct a swimming pool in the front yard.

The development of the swimming pool is exempt building work under the planning scheme.

The excavation resulting for the swimming pool will cause damage to the tree roots and irrevocably impact on the trees' health and cause instability. Concern is raised with the timing of the application as no development permit for building work for a swimming pool has been made.

The report recommends a preliminary approval be issued requiring the land owner to hold a development permit for building work for the swimming pool and to lodge amended plans to suitably landscape the frontage having regard to the need for compliant swimming pool fencing. The vegetation damage cannot occur until a Development Permit for Operational Work (Vegetation Damage) has been issued. All new landscaping must be planted on the land.

TOWN PLANNING CONSIDERATIONS

Background

The house was constructed on the land in 1991. The house is setback approximately 7m from the front property boundary. Two building approvals have been issued each for the construction of a shed in the rear yard. No planning approvals were required for these constructions. The siting of the house is generally consistent with other houses in the street.

On 11 January 2013 the amendment to the Planning Scheme, the Vegetation Management Code, came into effect. Prior to this date vegetation damage was controlled by a Local Law.

There is no front fence to the property. There is a row of vegetation, including mature trees, along the front boundary. The lot has an area of 877m^2.

Proposal

Application has been made to remove two large *mealeuca leucadendra* trees. The trees are located at the front of the property. No land survey has been provided to equivocally identify the whole of the trees are on the land and not partly over the front property boundary. The majority of the trees appear to be sited on the land.

The applicant has advised of an intention to construct a swimming pool in the front yard of 8m x 4m immediately adjacent to the two trees. To date, no development permit for building work has been applied for or approved for the swimming pool.

The arborist report accompanying the application states that the integrity of the trees will be compromised by the excavation for the swimming pool. The trees are not compliant having regard to the distance to the proposed swimming pool fence.

The two mature trees are identified by the arborist as being in good condition having heights of 25m and canopy spread of 14 and 17 metres. The arborist offered the following comment on each tree, *"tree is located within feet of proposed excavations for pool and is too close to pool fencing for compliance. Much of the pool area will be within current drip line of tree. The construction is on the top side of the tree's lean which mean the excavation will cause damage to the tree root system and its integrity."*

The applicant has provided photographs of cracking in the driveway area and alleges this is a result of the trees.

Details of the two trees and the cracked driveway are included in Attachment 1 and the arborist report is included in Attachment 2.

State Planning Requirements

There are no state planning requirements affecting the development.

Douglas Shire Planning Scheme Assessment & Compliance Issues

Assessment of the tree removal is limited to the Vegetation Management Code. The development is code assessable. As the trees are greater than 7.5m in height, the development is assessed against the Performance Criteria P1 and P3. These Criteria are listed as follows and the criteria of concern are in bold.

Performance Criteria

P1 Vegetation must be protected to ensure that –

a) ***The character and amenity of the local area is maintained****; and*

b) Vegetation damage does not result in the fragmentation of habitats; and

c) Vegetation damage is undertaken in a sustainable manner; and

d) The regions biodiversity and ecological values are maintained and protected; and

e) Vegetation of historical, cultural and /or visual significance is retained;

f) Vegetation is retained for erosion prevention and slope stabilisation.

P3 ***Vegetation damage does not result in the removal of a healthy, significant tree from the streetscape.***

In respect to P1, the mature *mealeuca leucadendra* trees provide character and amenity to the local area. There are numerous specimens of these trees in the local area. The character and amenity of the local area is not as a whole lost by the removal of these two trees. Other vegetation could be established. However this would be dependant on the siting of the swimming pool and the type of pool fencing to be provided and conditions of an approval can address the performance criteria.

In respect to P3, the arborist has identified the trees as being healthy specimens. The arborist has advised that the trees are likely to become unstable and the trees' health will be irrevocably impacted on when the tree roots are damaged as a result of excavation for a swimming pool. Under the planning scheme a swimming pool is building work. The Scheme states for this planning area, building work is exempt development and no planning approval is required to construct a swimming pool. The swimming pool excavation will damage the health of the tree. Given this outcome it is difficult to sustain a refusal of the development application.

Concern remains to timing of the need to remove the trees for the proposed swimming pool development. It is recommended that a Preliminary Approval be issued requiring the land owner to achieve a current building approval for the proposed swimming pool and to require replacement landscaping.

ADOPTED INFRASTRUCTURE CHARGES

The proposed development does not trigger Adopted Infrastructure Charges.

COUNCIL'S ROLE

Council can play a number of different roles in certain circumstances and it is important to be clear about which role is appropriate for a specific purpose or circumstance. The implementation of actions will be a collective effort and Council's involvement will vary from information only through to full responsibility for delivery.

The following area outlines where Council has a clear responsibility to act:

Regulator: Meeting the responsibilities associated with regulating activities through legislation or local law.

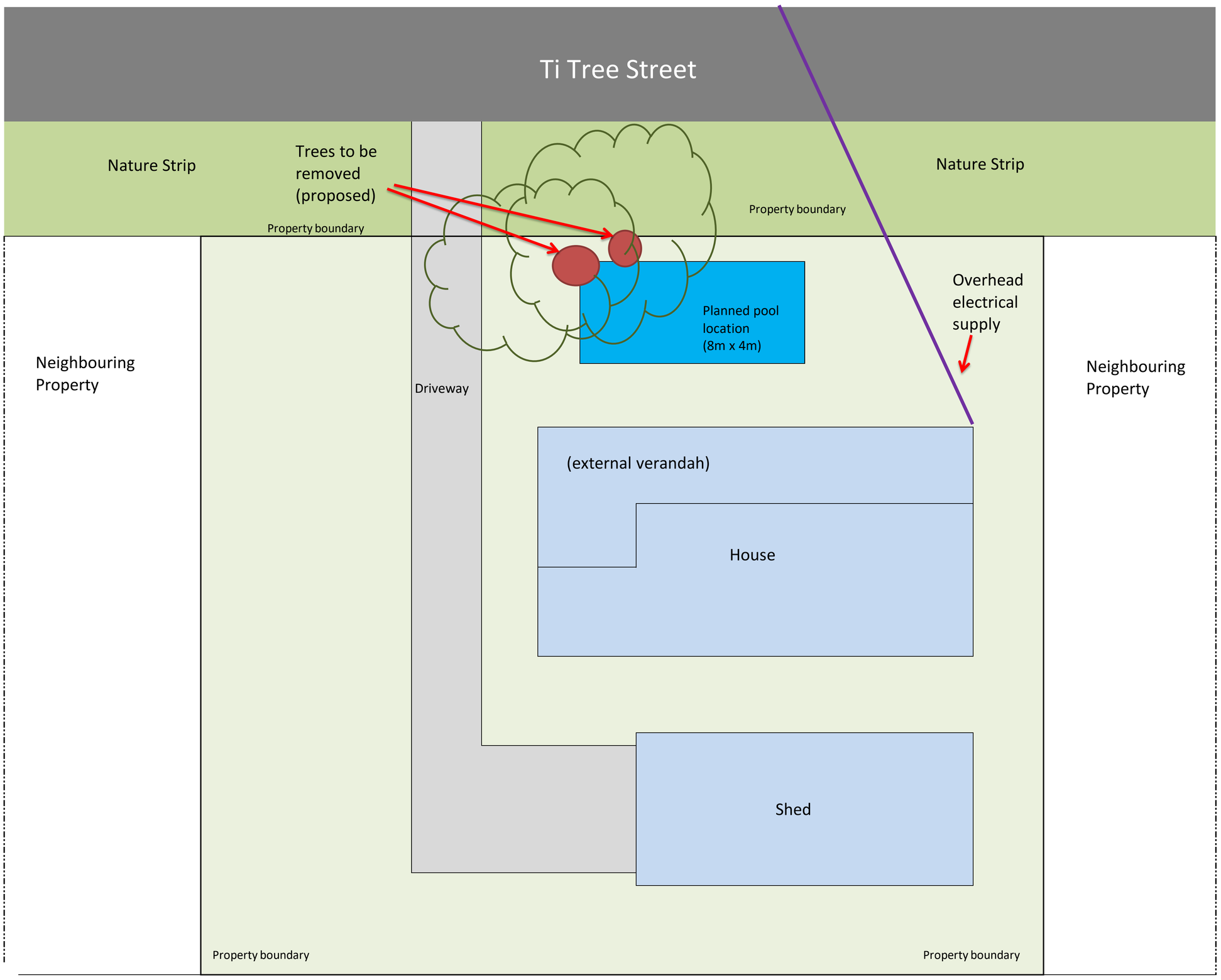
Under the *Planning Act 2016,* the *Planning Regulation 2017* and the *Development Assessment Rules 2017*, Council is the assessment manager for the application.

ATTACHMENTS

1. 11 Ti-Tree St Attachment 1 Site Plan **[5.5.1]**
2. 11 Ti-Tree St Attachment 2 Arborist report **[5.5.2]**

Site plan of 11 Ti Tree Street, Port Douglas.

Not to scale.



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TREE HEALTH AND CONDITION REPORT 20 September 2017

11 Ti Tree Street, Port Douglas QLD 4870

Diploma of Arboriculture: Billy Quaid

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1. Introduction

MPDT Pty Ltd has been commissioned by our client, Steve Bowtell. The aim of this survey was to establish the current health and condition of two large Melaleuca trees that are adjacent to a proposed pool excavation and fencing, and its sustainability.

These trees were assessed from ground level using accepted modern arboricultural techniques - no aerial or underground inspections were made.

The information and recommendations contained within this report are relevant to the survey date only. This report is relevant to a site visit 20/09/17. It must be remembered that trees are dynamic organisms, being subject to continuous change, and reassessment should therefore be carried out on a regular basis (recommended 6 monthly).

2. Objectives

The objectives of this report are:

- To provide a conditional assessment report on tree health and management for a number of trees located on the front right of property, and to determine the sustainability of tree when pool and fencing installed.

3. Information and Documentation Provided

At the time of the actual site inspection for assessment and health condition report Billy Quaid was met with client to go over plans for new pool and fencing.

4. Site Survey

On Tuesday 20th September 2017 Billy Quaid conducted an onsite inspection of 11 Ti Tree St Port Douglas. It was a clear and sunny day with a slight breeze. Trees have been tagged with metal survey tags 13 and 14.

4.1 Site Description

The trees inspected are located on the front right of street side of property, within 6m and 7m of eave of building, and 3m from the curb and channelling.

5. Materials & Methodology

The following is a description of elements included in the tree assessment.

- Species: the tree's botanical or common name as is most appropriate.
- Age: an estimation of the tree's age
  - Young (Y): from establishment, up to one third expected life span
  - Semi-mature (SM): between one and two thirds expected life span
  - Mature (M): between two thirds expected life span up to full maturity
  - Over mature (OM): trees older than expected life span or veteran trees
- Condition: the tree's overall health and condition
  - Good: good form, typical of species with no major defects present. Long safe useful life expectancy
  - Reasonable: Good or reasonable form. Any defects are easily rectifiable or can be managed
  - Poor: Poor form. Major defects present.
  - Dead
- DBH: the diameter of the tree in centimetres, measure at a height of approximately 1.5m. Used as a means of identification and gauge of future growth.
- Height: the height of the tree in metres, estimated using surveyor's own judgement (no measuring instruments were used in this survey).
- Spread: the crown spread in one direction only
- Comments: comments relating to the general health and condition of the tree.
- Recommendations: recommendations for remedial work or other relevant advice.
- Priority: Priority of recommended works
  - High (H): action required within one month
  - Medium (M): action advised within 3 months
  - Low (L): action not critical but advisable for longer term health of the tree/amenity value

The process of risk identification and controls have been carried out in accordance with AS/NZS 4360:2004 – Risk Management

Tree heights were determined with the use of a range finder

6.Collection of Data

The data collected for this tree health and condition report was done so of a preliminary nature. All data was collected from visible access points at ground level. No climbing or use of elevated work platforms was utilised. Due to the visual nature of this assessment there may be other issues that remain undetected

7. Tree Protection Zone

All plants consist of three main sections, a crown (leaves), a stem or trunk and a root system. Each one of these sections carries out specific functions necessary for the survival of the tree as all parts interact. Above ground and below ground these sections if damaged the entire tree will suffer and symptoms may appear in any part of the tree. Therefore, any demolition and construction operations that occur around trees must be carried out in such a way as to minimize the impact on the health of the tree.

The principles of a tree protection zone are the combination of root area and crown area requiring protection. It is an area isolated from construction disturbance, so the tree remains viable. This needs to be incorporated before and during works carried out to minimise the impact of encroachment to surrounding trees. We work to the recommendations of the Australian Standards (AS 4970-2009).

If required, we will utilise temporary protection measures to avoid any damage to surrounding vegetation. This will include the use of barrier tape, signage and star pickets to keep people out of the encroachment area. These will remain in place until all works are completed and your project manager is satisfied and requests us to remove it.

Other considerations within the TPZ include temporary watering to maintain soil moisture levels which need to be regularly monitored, the application of mulch around base of trees at a uniform cover of 150mm in depth (using coarse organic materials which comply with AS 4454-2003 - Soil conditioner, Compost and Mulches) and the supervision of any other activities within the TPZ such as landscaping etc.

As head arborist, I will be inspecting the site to ensure exclusion zones are in place and not encroached by other contractors.

8. Tree Protection Plan

A tree protection plan must be available on site prior to commencement of and during works. This must be accessible to the site manager, project arborist and contractors at all times so they are aware of its requirements.

Development Stage - Planning	Considerations	Actions to be taken
Detail surveys	• Council plans & policies • Heritage • Threatened species	• Existing trees to be accurately plotted on survey plan
Preliminary tree assessment	• Hazard/Risks • Tree retention value	• Evaluate trees suitable for retention and mark on plan • Provide preliminary arboricultural report & indicative TPZs to guide development layout
Preliminary development design	• Condition of trees • Proximity to buildings • Location of services • Roads • Level changes • Building operations space • Long term management	• Planning section of trees for retention • Design modifications to minimize impact to trees
Development submission	• Identify trees for retention through comprehensive arboricultural impact assessment of proposed construction • Determine tree protection measures • Landscape design	• Provide arboricultural impact assessment including tree protection plan and specification
Development approval	• Development controls • Conditions of consent	• Review consent conditions relating to trees

Development Stage - Pre-construction	Considerations	Actions to be taken
Initial site preparation	• State based OHS requirement for tree work • Approved retention/removal, pruning of amenity trees as per AS 4373 • Specifications for tree protection measures	• Compliance with conditions of consent • Tree removal/tree retention/transplanting • Tree pruning • Certification of tree removal and pruning • Establish TPZs • Install protective measures • Certification of tree protection measures

Development Stage - Construction	Considerations	Actions to be taken
Site Establishment	• Temporary infrastructure • Demolition • Bulk earthworks • Hydrology	• Locate temporary infrastructure to minimize impact on retained trees • Maintain protective measures • Certification of tree protection measures
Construction work	• Liaison with site manager • Compliance • Deviation from approved plan	• Protection measures in place as per arborist report and in the correct locations • TPZ's inspected & certified by onsite arborist • Does tree protection plan need modification
Implement hard and soft landscape works	• Installation of irrigation services, control of compaction work • Installation of pavement and retaining walls	• Remove selected protective measures as necessary • Remedial tree works • Supervision and monitoring
Practical completion	• Tree vigour and structure	• Remove all remaining tree protection measures • Certification of tree protection

Development Stage - Post construction	Considerations	Actions to be taken
Defects liability/maintenance period	• Tree vigour and structure	• Maintenance and monitoring • Final remedial works • Final certification of tree condition

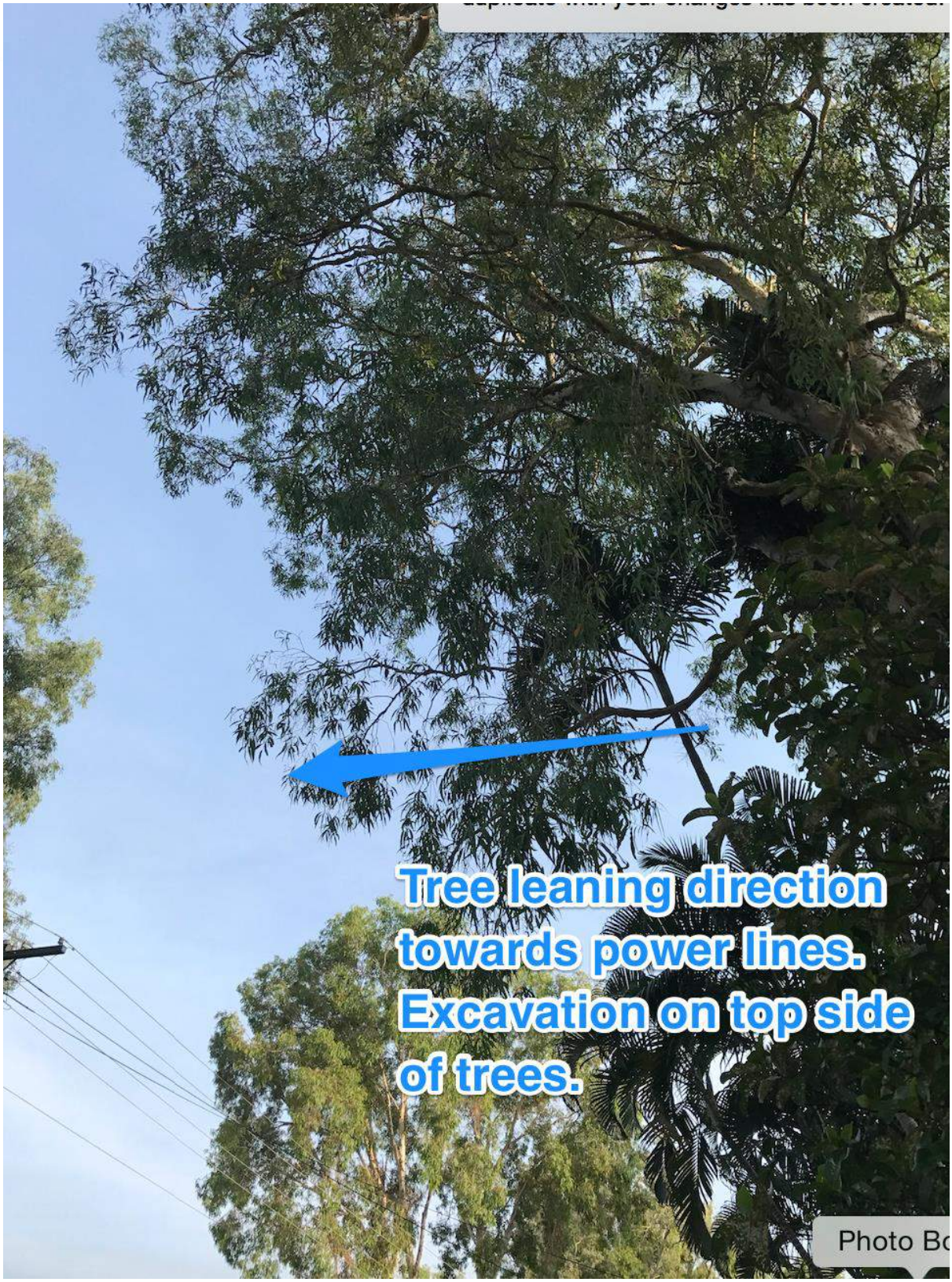
9. Survey Schedule

10. Tree #	Species	Age	Condition	DBH (m)	Height (m)	Spread (m)	DRF (m)
13	Melaleuca Leucadendara	M	Good	2.4	25	14	2.6

Comments	Recommendations	Priority
Tree is located within feet of proposed excavations for pool and is too close to pool fencing for compliance. Much of the pool area will be within current dripline of tree. The construction is on the top side of the trees lean which mean the excavation will cause damage to the tree root system and its integrity.	Removal and stump grind. The trees Integrity is going to be compromised by the excavation of pool. Also, with the pegged potential fence, its hard to see how it would be complaint with trees within metre of fence.	H

Tree #	Species	Age	Condition	DBH (m)	Height (m)	Spread (m)	DRF (m)
14	Melaleuca Leucadendara	M	Good	3.3	25	17	4.1

Comments	Recommendations	Priority
Similar to tree 13, Tree is located within feet of proposed excavations for pool and is too close to pool fencing for compliance. Much of the pool area will be within current dripline of tree. The construction is on the top side of the trees lean which mean the excavation will cause damage to the tree root system and its integrity	Removal & stump grind The trees Integrity is going to be compromised by the excavation of pool. Also, with the pegged potential fence, its hard to see how it would be complaint with trees within metre of fence.	H



10. Recommendations and Observations

The surveyed trees are currently in good condition, however it is expected that with any excavation works that are going to be within dripline of tree, particularly so close to base, would sacrifice the structural integrity of the tree. They are also leaning towards the street and overhead power lines.

With the layout of the pool and fencing, it could also see that the trees could become an issue with compliance.

Another tree on Davidson St Port Douglas, whilst different species, had excavation done on one side of the tree for a footpath which is far shallower than a pool. During high winds, this tree fell through the Aqueous resort as its root system was compromised.

For the reasons of safety, these trees would need to be removed and stump ground. Any Ant plants that are found, though not identified during assessment are to be transplanted to adjacent trees as per wet tropics requirements.

If contractors are to be engaged for remedial work, they should be fully qualified and experienced, being able to demonstrate a comprehensive OHS policy specific to tree work, with relevant insurances in place.

Appendix 1: Index of Arboricultural terms used

Amenity	**The quality of being pleasant or agreeable**
Arboriculture	The culture and management of trees as groups and individuals, primarily for amenity and other non-forestry purposes
Assessment	In relation to tree hazards, the process of estimating the risk that a tree or group of trees poses to persons or property
Basal Area	Area of tree around stem base, including visible buttress roots
Bifurcated	A tree with two main stems
Biomechanics	Mechanical loading of the tree's structure
Branch collar	A swelling at the base of a branch
Buttress roots	Angled roots at stem base
Cable braces	Branch or stem supporting system
Clean out	Removal process of dead, dying and diseased branches
Crown	The part of the tree comprising of limbs, branches and foliage
Crown lifting	Remove lower branches to a specified height
Crown reduction	Reduce the overall size of the crown proportionally
Crown spread	Distance from stem to crown edge
Crown thinning	The reduction of the volume of a crown without changing the overall height and spread. Often referred to as reducing the "sail area". The extent of thinning is dependent on tree species, tree health and site requirements
D.B.H	Tree diameter measured at breast height (approximately 1.5m)
Dead wood	Dead branches and stubs
Decline	A deterioration of a tree's general condition and vigour
Defect	In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of stress
Dieback	The death of part of a tree, often progressive
D.R.F	Diameter of root flare, diameter measured immediately above root buttress
Epicormic growth	Growth arising on mature stems, often following previous pruning or injury.
Failure	In relation to tree hazards, a partial or total fracture of wood or loss of cohesion between tree and soil
Formative Pruning	Selective pruning to promote good future shape and integrity
Included Bark	Branch union where there is bark to bark contact which results in a structural weakness.
Leader	Dominant Stem
Lopping	Removal of branches, now generally applied to heavy or excessive trimming
Multi stemmed	A tree with many main stems
Phototropic lean	Lean due to a tree's growth towards available light.
Root Plate	The base of the tree stem with major support roots
Slime Flux	Liquid exudation from the tree, bacterial based
S.R.Z	Structural root zone (the woody root growth and soil cohesion in this area for structural stability)
Sucker Growth	Growth from stem base and/or exposed roots
Topping	The removal of all or a large portion of a tree's canopy
T.P.O	Tree Preservation Order
T.P.Z	Tree Protection Zone (specified area for the protection of roots and crown for viability and stability)
Trifurcated	A tree with three main stems

Appendix 1: Index of Arboricultural terms used

V.T.A	Visual Tree Assessment
Vigour	Ability of a tree to sustain its life processes
Widow maker	Dead unattached branches in tree
Witch's Broom	Foliage disorder resulting in clustered and dense area of twigs
Q.T.R.A	Quantified tree risk assessment
P.O.F	Probability of failure
R.O.H	Risk of acceptable harm

Appendix 2: Tree Protection Zone Summary

The tree protection zone (TPZ) is the principal means of protecting trees on development sites. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable.

When determining potential impacts of encroachment into the TPZ, we should consider the following:

a) Location and distribution of the roots to be determined through non-destructive investigation methods (pneumatic, hydraulic, hand digging or ground penetrating radar). Photographs should be taken and a root zone map prepared.
b) Potential loss of root mass resulting from the encroachment: number and size of roots.
c) Tree species and tolerance to root disturbance
d) Age, vigour and size of tree
e) Lean and stability of the tree
f) Soil characteristics and volume, topography and drainage
g) The presence of existing or past structures or obstacles affecting root growth
h) Design factors

Tree sensitive construction measures such as pier and beam, suspended slabs, cantilevered building sections, screw piles and contiguous piling can minimize the impact of encroachment.

When siting a structure near to a tree, the future growth of the tree, both above and below ground should be considered. Precautions should be taken at the planning and design stage to minimize potential conflict between trees and new structures.

When the reach structure is reactive clay, techniques such as localised pier and beam (bridged), screw pile footings or root and soil moisture control barriers may be appropriate to minimize effects on structures.

The structural root zone (SRZ) is the area required for tree stability. A larger area is required to maintain a viable tree.

Some factors of the SRZ are tree height, crown area, soil type and soil moisture. These may influence built structures such as rocks and footings. The most common cause of damaged trees on development sites is root damage, as roots are far more extensive and closer to the surface than commonly thought. When using, heavy machinery is it important to take due care not only to not damage the tree directly, but to avoid soil compaction as this will suffocate the tree.

Crown Protection

Tree crowns may be injured by machinery and the removal of surrounding trees. Where crown protection is required it will be usually located at least one metre outside the drip line of the crown. Crown protection may include pruning, tying back of branches or other measures. If pruning is required, this should be undertaken before the establishment of the tree protection zone.

The TPZ is a restricted area usually delineated by protective fencing. This is installed prior to site establishment and retained intact until completion of work.

Some works and activities within a TPZ may be authorised by the determining authority. These may be supervised by the project arborist. Any additional encroachment that becomes necessary as the site works progress must be reviewed by the project arborist and be acceptable to the determining authority before being carried out.

Approved tree removal and pruning should be carried out before the installation of tree protection measures.

Activities restricted within the TPZ include but are not limited to –

a) Machine excavation including trenching
b) Excavation for silt fencing
c) Cultivation
d) Storage
e) Preparation of chemicals, including preparation of cement products
f) Parking of vehicles and plant
g) Refuelling
h) Dumping of waste
i) Wash down and cleaning of equipment
j) Placement of fill
k) Lighting of fires
l) Soil level changes
m) Temporary installation of utilities and signs
n) Physical damage to the tree

Protective fencing should be erected before any machinery or materials are brought onto the site and before the commencement of works including demolition. Once erected, protective fencing must not be removed or altered without approval from the project arborist. The TPZ should be secured to restricted access.

The negative impacts of inadequate development design, planning and supervision are cumulative and very difficult to remediate after development is completed. The best way to ensure the long-term retention of established trees is to follow the guidelines of the Australian Standards AS 4970-2009. (reference material in Tree Protection Zone taken from AS 4970-2009).