

11.1 **Fig Tree Management**

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Delivery Program Open Spaces and Reserves

Objective To report on a tree management issue and seek the endorsement of Council on the preferred course of action.

Background

Council has received two public liability claims for damage to property in Castle Drive, Lennox Head. The cause of the damage to property is identified in those claims as a fig tree located on the nature strip in between the two houses.

Council has previously considered reports on this tree in 2005 and 2008, following concerns of damage, limb drop and tree health. A Councillor briefing was also held in 2015 to highlight issues associated with the tree.

Council has previously stated its position is to retain the tree, with an elevated level of monitoring and undertaking additional pruning works.

Council's insurers are currently assessing these claims and have recommended that the tree be removed or if deemed appropriate and effective, a tree root barrier installed.

As Council has now been put on notice of the extensive damage caused by the fig tree, should no action be taken to rectify the situation, Council may be faced in a situation of being uninsured for any further damage to properties at this location caused by this tree.

Previous attempts at installing root barriers have proven unsuccessful.

Key Issues

- Tree management
- Council Insurance
- Liability Claims

Information

The tree (*Ficus macrophylla*) or Moreton Bay Fig is located within the road reserve of Castle Drive, Lennox Head. Refer to the site map at attachment one.

The mature fig is approximately 20m in height with a canopy spread of approximately 30m.

The subdivision was registered in 1981 with a specific intent to retain the tree; however both adjoining properties are constructed close to or under the drip line of the tree.

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The tree does add significance to the community based on its age, size, species and habitat value. An independent arborist report (attachment two) received in 2015 identifies the tree as displaying good vigor and sound structure for its species, size and age range.

Concerns regarding the tree were first notified to Council in 2004, specifically in relation to dropping limbs, encroachment of limbs to property and overall tree health.

Council, at the time, investigated these concerns and undertook the required pruning in addition to undertaking arborist reports.

A formal report was first presented on this matter to Council in November 2005, and a subsequent report presented in May 2008 (attachment three) following a request for further information, with Council resolving;

To endorse the procedure detailed in this report as satisfactory for the ongoing retention and management of the Castle Drive Fig Tree.

Following this resolution, major pruning works were undertaken on the tree and an increased inspection framework was also implemented on a minimum six month frequency, with works undertaken as required as a result of these inspections and customer requests.

In addition to this increased monitoring and management, Council staff have previously responded to property damage at neighbouring properties as a result of root incursion in 2008 and 2011.

These events involved damage to pavers, with staff undertaking root pruning works and undertaking landscape works to rectify. Council's insurers were not notified of these works.

In April 2016 Council received further notification of property damage to paved areas. Upon notification, Council's Insurer engaged a loss assessor to inspect damage and quotations were sought to rectify. The lowest quote received for this damage was \$19,862.67.

In 2015, Council received advice from a second property owner that root incursion had caused damage to stormwater infrastructure and building damage.

Council's insurer engaged a loss assessor to inspect damage and under a deed of release, repairs were undertaken to the stormwater at a cost to Council of \$5,800.

Council's insurer has provided advice that by virtue of approving the residential housing development adjacent to the fig tree, Council has been on notice of the issue for many years and it is possible that Council is liable in negligence and nuisance for the damage caused to property as a result of the tree.

Current management options available for Council to consider in regards to the future of the Castle Drive Fig include:

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Attempt the Installation of a Root Barrier

Ficus species are known for their vigorous root growth and root barriers have limited success in the ability to control fig roots.

Council may be able to install a root barrier, however there are limitations based on available space, impact of electrical and water services and placement of the root barrier.

Due to the proximity of the tree to the adjacent properties, root pruning for installation of a root barrier would be within the Tree Protection Zone (TPZ) and close to impacting on the Structural Root Zone (SRZ).

Whilst Ficus species are known to tolerate some encroachments into the TPZ, older trees generally do not respond well to root pruning and any root barrier in close proximity to a tree trunk will generally do damage to a mature tree.

Given the proximity of property to the tree this could increase the risk to adjoining residents.

It is estimated that these works could cost approximately \$20,000 with no guarantee of the tree survival, or further root damage, due to overtopping or further invasive root growth.

Tree Removal

Council could determine to remove the tree, undertake stump grinding and replace with a native species with less invasive roots. Given the size of the tree and site constraints due to proximity to property, it is estimated that works would cost approximately \$6,000.

Take No Action

If Council determines to take no action in relation to the tree it runs a serious risk of losing the ability to maintain coverage under Council's insurance policy for these sites.

Sustainability Considerations

- **Environment**
The Council only removes trees when it is essential to do so and generally the only acceptable reasons relate to managing the risks of property damage or public safety, and where it is necessary for the provision of essential services.
- **Social**
The tree is substantial and it contributes to the amenity of this area.
- **Economic**
Liability exposure for the Council is an important consideration.

Legal / Resource / Financial Implications

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Substantial staff resources have been allocated to undertaking biannual inspection on this tree and undertaking remediation works as a result of damage to private property caused by this tree.

As Council's insurer has highlighted that no further claims may be considered on this tree, Council wears a significant potential liability in the event of further damage.

Works related to this report would need to be funded from Council's Open Spaces budget.

Consultation

No public consultation has been undertaken in the preparation of this report. Previous discussions regarding this tree have considered community feedback in favour of the retention of the tree given its age and iconic status within this residential precinct.

Options

Council can determine to take one of the following actions

1. Undertake tree removal
2. Attempt the installation of root barrier
3. Maintain the status quo (being to monitor and maintain the tree to the extent possible, and respond to property damage claims with rectification as appropriate).

Council has committed substantial resources in attempts to retain this tree and mitigate the impacts to the adjoining property. Having regard to the advice of our insurer, including the possibility Council may lose insurance cover, the potential cost exposure to Council means regrettably it is recommended for the tree to be removed.

RECOMMENDATION

That following the recommendation of Council's insurer, Council approves the removal of the Fig Tree located within the road reserve at Castle Drive, Lennox Head, with a suitable native species to be planted as a replacement.

Attachment(s)

1. Site Map
2. Arborist Report
3. Council Report May 2006

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Fig Tree Castle Drive, Lennox Head

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geographical information system
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Prepared by Integral Tree Care for Ballina Shire Council

Arborist report on *Ficus macrophylla* for Ballina Shire Council
7th of December 2015

Introduction:

Integral Tree Care was requested by Ballina Shire Council (BSC) to provide an Arborist report on a *Ficus macrophylla* located in front of 7 and 9 Castle Drive, Lennox Head on council land. A site visit and tree inspection was carried out on the 03/12/2015 by Consulting Arborist Mark Gistlir over a period of about 45 minutes. Tree roots in a stormwater pipe at 7 Castle Drive had prompted this tree inspection. The weather was overcast and windy.

Methodology:

Visual Tree Assessment (VTA) was made from ground level which was used to determine vigour, condition and structural integrity. VTA observes such things as Pathogens/Rots, Mechanical damage, Deadwood, Structural issues, Twig Dieback, Leaf size and colour. The inspection was limited to non-invasive methods and all observations were made from the ground. Distances are all approximations.

Observations:

Location – Located in front yard / nature strip approximately 11m from the building footprint of 7 Castle Dr and 12 metres from the building footprint of 9 Castle Dr.
Roots – Sound. There was minor mower damage to surface roots (no decay visible). Major surface roots visible up to 7m from trunk (See Photo 3). Roots interfering with storm water pipe.
Trunks – Sound. Central main trunk has been lopped previously, decay present. Large wound on other main trunk, sound reaction wood adjacent (See Photo 1).
Crown/Branches – Sound. Wounds from previous pruning, sound development of wound wood (See Photo 2). Minor deadwood 50>mm present.
Leaves – Sound. Leaf density through crown normal. Size and colour normal.

	Dimensions
Height	20 m
Canopy spread	30 m
DBH	5000 mm
Age range	Mature

Table 1.

Conclusions:

The reaction wood present at wounding and throughout this tree is indicative of a tree displaying good vigour and sound structure typical for its species', size and age range. The value of this tree to community and environment should be considered when making management decisions as its size, species, age and habitat value are all significant. *Ficus* species are known for their vigorous root growth so measures to prevent further interferences with infrastructure should be made. Due to the proximity of the tree to the adjacent properties, root pruning for installation of a root barrier would be within the Tree protection zone (TPZ). *Ficus* species are known to tolerate considerable encroachments into the TPZ, although the incursion into the TPZ in this instance will be major and will require considerable compensatory measures to be diligently executed to maintain a healthy tree.

	Distances
Structural root zone (SRZ)	5.51 m radius
Tree protection zone (TPZ)	15 m radius

Table 2.

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Recommendations:

Option a: Install Root barrier *

- To be installed to a depth of 1.8 m and with 50 mm exposure above ground level.
- All cut roots (and, indeed the cut face of all excavations) are to be treated with a Trichoderma solution (antagonistic fungi) immediately after cutting.
- Root barrier backfilled with a Structured soil
- Services should be diverted around Root barrier where possible as incursions into the root barrier may be an entry point for roots.
- Supplementary watering
 - * Further consultation will be required prior to implementation of Root barrier installation to assess location of underground services, placement of Root barrier and quantify supplementary watering and compensatory measures for the TPZ encroachment.

Option b: Remove tree and replace with native species with less invasive roots.

References:

Matheek, C. & Bralton, H. (1994). *The Body Language of Trees: A Handbook for Failure Analysis*. The Stationary Office, London.

Lonsdale, D. (1999). *Principles of Tree Hazard Assessment and Management*. The Stationary Office, London.

Standards Australia (2009). *Australian standard – Protection of Trees on Development sites AS 4970-2009*. Standards Australia, Sydney.

Disclaimer:

It must be acknowledged that trees are biodynamic organisms that constantly change throughout their existence, increasing in size, complexity and ecological importance as they age. They can be adversely affected by pests, extreme weather conditions or the activity of humans. Regular inspections should be undertaken in order to monitor trees health, and to make suitable management proposals in order to ensure maintenance of a continued healthy urban forest.

While I take all care in preparing this report, I can take no responsibility for the continuing vitality of the trees that are assessed, or for any damage that they might cause in the future. I cannot be held responsible if damage occurs, or if tree health deteriorates as a result of a failure to implement the recommended protective measures, or from poor management practices that might occur in the future.

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Photo 1



Photo 2



Photo 3

Project Arborist:
Mark Gistlin Dip. Arb

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1. Castle Drive Fig Tree – Management

Introduction

The purpose of this report is to advise Council of the outcome of a risk assessment carried out by Council's Insurer and make recommendations for the ongoing management of the Fig Tree located in Castle Drive, Lennox Head.

Background

At the November 2008 Council meeting, Council resolved the following:

That Council resolve to retain the Fig tree described in the report and that the Castle Drive Fig tree be subject to a specific risk analysis and a further report provided to Council.

Attachment A provides a copy of the previous Council report regarding the issues associated with this tree.

Discussion

A representative from Council's insurer, Statewide North Coast, has inspected the Fig Tree and studied the tree assessment reports.

The following management procedure has been considered by Council's insurer.

"Initial remediation works be carried out to eliminate the potential hazard that this tree poses to persons and property. This work will involve significant pruning works to remove damaged, decayed and structurally poor branches as outlined in the original Tree Report.

In addition to this major work, minor works will be carried out within the limitations of the Australian Standard 4373-1996 Pruning of Amenity Trees to reduce the sections of the tree overhanging adjoining properties.

The initial remediation work should be carried out as soon as practical with the minor pruning works and further pruning to be carried out approximately six to twelve months later to allow the tree to recover from the initial pruning works. The tree will then be subject to regular 12 monthly inspections of its above ground parts and root spread."

Work has commenced on Council's "Tree Asset Database and Management Protocol". This work involves the assessment of all trees located in urban areas on public land (streets and parks). The assessment details are recorded in a database and any remedial actions that are required are also detailed and prioritised. The database then sets the timing for future inspections. The Castle Drive Fig tree will be managed as part of this Protocol.

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Council's Insurer has advised that the actions detailed above appropriately address the management of risk associated with the tree.

It must be acknowledged, however, that limbs can fall from a tree at any time, so the provision of fencing and / or warning signs to discourage entry under the tree's canopy area would reduce the potential for human injury and hence exposure to a claim against Council.

Whilst the fencing of the site is an option, the creation of the *"Tree Asset Database and Management Protocol"* provides Council with a documented management strategy and record keeping process that will satisfy Council's Insurer.

On this basis it is not considered necessary to place warning signage or fence the tree as a risk management measure, as these funds would be better placed towards tree management needs elsewhere.

RECOMMENDATION

That Council resolve to endorse the procedure detailed in this report as satisfactory for the ongoing retention and management of the Castle Drive Fig Tree.

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Attachment A

Removal of Fig Trees, Castle Drive Lennox Head

Introduction

The purpose of this report is to inform Council of issues associated with two Fig Trees that are located on public land and to consider requests from the residents for the removal of the trees.

Background

Two large Fig trees have been brought to the notice of Council by residents living in properties close to the trees. These trees are located in a park and in the road reserve and have been retained at the time of subdivision because of their aesthetic and ecological value.

Tree 1 is located in Castle Drive, Lennox Head. Attachment A shows the location of the tree in relation to adjacent properties. It should be noted that the photo was taken in 2003 and since then the tree has been pruned to the property boundary.

Tree 2 is located in a park at Fig Tree Hill, Lennox Head. Attachment B shows the location of the Fig tree and other Fig trees in relation to the adjacent property. Again significant pruning has taken place since the photo was taken.

These trees were all retained at the time of subdivision and located on public land to ensure that they were retained into the future. However in each case houses have been constructed close to or under the drip lines of the Fig Trees. Residents are now concerned about possible damage to their properties from roots and falling branches. They are also concerned about injury to people that may be caused by falling branches and concerned about the mess the trees make.

Discussion

Tree reports were prepared by qualified personnel and a summary of these reports is provided as Attachment C.

The Fig trees were determined to be of significance at the time of subdivision of the areas and retained for their aesthetic and ecological value. However the construction of houses has been permitted on adjoining properties with no regard for the ongoing welfare of the trees or for the impacts the trees will have on the residents who live close to or under the trees.

Residents living adjacent to the two trees have expressed to Council their concern for their property and personal welfare and have requested the removal of the two Fig trees.

Two issues need to be considered in making a determination on the retention or removal of the trees.

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- i) Of what significance are the trees to the whole community?
- ii) Can the perceived and real risks associated with the trees be managed in order make the trees safe enough to retain?

Residents in the general area of the two trees have been advised that a report is being presented to Council requesting the removal of the trees and feedback from residents has been requested.

Castle Drive Fig Tree

The Castle Drive Fig tree is in the process of being pruned to clear the adjoining property boundaries however this is not sufficient for the residents who live closest to the tree. To date no measures have been put in place to address the spread of roots into these properties. No root damage has been reported at this point in time.

The residents are concerned that a person or child could be hurt or killed should they be struck by branches falling from the tree. The tree has been assessed as being old and, due to disturbance to the tree in the form of root damage and previous pruning of branches, is in decline, however, the tree still has a reasonable life expectancy.

In this case the tree could be fenced using pool fencing or similar to stop access to the fall zone of the tree. A warning sign could also be placed to advise that the area is prone to branch drop and no access is permitted. The tree would require regular pruning to maintain the canopy at the property boundary. Monitoring for root damage or incursion will also be required. Residents would also be free to install root barriers to protect their own property from possible damage.

Fig Tree Hill Fig Tree

This tree has been pruned to remove the branches that over hang the adjoining property and a root barrier has been installed to assist in the control of roots entering the property. The area under this tree is not used by residents and so there is not the need to fence the area, however advisory signage would be appropriate to advise of the risk of falling branches in windy weather.

Summary

The retention of significant Fig trees has not included an appropriate buffer area between the tree and the construction of houses.

Residents have requested the removal of the two trees to allay their fears for their property and personal safety.

The trees are community assets and consultation with the community should be allowed before any decision is made.

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Both trees could be retained if management regimes and inspections were put in place and the resources required for these systems provided.

Council needs to balance all of these matters in formulating a final decision.

Conclusion

Given Council's original intentions in regard to the trees, and that the issues that are emerging can be managed without the removal of the trees, the recommendation to Council is for retention.

Alternatively, Council could determine to remove the trees. If that is Council's preference, prior to making such a decision, it is suggested that it is appropriate for Council to seek community feedback and recommit the matter for consideration.

RECOMMENDATION

That Council resolve to retain the trees, described in the above report, and put in place the resources required to implement the suggested management system.

11.3 Fig Tree Management - Castle Drive, Lennox Head.DOC

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Attachment C

Tree Reports - Summary

Castle Drive Fig Tree

This tree is a *Ficus macrophylla* and is estimated at about 200 years old. The tree is estimated at 18 metres in height, has a crown of 23 metres in diameter and a trunk diameter of 4.1 metres.

The tree contains dead wood and has experience large branch drop over the last couple of years. During windy weather the tree drops a lot of debris in the form of dead branches of varying size.

Fig trees are long living species and undisturbed could be expected to live for several hundred years. However this tree has been subject to disturbance during the subdivision of the land. This involved the clearing of vegetation cover, readjusting of ground levels with cutting and filling, the laying of services and compaction from increased traffic around the tree.

The tree would be classified as mature and because of the recent disturbance the tree is now in decline. However the useful life expectancy of the tree is still significant enough to consider the retention of the tree.

Should the tree be retained it is recommended that removal of dead wood be performed to assist in lowering the risk of falling branches.

Fig Tree Hill Tree

This tree is a *Ficus macrophylla* and is estimated at around 200 years old. The tree is estimated at 20 metres in height, has a crown of 25 metres in diameter and a trunk diameter of 2.2 metres.

The tree is healthy and has less than 10 percent deadwood in the canopy. The tree has some faults in the form of rotax and random limb growth.

Some limbs greater than 200mm at the cut have been lopped at the property line and resulting shoot growth is evident at the extreme end of the cut limb.

The tree exists to the immediate North of and in close proximity to another similar sized Fig tree. The other tree has been pruned to clear the property boundary and is of minor concern to the resident.

Both trees have suffered root damage as a result of excavations that were carried out for the construction of the house. Roots have been located under paving and along the foundations of the house. There is very little access by residents around and under the Fig trees so compaction of the soil and root damage is minimal.

Monitoring of the condition of the tree and regular pruning to contain the size of the tree will be required if the tree is to be retained.