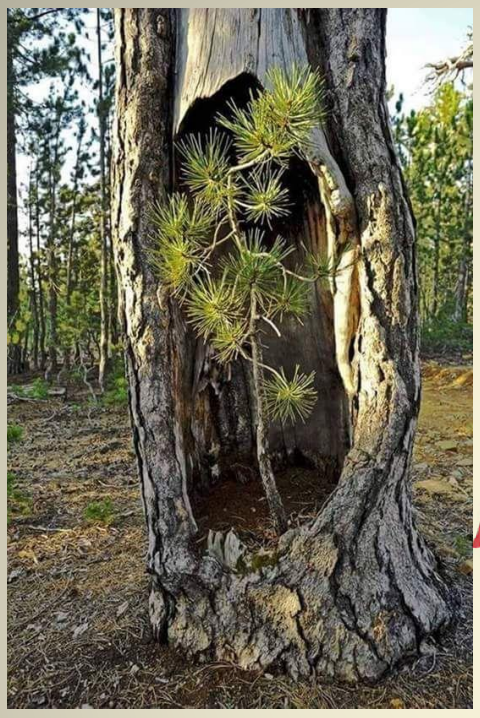
SLICKS
TREE
CONSULTING
SERVICES

14 Princeton Street
Mount Duneed
Geelong, Vic 3217
ABN **13 564 650 830**
Mobile: 0448 660 560
Email: slickstrees@outlook.com



Glenn Woollard
SLICKS TREE
CONSULTING SERVICES

Arboricultural Report For

Holy Spirit Catholic Primary School, 83 Minerva Road Manifold Heights

Report Prepared For

Marita Webb

Report Prepared By:

Glenn Woollard
Cert V Diploma Qualified Arborist

9/12/2023

Consulting Arborist: Glenn Woollard (**Owner/Operator**)

- Cert 5 Diploma Qualified Arborist
- Cert 3 Qualified Arborist
- Cert 4 Qualified OHS
- Cert 4 Business Management
- Current working with children check
- Cert 4 Business Management

Table of Contents

1 Brief

I have been engaged by Marita Webb to provide a Health & Safety Tree Risk Rating Report for Holy Spirit Catholic Primary School, 83 Minerva Road Manifold Heights. The report has been prepared by an appropriately qualified Arborist, who has assessed the major specimens as per the brief specifications. It conforms to the Australian Standard 4970-2009 for Protection of Trees on Development Sites and Australian Standard 4373-2007 for Pruning of Trees on Amenity Sites.

2 Key Objectives

All trees on site have been inspected, this report provides a comprehensive list of significant trees requiring no works, removal, or remedial works. For trees identified as unsafe or requiring remedial works, a Risk Assessment has been conducted. The Health & Structure of each tree has been assessed, and a retention value assigned. Each significant tree and trees requiring works have a priority completion timeframe assigned. Additionally, the report documents recommendations and a Useful Life Expectancy (ULE) for the long-term management of each tree.

3 Methodology

A ground inspection was conducted by a Qualified Cert V Arborist. The assessment was conducted solely from the ground, with no aerial or internal investigations conducted. Tree height and canopy width were measured in an east/west direction. The collected data was analysed by Glenn Woollard and compiled into a report format, which includes relevant recommendations. No foliage or soil samples were taken at time of the inspection.

4 Project Arborist

An arborist with suitable qualifications and competency, including a minimum Australian Qualification Framework (AQF) Level 5, Diploma of Horticulture (Arboriculture) and equivalent industry experience of 20 years, is considered qualified to perform tasks required by the Standard. This level of knowledge and skill enables the arborist to fulfill their duties adequately.

Project Arborist	Glenn Woollard
Qualifications	Diploma of Arboriculture
Phone	0448 660 560
E-mail	slickstrees@outlook.com

5 Summary of Tree Data

Holy Spirit Catholic Primary School has **42 trees** that have been assessed within the school grounds. Trees are a mixture of native and Non-native trees that range from recently planted to mature species**.**

6 Priority Timeframe

The following timeframes relate to priority ratings for which recommended works should be carried out:

Immediately	Must be completed immediately, these trees represent an immediate hazard.
Urgent	Must be completed within 3 months.
High	Must be completed within 6 months.
Annually	Must be completed every 12 months.
Moderate	Must be completed within 12-24 months.
Low	Must be completed within 24-36 months.
N/A	No works required at time of inspection.

6.1 Timeframe for Completed Works

Out of the **42** trees assessed **12** trees require works as listed below.

- **9** Trees require **Urgent** works Must be completed within 3 months.
- **2** Trees require **High** works Must be completed within 6 months.
- **1** Trees require **Annual inspection** and Must be completed every 12 months.

.

6.2 Full Tree Works Data List

Full data list of all trees assessed on site.

Tree Number	Genus Species	Works Required	Timeframe for Completion
Tree 1	*Robinia pseudoacacia 'frisia'*	Uplift over driveway & council footpath	Urgent
Tree 2	*Robinia pseudoacacia 'frisia'*	Uplift over driveway	Urgent
Tree 3-7	*Pyrus capital*	Uplift over council footpath	Urgent
Tree 8	*Robinia pseudoacacia umbracauilifera*	No works required at time of inspection	N/A
Tree 9	*Robinia pseudoacacia umbracauilifera*	No works required at time of inspection	N/A
Tree 10	*Robinia pseudoacacia umbracauilifera*	No works required at time of inspection	N/A
Tree 11	*Robinia pseudoacacia umbracauilifera*	No works required at time of inspection	N/A
Tree 12	*Robinia pseudoacacia umbracauilifera*	No works required at time of inspection	N/A
Tree 13	*Pittosporum tenunifolium*	No works required at time of inspection	N/A
Tree 14-27	*Pittosporum tenunifolium*	No works required at time of inspection	N/A
Tree 28	*Pyrus calleryana bradford*	Uplift tree & clear of shade sail	Urgent
Tree 29	*Pyrus calleryana bradford*	Clear of shade sail	Urgent
Tree 30	*Pyrus calleryana bradford*	Uplift tree	Urgent
Tree 31	*Pyrus calleryana bradford*	Uplift tree	Urgent
Tree 32	*Acacia mearnsii*	Remove deadwood greater than 25mm	Urgent
Tree 33	*Acacia mearnsii*	• Remove deadwood greater than 25mm. • Reinspect decay every 12 months	Urgent Annual
Tree 34	*Acacia mearnsii*	No works required at time of inspection	N/A
Tree 35	*Acacia mearnsii*	No works required at time of inspection	N/A
Tree 36	*Acacia mearnsii*	No works required at time of inspection	N/A
Tree 37	*Acacia melanoxylon*	No works required at time of inspection	N/A
Tree 38	*Robinia pseudoacacia frisia*	No works required at time of inspection	N/A
Tree 39	*Robinia pseudoacacia frisia*	Clear foliage around shade sail	High
Tree 40	*Robinia pseudoacacia frisia*	Clear foliage around shade sail	High
Tree 41	*Robinia pseudoacacia frisia*	No works required at time of inspection	N/A

6.3 Urgent Works Required

9 Trees require Urgent works and should be completed immediately; the recommended works required have identified an immediate hazard.

Tree Number	Genus Species	Works Required	Timeframe for Completion
Tree 1	*Robinia pseudoacacia 'frisia'*	Uplift over driveway & council footpath	Urgent
Tree 2	*Robinia pseudoacacia 'frisia'*	Uplift over driveway	Urgent
Tree 3-7	*Pyrus capital*	Uplift over council footpath	Urgent
Tree 28	*Pyrus calleryana bradford*	Uplift tree & clear of shade sail	Urgent
Tree 29	*Pyrus calleryana bradford*	Clear of shade sail	Urgent
Tree 30	*Pyrus calleryana bradford*	Uplift tree	Urgent
Tree 31	*Pyrus calleryana bradford*	Uplift tree	Urgent
Tree 32	*Acacia mearnsii*	Remove deadwood greater than 25mm	Urgent
Tree 33	*Acacia mearnsii*	Remove deadwood greater than 25mm.	Urgent

6.4 High Works Required

2 Trees require High Should be completed within the timeframe specified of 12-24 months.

Tree Number	Genus Species	Works Required	Timeframe for Completion
Tree 39	*Robinia pseudoacacia frisia*	Clear foliage around shade sail	High
Tree 40	*Robinia pseudoacacia frisia*	Clear foliage around shade sail	High

6.7 Annual Inspections

1 Trees require Annual inspection completed every 12 months.

Tree Number	Genus Species	Works Required	Timeframe for Completion
Tree 33	*Acacia mearnsii*	Reinspect decay every 12 months	Annual

7 Site Map

Holy Spirit Catholic Primary School, 83 Minerva Road Manifold Heights.

8.1 Tree 1 *Robinia pseudoacacia frisia*

Common Name	Golden Robinia
Health/Condition	Good
Structure	Fair
Height (m)	6 Meters
Width	6 Meters
Age	Semi-mature
Hazard	Medium
ULE	Medium
Retention	Moderate
Risk Rating	Low Risk
Priority	Urgent

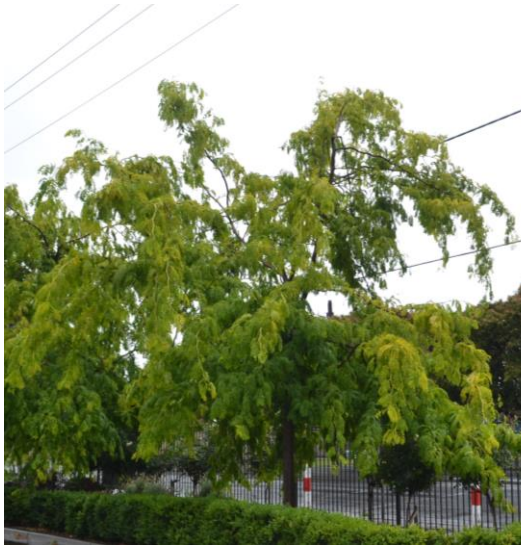


FIGURE 1, UPLIFT OVER DRIVEWAY

FIGURE 1, UPLIFT OVER FOOTPATH

Observations

Semi-mature tree located at front of school along Minerva Road. Low hanging foliage over school driveway & council footpath (refer figure 1 & 2).Tree is of good health & fair structure at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	10	Consequences	8	**Total**	160	Low Risk

Recommendations

- Uplift over driveway & council footpath – Urgent.

8.2 Tree 2 *Robinia pseudoacacia frisia*

Common Name	Golden Robinia
Health/Condition	Good
Structure	Fair
Height (m)	7 Meters
Width	6 Meters
Age	Semi-mature
Hazard	Medium
ULE	Medium
Retention	Moderate
Risk Rating	Low Risk
Priority	Urgent

FIGURE 1, UPLIFT OVER DRIVEWAY

Observations

Semi-mature tree located at front of school along Minerva Road. Low hanging foliage over school driveway (refer figure 1).Tree is of good health & fair structure at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	10	Consequences	10	**Total**	200	Low Risk

Recommendations

- Uplift over driveway– Urgent.

8.3 Tree 3-7 *Pyrus capital* Plantation 1

Common Name	Ornamental Pear
Health/Condition	Good
Structure	Fair
Height (m)	5 Meters
Width	3 Meters
Age	Semi-mature
Hazard	Medium
ULE	Medium
Retention	Low
Risk Rating	Low Risk
Priority	N/A

FIGURE 1, FOLIAGE OVER FOOTPATH

Observations

Semi-mature tree located at front of school along Minerva Road. Low hanging foliage over council footpath (refer figure 1).Tree is of good health & fair structure at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	8	Consequences	8	**Total**	128	Low Risk

Recommendations

- Uplift over council footpath – Urgent.

8.4 Tree 8 *Robinia pseudoacacia umbracauilifera*

Common Name	Mop Top
Health/Condition	Good
Structure	Fair
Height (m)	5 Meters
Width	5 Meters
Age	Semi-mature
Hazard	Medium
ULE	Medium
Retention	Moderate
Risk Rating	Low Risk
Priority	High

FIGURE 1, CLEAR OF FENCE

Observations

Semi-mature tree located along fence line of school and houses north side of school. Foliage on metal fence (refer figure). Tree is of good health and fair structure at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	8	Consequences	8	**Total**	128	Low Risk

Recommendations

- Clear foliage of metal fence - High.

8.5 Tree 9 *Robinia pseudoacacia umbracauilifera*

Common Name	Mop Top
Health/Condition	Good
Structure	Fair
Height (m)	5 Meters
Width	4 Meters
Age	Semi-mature
Hazard	Medium
ULE	Medium
Retention	Moderate
Risk Rating	Low Risk
Priority	N/A

Observations

Semi-mature tree located along fence line of school and houses north side of school. Tree is of good health and fair structure with no works required at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	8	Consequences	8	**Total**	128	Low Risk

Recommendations

- No works required at time of inspection.

8.6 Tree 10 *Robinia pseudoacacia umbracauilifera*

Common Name	Mop Top
Health/Condition	Good
Structure	Fair
Height (m)	5 Meters
Width	3 Meters
Age	Semi-mature
Hazard	Medium
ULE	Medium
Retention	Moderate
Risk Rating	Low Risk
Priority	N/A

Observations

Semi-mature tree located along fence line of school and houses north side of school. Tree is of good health and fair structure with no works required at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	8	Consequences	8	**Total**	128	Low Risk

Recommendations

- No works required at time of inspection.

8.7 Tree 11 *Robinia pseudoacacia umbracauilifera*

Common Name	Mop Top
Health/Condition	Good
Structure	Fair
Height (m)	5 Meters
Width	5 Meters
Age	Semi-mature
Hazard	Medium
ULE	Medium
Retention	Moderate
Risk Rating	Low Risk
Priority	N/A

Observations

Semi-mature tree located along fence line of school and houses north side of school. Tree is of good health and fair structure with no works required at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	8	Consequences	8	**Total**	128	Low Risk

Recommendations

- No works required at time of inspection.

8.8 Tree 12 *Robinia pseudoacacia umbracauilifera*

Common Name	Mop Top
Health/Condition	Good
Structure	Fair
Height (m)	5 Meters
Width	4 Meters
Age	Semi-mature
Hazard	Medium
ULE	Medium
Retention	Moderate
Risk Rating	Low Risk
Priority	N/A

Observations

Semi-mature tree located along fence line of school and houses north side of school. Tree is of good health and fair structure with no works required at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	8	Consequences	8	**Total**	128	Low Risk

Recommendations

- No works required at time of inspection.

8.9 Tree 13 *Pittosporum tenuifloium*

Common Name	James Stirling Pittosporum
Health/Condition	Good
Structure	Fair
Height (m)	9 Meters
Width	5 Meters
Age	Semi-mature
Hazard	Medium
ULE	Medium
Retention	Moderate
Risk Rating	Low Risk
Priority	N/A

Observations

Semi-mature tree located along fence line of school and houses north side of school. Tree is of good health and fair structure with no works required at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	8	Consequences	8	**Total**	128	Low Risk

Recommendations

- No works required at time of inspection.

8.10 Tree 14-27 *Pittosporum tenuifloium*

Common Name	James Stirling Pittosporum
Health/Condition	Good
Structure	Fair
Height (m)	7 Meters
Width	6 Meters
Age	Semi-mature
Hazard	Medium
ULE	Long
Retention	Moderate
Risk Rating	Low Risk
Priority	N/A

Observations

Semi-mature trees located along fence line of school and houses north side of school. Trees are in good health and fair structure with no works required at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	8	Consequences	8	**Total**	128	Low Risk

Recommendations

- No works required at time of inspection.

8.11 Tree 28 *Pyrus calleryana bradford*

Common Name	Bradford pear
Health/Condition	Good
Structure	Fair
Height (m)	8 Meters
Width	7 Meters
Age	Semi-mature
Hazard	Medium
ULE	Long
Retention	Moderate
Risk Rating	Low Risk
Priority	Urgent

FIGURE 1, LOW FOLIAGE

FIGURE 2, LOW FOLIAGE

Observations

Semi-mature tree located rear of school at playground. Tree has low hanging foliage (refer figure 1). Foliage on shade sail (refer figure 2). Tree is of good health & fair structure at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	10	Consequences	8	**Total**	160	Low Risk

Recommendations

- Uplift tree & clear of shade sail – Urgent.

8.12 Tree 29 *Pyrus calleryana bradford*

Common Name	Bradford pear
Health/Condition	Good
Structure	Fair
Height (m)	6 Meters
Width	5 Meters
Age	Semi-mature
Hazard	Medium
ULE	Medium
Retention	Moderate
Risk Rating	Low Risk
Priority	Urgent

FIGURE 1, LOW FOLIAGE

Observations

Semi-mature tree located rear of school at playground. Tree has low foliage on shade sail (refer figure 1). Tree is of good health & fair structure at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	10	Consequences	8	**Total**	160	Low Risk

Recommendations

- Clear foliage of shade sail – Urgent.

8.13 Tree 30 *Pyrus calleryana bradford*

Common Name	Bradford Pear
Health/Condition	Good
Structure	Fair
Height (m)	6 Meters
Width	4 Meters
Age	Semi-mature
Hazard	Medium
ULE	Medium
Retention	Moderate
Risk Rating	Low Risk
Priority	Urgent

FIGURE 1, LOW FOLIAGE

Observations

Semi-mature tree located rear of school at playground. Tree has low hanging foliage (refer figure 1). Tree is of good health & fair structure at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	10	Consequences	8	**Total**	160	Low Risk

Recommendations

- Uplift tree – Urgent.

8.14 Tree 31 *Pyrus calleryana bradford*

Common Name	Bradford Pear
Health/Condition	Good
Structure	Fair
Height (m)	6 Meters
Width	6 Meters
Age	Semi-mature
Hazard	Medium
ULE	Medium
Retention	Moderate
Risk Rating	Low Risk
Priority	Urgent

FIGURE 1, LOW FOLIAGE

Observations

Semi-mature tree located rear of school at playground. Tree has low hanging foliage (refer figure 1). Tree is of good health & fair structure at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	10	Consequences	8	**Total**	160	Low Risk

Recommendations

- Uplift tree – Urgent.

8.15 Tree 32 *Acacia mearnsii*

Common Name	Black Wattle
Health/Condition	Good
Structure	Fair
Height (m)	13 Meters
Width	9 Meters
Age	Semi-mature
Hazard	Medium
ULE	Long
Retention	Moderate
Risk Rating	Low Risk
Priority	Urgent

FIGURE 1, DEADWOOD

Observations

Semi-mature tree alongside fence line of school and cemetery. Deadwood throughout tree (refer figure 1). Tree is of good health & fair structure at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	10	Consequences	10	**Total**	200	Low Risk

Recommendations

- Remove deadwood greater than 25mm – Urgent.

8.16 Tree 33 *Acacia mearnsii*

Common Name	Black Wattle
Health/Condition	Fair
Structure	Fair
Height (m)	10 Meters
Width	9 Meters
Age	Semi-mature
Hazard	Medium
ULE	Medium
Retention	Moderate
Risk Rating	Low Risk
Priority	Urgent Annual

FIGURE 1, DEADWOOD

FIGURE 2, DEADWOOD

FIGURE 3, DECAY IN TRUNK

Observations

Semi-mature tree alongside fence line of school and cemetery. Deadwood throughout tree (refer figure 1 & 2). Decay pocket at base of trunk (refer figure 3). Tree is of good health & fair structure at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	8	Consequences	6	**Total**	128	Low Risk

Recommendations

- Remove deadwood greater than 25mm – Urgent.
- Reinspect decay every 12 months – Annual.

.

8.17 Tree 34 *Acacia mearnsii*

Common Name	Black Wattle
Health/Condition	Good
Structure	Fair
Height (m)	5 Meters
Width	5 Meters
Age	Semi -mature
Hazard	Medium
ULE	Medium
Retention	Moderate
Risk Rating	Low Risk
Priority	N/A

Observations

Semi-mature tree alongside fence line of school and cemetery. Tree is of good health & fair structure with no works required at time of inspection**.**

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	8	Consequences	6	**Total**	128	Low Risk

Recommendations

- No works required at time of inspection.

8.18 Tree 35 *Acacia mearnsii*

Common Name	Black Wattle
Health/Condition	Good
Structure	Fair
Height (m)	13 Meters
Width	9 Meters
Age	Mature
Hazard	Medium
ULE	Long
Retention	Moderate
Risk Rating	Low Risk
Priority	N/A

Observations

Mature tree alongside fence line of school and cemetery. Tree is of good health & fair structure with no works required at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	10	Consequences	10	**Total**	200	Low Risk

Recommendations

- No works required at time of inspection.

8.19 Tree 36 *Acacia mearnsii*

Common Name	Black Wattle
Health/Condition	Good
Structure	Poor
Height (m)	4 Meters
Width	5 Meters
Age	Semi-mature
Hazard	Medium
ULE	Long
Retention	Moderate
Risk Rating	Low Risk
Priority	N/A

Observations

Semi-mature tree alongside fence line of school and cemetery. Tree is of good health & fair structure with no works required at time of inspection**.**

Risk Rating Consequences

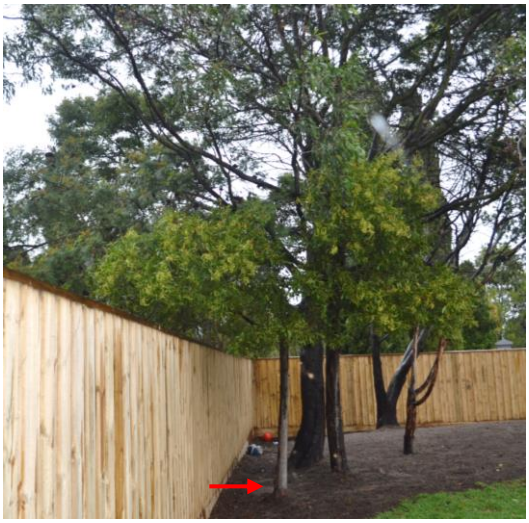
Likelihood of Failure	4	Likelihood of impact	8	Consequences	6	**Total**	128	Low Risk

Recommendations

- No works required at time of inspection.

8.20 Tree 37 *Acacia melanoxylon*

Common Name	Blackwood
Health/Condition	Good
Structure	Fair
Height (m)	4 Meters
Width	3 Meters
Age	Semi-mature
Hazard	Medium
ULE	Long
Retention	Moderate
Risk Rating	Low Risk
Priority	N/A



Observations

Semi-mature tree on Marshalltown Rd behind basketball courts. Tree is of good health & fair structure with no works required at time of inspection**.**

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	10	Consequences	10	**Total**	200	Low Risk

Recommendations

- No works required at time of inspection.

8.21 Tree 38 *Robinia pseudoacacia frisia*

Common Name	Golden Robinia
Health/Condition	Good
Structure	Good
Height (m)	4 Meters
Width	2 Meters
Age	Semi-mature
Hazard	Medium
ULE	Long
Retention	Moderate
Risk Rating	Low Risk
Priority	N/A

Observations

Semi-mature tree between buildings at decking area. Tree is of good health & structure with no works required at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	8	Consequences	6	**Total**	128	Low Risk

Recommendations

- No works required at time of inspection.

8.22 Tree 39 *Robinia pseudoacacia frisia*

Common Name	Golden Robinia
Health/Condition	Good
Structure	Good
Height (m)	4 Meters
Width	3 Meters
Age	Semi-mature
Hazard	Medium
ULE	Long
Retention	Moderate
Risk Rating	Low Risk
Priority	High

FIGURE 1, FOLIAGE ON SHADE SAIL

Observations

Semi-mature tree between buildings at decking area. Foliage on shade sail (refer figure 1). Tree is of good health & structure at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	8	Consequences	6	**Total**	128	Low Risk

Recommendations

- Clear foliage around shade sail – High.

8.23 Tree 40 *Robinia pseudoacacia frisia*

Common Name	Golden Robinia
Health/Condition	Good
Structure	Good
Height (m)	5 Meters
Width	3 Meters
Age	Semi-mature
Hazard	Medium
ULE	Long
Retention	Moderate
Risk Rating	Low Risk
Priority	High

FIGURE 1, FOLIAGE ON SHADE SAIL

Observations

Semi-mature tree between buildings at decking area. Foliage on shade sail (refer figure 1). Tree is of good health & structure at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	8	Consequences	6	**Total**	128	Low Risk

Recommendations

- Clear foliage around shade sail – High.

8.24 Tree 41 *Robinia pseudoacacia frisia*

Common Name	Golden Robinia
Health/Condition	Good
Structure	Good
Height (m)	5 Meters
Width	4 Meters
Age	Semi-mature
Hazard	Medium
ULE	Long
Retention	Moderate
Risk Rating	Low Risk
Priority	N/A

Observations

Semi-mature tree between buildings at decking area. Tree is of good health & structure with no works required at time of inspection.

Risk Rating Consequences

Likelihood of Failure	4	Likelihood of impact	8	Consequences	6	**Total**	128	Low Risk

Recommendations

- No works required at time of inspection.

9 Terms & Limitations

This report must not be altered in any way. It has been written as a complete report and is intended to be used as a complete report. Any modifications or changes to this report not undertaken by the consulting Arborist's will render this report invalid in its entirety.
In no way is this report bias or weighted. The content of this report is written honestly in the opinion of the consulting Arborist representing Slicks Tree Consulting Services this report is developed around the information supplied by the client's brief.
All details, information and advice contained in this report have been researched and referenced. Where no references have been included, experience and observations of the Cert 5 consulting Arborist's representing Slicks Tree Consulting Services.
No pictures diagrams or graphs or other reference material in this report are claimed to be to scale. All measurements and values are made to the best of the Arborist's ability at the time of inspection and the time this report was written.

10 Appendix: Descriptors of Terms

10.1 Tree Name

This will provide the botanical name and a common name.

10.2 Tree Form

Tree is showing **typical** crown shape and habit, or tree is **not typical** crown shape or habit, this is relating to the crown shape it should be for the species.

10.3 Crown

Portion of the tree consisting of branches and leaves and part of the trunk from which branches arise**.**

10.4 Health/Condition

Excellent

Canopy full with even foliage density throughout the tree. Leaves are entire and are of excellent shape and colour with no visible pathogens and excellent growth.

Good

Canopy full with minor variations in foliage density throughout the canopy, Leaves are entire and are of good size and colour with minimal or no visible pathogens and good growth.

Fair

Canopy with moderate variations in foliage density throughout, Leaves are not entire and are significantly reduced with moderate pathogen damage. Visible amounts of deadwood Branches have dieback and tree may contain epicormic growth.

Poor

Canopy density significantly reduced throughout. Leaves are not entire and are significantly reduced and discoloured with significant signs of pathogens damage. Tree has epicormic growth and noticeable dieback may be extensive throughout canopy.

Dead

No live plant material at all visible throughout the canopy and bark may be delaminating from the trunk and or the branches.

10.5 Age

Category	Description
Young	Juvenile or newly planted approximately 1-7 years.
Semi Mature	Tree actively growing.
Mature	Tree has reached expected size in situation.
Senescent	Tree is over mature and has started to decline.

10.6 Structure

Category	Description
Good	The tree has a well-defined and balanced crown. Branch unions appear to be strong with no defects evident in the trunk or the branches. Branch unions appear to be sound, with no significant defects evident in the trunk or the branches. Major limbs are well defined. The tree is unlikely to suffer trunk or branch failure under normal conditions. The tree is considered a good example of the species with a well-developed form.
Fair	The tree has some minor problems in the structure of the crown. The crown may be slightly out of balance and some branch unions may exhibit minor structural faults or have the potential to create faults. If the tree is single trunked, this may be on a slight lean or be exhibiting minor defects. These defects are not likely to result in catastrophic trunk or branch failure although some branch failure may occur under normal conditions.
Poor	The tree has significant problems in the structure of the scaffold limbs or trunk. It may be lop-sided or have few branches on one side or have large gaps in the crown. Large branches may be rubbing or crossing over. Branch unions may be poor, and faults at the point of attachment or along the branches may be evident. The tree may have a substantial lean and may have suffered root damage. The tree may have some degree of basal or trunk damage.
Hazardous	Tree is an immediate hazard with potential to fail this should be rectified as soon as possible.

10.7 Useful Life Expectancy – ULE

LONG ULE: Trees that appears to be retainable with an acceptable level of risk for more. than 40 years.

- Structurally sound trees located in positions that can accommodate future growth.
- Storm damaged or defective trees that could be made suitable for retention in the long term by remedial tree surgery.
- Trees of special significance for historical, commemorative or rarity reasons that would warrant extraordinary efforts to secure their long-term retention.

MEDIUM ULE: Trees that appear to be retainable with an acceptable level of risk for 15 to 40 years.

- Trees that may only live between 15 and 40 years.
- Trees that may live for more than 40 years but would be removed to allow the safe development of more suitable individuals.
- Trees that may live for more than 40 years but would be removed during normal management for safety and nuisance reasons.
- Storm damage or defective trees that can be made suitable for retention in the medium term by remedial work.

SHORT ULE: Trees that appear to be retainable with an acceptable level of risk for 5 to 15 years.

- Trees that may live for 5 to 15 years.
- Trees that may live for more than 15 years but would be removed to allow the safe development of more suitable individuals.
- Trees that may live for more than 15 years but would be removed during normal management for safety and nuisance reasons.
- Storm damaged or defective trees that require substantial remedial work to make safe and are only suitable for retention in the short term.

REMOVE; Trees with a high level of risk that would need removal within the next 5 years.

- Dead trees.
- Dying or suppressed and declining trees through disease or inhospitable conditions.
- Dangerous trees through instability or recent loss of adjacent trees.
- Dangerous trees through structural defects including cavities, decay, included bark, wounds or poor form.

10.8 Retention Value

Retention Value is rated into three levels: **LOW, MEDIUM,** and **HIGH**.

LOW; Trees that offer little in terms of contributing to the future landscape for the reasons of poor health or structural condition, species suitability in relation to unacceptable growth habit, noxious, poisonous or weed species or ULE, or a combination of these characteristics should be considered for removal.

MODERATE; Trees with some beneficial attributes that may benefit the site in relation to botanical, horticultural, historical, or local significance but may be limited to some degree by their future growth potential at the site by maintenance requirements now or in the future. These trees are to be retained.

HIGH: Trees with the potential to positively contribute to the site due to their botanical, horticultural, historical, or local significance in combination with good characteristics of structure, health, and future development.

10.9 Hazard

Hazard is rated into three levels: **LOW, MEDIUM,** and **HIGH**.

LOW; Tree appears to be structurally sound, is healthy with no signs of pests or disease, has good vigour and is clear of any hazards.

MEDIUM; Tree displays signs of structural problems, evidence of pests or disease, signs of low vigour, deadwood, decay, may be growing into an area that could create a hazard.

HIGH: Tree is an immediate hazard with the potential to fail; this should be rectified as soon as possible.

10.10 Priority work timeframes for completion of works

The following timeframes relate to priority ratings for which recommended works should be carried out:

Immediately Should be completed immediately, these trees represent an immediate hazard

Urgent Should be undertaken immediately, these trees represent an immediate hazard.

High Should be undertaken within 6 months.

Moderate Should be undertaken within 12-24 months.

Low Basic recommended works which should be undertaken within 24-36 months.

N/A No works required at time of inspection.

10.11 Tree Risk Rating/Guidelines

Tree management is a matter of limiting the risk of harm from tree failure while maintaining the benefits conferred by trees. This tree risk assessment tool provides the user with a method of quantifying the probability of harm.

The formula used to quantify the risk score of a tree is:

(Likelihood of Failure X Likelihood of Impact) divided by 2 & multiplied by the Consequences.

The final quantified risk score allows us to determine the severity of the risk posed by the tree and enables us to make recommendations to mitigate the risk.

Mitigation of risk should not always involve only the tree; simple options such as the relocation or realignment of the target can be a workable, cost-effective outcome (e.g., Shifting a footpath). Alternative options can be clearly documented in a management plan.

The re-inspection date plays a critical role in determining the Likelihood of Failure and it is critical that the future inspection regime is determined prior to or at the completion of the tree inspection. Full inspection cycles are generally categorised as 1, 2, 3, or 5 years.

1 -125 points = Very Low Risk Tree. For example, the tree will have no failures prior to the next inspection period and in most cases no remedial arboriculture works will be required.

125 – 250 points = Low Risk Tree. For example, remedial arboriculture works may be required to mitigate the risk of this tree. A management plan defining the outcomes of the assessment may be required. Engineering solutions may also be considered to mitigate the risk.

250 – 375 points = Medium Risk Tree. For example, remedial arboriculture works, or a management plan will be required to manage the tree. Engineering solutions may need to be implemented to mitigate the risk. Total removal may need to be considered. Risk mitigation works should be completed as soon as practicable.

375 – 500 points = High Risk Tree. For example, extensive remedial arboriculture works, and an extensive management plan are required to manage the tree (if retained). Engineering solutions may need to be implemented to mitigate the risk. Total removal of the tree may be the only option. Short term risk mitigation works are required immediately for high-risk trees e.g., barricading.

Likelihood of Failure

The Likelihood of Failure (e.g., The branch or tree failing) is assessed up to the next designated inspection date. If the tree is on an annual inspection regime the assessor must only assess that part of the tree he believes could, or will, fail within the inspection period. If there are other defects in the tree that could fail outside of the inspection period their Likelihood of Failure should not be considered, as they have not been identified as the 'immediate risk'. Such defects should be documented in some form, such as in a comment section or a more detailed written report.

Likelihood of Impact

The Likelihood of Impact is assessed by estimating the period the target is occupied by a human. A tree could have several different Likelihood of Impact ratings under the tree's own canopy; for example, the tree may overhang a footpath, as well as an area that cannot be accessed by humans or vehicles. If the defect is located above a footpath that is used for 4-8 hours per day the assessor would categorise the Likelihood of Impact as 'Frequent Use', whereas, if the defect is located above an area that is not used (e.g., grass or garden bed) the Likelihood of Impact would be assessed as 'Low Use'.

Risk Rating Consequences

When assessing the Consequences, the section of tree that must be assessed (e.g., branch, trunk) is that which the arborist believes could fail within the defined inspection time frame and hit the designated Likelihood of Impact (target). The specific section being assessed for Likelihood of Failure could be any part of the tree, from a small piece of dead wood of <25 mm through to the whole tree. The rating for Consequences is calculated by estimating the extent, severity and value of damage caused by a tree failure resulting in an impact.

Likelihood of Failure		
10	Almost certain	Obvious fault that indicates a failure is almost certain under normal. conditions within the re-inspection period (better than 1:2 - >50% chance)
8	Likely	Obvious fault that indicates a failure is highly likely under normal. conditions within re-inspection period (better than 1:4 - >25% chance)
6	Moderate	Obvious fault that indicates failure is possible under normal conditions. within re-inspection period (better than 1:10 – >10% chance)
4	Unlikely	Obvious fault that indicates failure is unlikely to occur under normal. conditions within re-inspection period (better than 1:50 – >2% chance)
2	Rare	Obvious fault that indicates failure is very unlikely to occur under normal. conditions within re-inspection period (better than 1:100 –< 2% chance)
1	Not expected	No observable fault that would suggest failure is likely to occur within reinspection period

Likelihood of Impact		
10	Constant	Use 1:3 An area that is used or occupied more than 8 hours per day by human beings or parked cars. An area that contains a permanent structure.
8	Frequent	Use 1:6.25 An area that is used or occupied between 4 & 8 hours per day by human beings or parked cars
6	Occasional	Use 1:12.5 An area that is used or occupied between 2 & 4 hours per day by human beings or parked cars.
4	Minimal	Use 1:25 An area used or occupied between 1 & 2 hours per day by human beings or parked cars
1	Low	Use <1:25 An area used or occupied for less than 1 hour per day by human beings or parked cars

Consequences		
10	Catastrophic	1. Human impacts - paraplegia, quadriplegia, brain damage or death 2. Extensive property damage - will require the building to be rebuilt. Property damage likely to be more than $100,000
8	Major	1. Human impacts - serious and / or extensive injuries requiring medical treatment with hospital admission 2. Significant property damage / partial loss - will require substantial works to repair the building, vehicle etc Damage likely to be greater than $20,000 and less than $100,000
6	Moderate	1. Human impacts - moderate injuries requiring medical treatment but without hospital admission 2. Moderate property damage requiring repair work; damage to building, car etc medium. Damage likely to be more than $5000 and less than $20,000
4	Minor	1. Human impacts - minor injuries immediately treated on-site with First Aid treatment 2. Minor property damage – light damage to building or property. Damage likely to be more than $1000 and less than $5000
1	Insignificant	1. Human impact - unlikely to cause injuries 2. Insignificant damage likely to the building or property. Damage will be less than $1000 e.g., broken tiles or windows

Additional Assessment - The assessor should complete a second risk assessment following the completion of remedial works or engineering solutions to ensure the risks have been reduced to an acceptable level

10. 12 Decay
An area of wood that is undergoing decomposition, or decomposition of organic tissues by fungi of bacteria.

10. 13 VTA (Visual Tree Assessment)
The standard approach to tree risk assessment consisting of the diagnosis of structural defects and the evaluation of their significance from visible signs and the application of biomechanical criteria. Simple equipment such as a sounding mallet, probe and binoculars are commonly used.

10.14 Deadwood
Dead and decomposing wood including dead trees (whether standing, snapped, or fallen), branches of any size, stumps, and roots.

10.15 Bark
The outermost layer of a woody stem or root, adapted to protect the underlying tissues. The term may refer to the non-living (outer) bark or to all the tissues that separate at the vascular cambium.

10.16 Cambium
Layers of meristematic cells on the outer side of the phloem that give rise to the bark.

10.17 Vascular Cambium System
The unspecialized tissue one cell thick separating the xylem from the phloem, either within discrete vascular bundles or in the form of a continuous cylinder following secondary thickening. The cambium divides indefinitely to give new xylem and phloem.

10.18 Rams Horn
Wound wood that becomes curled inward and can wrap around itself as it crosses a void such as a cavity and may succumb to cracking with those wounds susceptible to further infestation by decay pathogens

10.19 Wound Wood
Aged callus wood around the margins of a wound that becomes differentiated to form CODIT wall 4 producing new lignified wood. This wood may grow to surround a wound and may eventually develop to enclose the wound by occlusion.

10.20 Codominant Stem
Codominant stems are two or more stems which are competing in size and competing for the sun. They do not have branch collars but may form a bark ridge. In many cases this leads to included bark (The Bark Ridge turns in and then cracks can form).

10.21 Mechanical Damage
When equipment or machinery, such as lawn mowers and weed trimmers, bang into a tree or shrub it can crush the cambium layer or tear off bark and break branches. The site of injury is usually the root flare: the area where the tree meets the turf and gets in the path of the mower or trimmer.

10.22 Kino

Kino is extractive polyphenols (tannins) formed in the veins in cambium layers as defence to wounding. This is visible as an exudate after the veins have been ruptured or are injured. Kino bleeding is a natural response of certain trees. When a tree is injured, it produces a type of sap called "kino" or "balsam" that flows out of the wound and hardens on the surface of the bark. Kino bleeding is usually caused by insect feeding, stem-boring larvae, or human-caused injuries like pruning or accidental cuts.

The kino sap is a protective response of the tree's immune system that helps to seal off the wound and prevent infection by sealing off the wound and protecting it from further damage. However, excessive bleeding can weaken the tree's defences against pests and diseases and may indicate a more serious underlying issue such as decay, canker, or other diseases.

While kino bleeding is a natural process and not necessarily harmful to the tree, excessive bleeding can be a sign of a serious issue that requires prompt attention. Trees that exhibit excessive bleeding should be inspected by a professional arborist to determine the cause and to recommend the appropriate course of action.

10.23 Ganoderma Fungi

These fungi degrade the lignin (the strengthening material) components of the wood and lead to reduced wood strength. The decayed areas within the tree may extend 2-3 meters above or below the fruiting bodies. Unless confined by compartmentalization, decay fungi can invade heartwood for considerable vertical distances.

10.24 Callus Wood

Callus wood in trees refers to the new wood that grows over a damaged area of the tree trunk or branches in order to protect it from further injury or infection. It is a layer of woody tissue that forms beneath the bark that covers the damaged area. This tissue is made up of undifferentiated cells that can divide and differentiate into various cell types, depending on the needs of the tree. Callus wood is often a result of a wound caused by pruning, fire, insect damage, or disease. Over time, the callus wood forms a bump on the surface of the tree trunk or branch, which serves as a protective barrier against further damage.

10.25 Sooty Mould

Sooty moulds are fungi which cover plant leaves, stems and twigs in a black sticky substance. In almost all cases, the sooty mould is secondary to an infestation of insects that secrete honeydew. These insects include aphids, scale, mealybugs, and white flies. Treating the insects will remove the source of the honeydew and dry up the sooty mould, which will eventually fall or wash off the foliage. The mould itself does not feed on the plant, however as it covers the leaf surface, it is blocking light and reducing photosynthesis, essential for plant growth.

10.26 Codit Wall 4

CODIT, when a tree is wounded cells undergo changes to form "walls" around the wound, slowing or preventing the spread of disease and decay to the rest of the tree.

- **Wall 1.** The first wall is formed by plugging up normally conductive vascular tissue above and below the wound. This tissue runs up and down the length of the stem, so plugging it slows the vertical spread of decay. Tissues are plugged in various ways, such as with tylosis, polyphenolic deposits, anti-fungal substances and (in conifers) by the closure of the bordered pits linking vessel cells. This wall is the weakest.
- **Wall 2.** The second wall is formed by the thick-walled, lignin-rich cells of the latewood growth ring interior and exterior to the wound, thus slowing the radial spread of decay. This wall is the second weakest and is continuous except where intersected by ray cells (see next section).
- **Wall 3.** The third wall is formed by ray cells, which are groups of radiating cells oriented perpendicularly to the stem axis, dividing the stem into segments not entirely unlike the slices of a pie. These groups of cells are not continuous and vary in length, height and thickness, forming a maze-like barrier to tangential spread of decay. After wounding, some ray cells are also altered chemically, becoming toxic to some microorganisms. This is the strongest wall at the time of wounding, prior to the growth of the fourth wall.
- **Wall 4.** The fourth wall, known as the **barrier zone**, is created by new growth of specialised woody tissue on the exterior of the tree, isolating tissue present at the time of infection from subsequent growth. This is the strongest wall, and often the only one which can completely halt the spread of infection by closing the wound with new wood. When only the fourth wall remains intact, the result is something most people have seen walking through the woods or in a park: a living tree with a completely rotted-out interior. In such cases, all the tissue present at the time of injury has become infected, but new healthy tissue has been allowed to continue to grow outside of the fourth wall.

11 Referencing

11.1 Books

Draper D & Richards P	2009	Dictionary for Managing Trees in Urban Environments	1st Edition	CSIRO publishing	Collingwood, Vic 3066
Mattheck C & Breloer H		The Body Language of Trees	1st Edition	TSO (The Stationery Office)	Norwich NR3 I GN
Hayes E	2001	Evaluating Tree Defects	2nd Edition	Safetrees LLC	Rochester MN 55901
Matheny P & Clark R	1994	Evaluation of Hazard Trees In Urban Areas	2nd Edition	International Society of Arboriculture	Champaign Illinois, USA
Jones D & Elliot R	1986	Pest, Diseases & Ailments of Australian Plants	4th E Edition	Thomas C Lothian Pty Ltd	Port Melbourne, Vic 3207

11.2 Online

Google maps www.google.com

A-Z of Tree Terms http://www.treeterms.co.uk/definitions/visual-tree-assessment