TREESCAN

URBAN FOREST MANAGEMENT

Tree Report

Glenmore Park Town Centre
Glenmore Parkway Glenmore Park

For Village Fair Glenmore Park Pty Ltd

May 2010

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Introduction
It is proposed to extend the existing shopping centre at Glenmore Parkway Glenmore Park onto the currently vacant land to the north of the centre. Several trees are located within the footprint and would be affected by the proposed construction. This report assesses the trees on the site and comments on the effects of the proposal.

The site
The site is bounded by the long curve of Glenmore Parkway to the west, north and east, with the existing shopping centre to the south. The land slopes gently down from west to east. The land is within the local government area of Penrith City Council.

Soils are loams and clay loams of the Blacktown soil landscape derived from the underlying Wianamatta Shale parent rock (Bannerman & Hazelton 1990). Site vegetation consists of scattered and grouped canopy trees, chiefly surrounded by bare, compacted and eroded soil but with an intermittent understorey of rough grass and weeds. Soil levels over part of the site appear to have been modified by regrading. The site is evidently used for overflow parking and there are extensive vehicle tracks.

Present state of the trees
The site trees are assessed in Table 1 below; tree numbers are noted on the plan attached. Trees were inspected from the ground only and no aerial or subterranean inspections were carried out. The trees are of two indigenous species and are remnants or regrowth of the former Cumberland Plain Woodland community of the site. They are in fair to good health and condition despite the adverse growth conditions in the root zones resulting from soil compaction and regrading.

Several of the trees have structural defects where vertical and parallel stems have formed compression forks; these are likely to be weaker than a well-optimised fork, but these defects are unlikely to lead to failure in the foreseeable future.

A number of small specimens of *Ulmus parvifolia* (Chinese Elm) have been planted around the perimeters of the site as street trees. These are in only fair to poor health and condition as the result of drought, poor soil conditions and injury as the result of vandalism.

Discussion

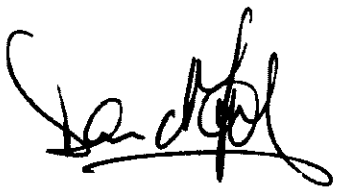
The trees are proposed to be removed to accommodate the new building and its associated driveways and parking bays, which would extend across the entire site. They are in fair to good health and condition albeit with some defects including weak junctions and trunk wounds. The trees are prominent in the landscape and may have ecological value as components of the Cumberland Plain Woodland which was the former vegetation community of the site. The matter of possible ecological value would need to be determined by a suitably qualified ecologist.

However the land is zoned for commercial uses and the removal of the trees would be required as part of any development of the site.

Several street trees would need to be removed to allow access to the new centre, but these could be rapidly replaced by new plantings.

Conclusions

Trees proposed for removal are generally in good to fair health and condition and could be made suitable for medium-term retention by remediation of defects and improvements to soil conditions. They have landscape value and possible ecological value, but would need to be removed under any proposed development of the site. Street trees which would need to be removed could be replaced by new plantings.



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Consulting Arborist

References

Bannerman, S.M. & Hazelton, P.A. 1990, *Soil Landscapes of the Penrith 1:100 000 Map Sheet*, Soil Conservation Service of NSW, Sydney.

Barrell, J. 1993, 'Preplanning Tree Surveys: Safe Useful Life Expectancy (SULE) is the Natural Progression', *Arboricultural Journal* 17:1, February 1993, pp. 33-46.

Barrell, J. 1995, 'Pre-development Tree Assessments', in *Trees & Building Sites, Proceedings of an International Conference Held in the Interest of Developing a Scientific Basis for Managing Trees in Proximity to Buildings*, International Society of Arboriculture, Illinois, USA, pp. 132-142.

Table 1: Site trees

Tree no	Species	Approx trunk dbh mm	Approx height m	Approx crown spread m	Health	Condition	SULE	Comment	Effect of proposed development
1	*Eucalyptus tereticornis* (Forest Red Gum)	400	15	8	Fair	Fair	2D	Sparse crown Codominant crown Trunk wound	Removal
2	*Eucalyptus tereticornis* (Forest Red Gum)	400	15	10	Fair	Fair	2D	Sparse crown Codominant crown Branch dieback in lower crown Trunk wound Soil compaction in root zone	Removal
3	*Eucalyptus tereticornis* (Forest Red Gum)	400 250	12	10	Good	Fair	2D	Codominant crown Soil levels raised	Removal
4	*Eucalyptus tereticornis* (Forest Red Gum)	400 250 x 2	15	12	Good	Fair	2D	Codominant crown x 3 stems	Removal
5	*Eucalyptus tereticornis* (Forest Red Gum)	300 x 2	15	8	Good	Fair	2D	Codominant crown with weak junction at base	Removal
6	*Eucalyptus tereticornis* (Forest Red Gum)	400	16	12	Good	Fair	2D	Codominant crown with weak junction at 5m height	Removal
7	*Eucalyptus tereticornis* (Forest Red Gum)	400	12	8	Good	Fair	3D	Codominant crown with weak junction at 1m height	Removal
8	*Eucalyptus moluccana* (Grey Box)	300	12	6	Good	Fair	3D	Trunk wound with decay Codominant crown with weak junction at 4m height	Removal
9	*Eucalyptus moluccana* (Grey Box)	250	12	6	Fair	Fair	2D	Sparse crown Weak junction at 5m height	Removal

Tree no	Species	Approx trunk dbh mm	Approx height m	Approx crown spread m	Health	Condition	SULE	Comment	Effect of proposed development
10	*Eucalyptus moluccana* (Grey Box)	250 150	12	8	Fair	Fair	3D	Trunk wound near base	Removal
11	*Eucalyptus moluccana* (Grey Box)	300 250 x 2 bf	12	8	Fair	Fair	2A	Sparse crown Codominant crown	Removal
12	*Eucalyptus moluccana* (Grey Box)	400 300 bf	12	8	Good	Fair	3D	Weak junction near base	Removal
13	*Eucalyptus moluccana* (Grey Box)	250	10	6	Fair	Fair	2D	Codominant crown with weak junction at 3m height	Removal
14	*Eucalyptus moluccana* (Grey Box)	300 250	12	12	Good	Fair	2D	Weak junction at 1m height	Removal
15	*Eucalyptus tereticornis* (Forest Red Gum)	200	10	5	Good	Poor	3D	Suppressed	Removal

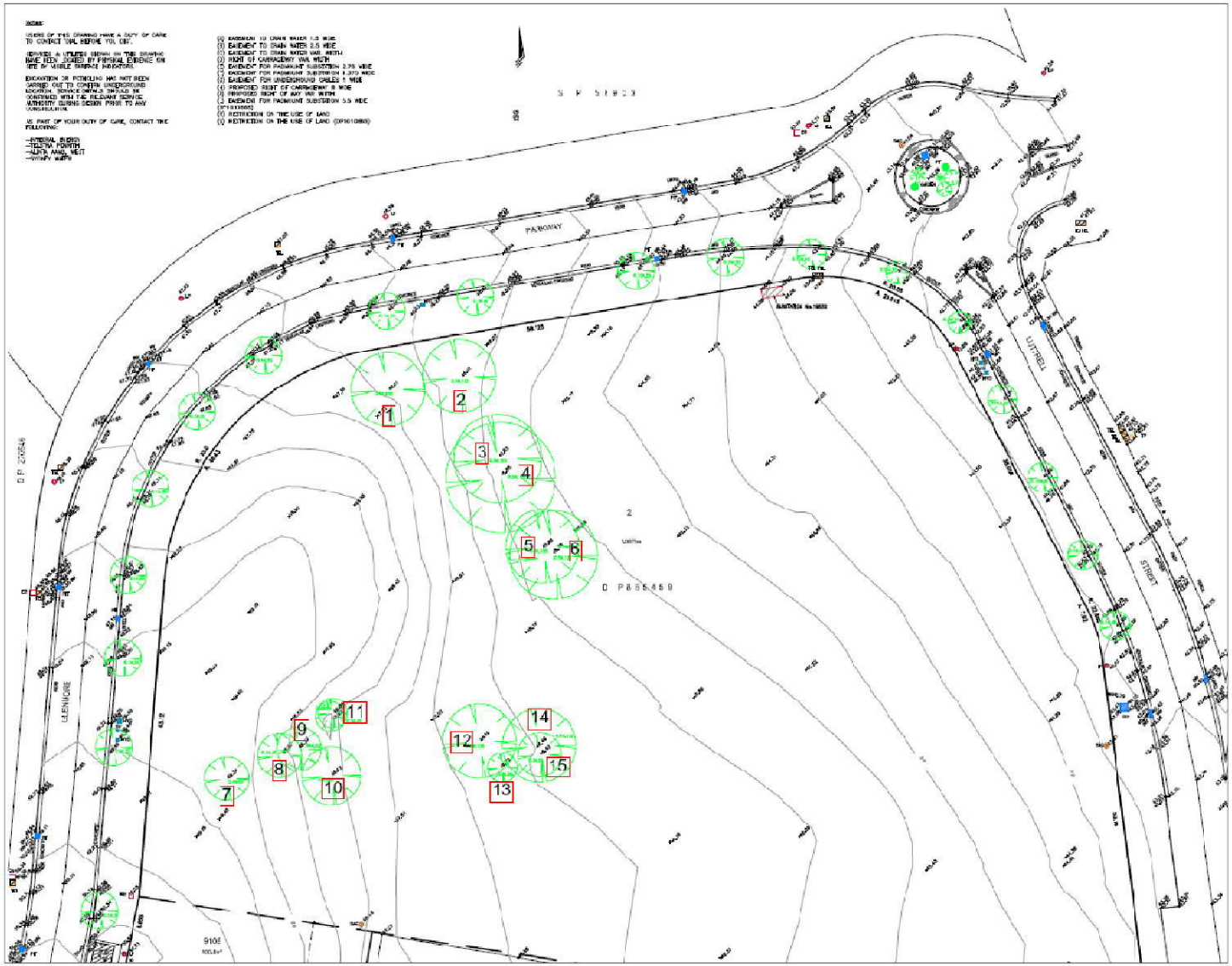
Note: bf=below fork

Table 2: SULE categories (after Barrell 1995)

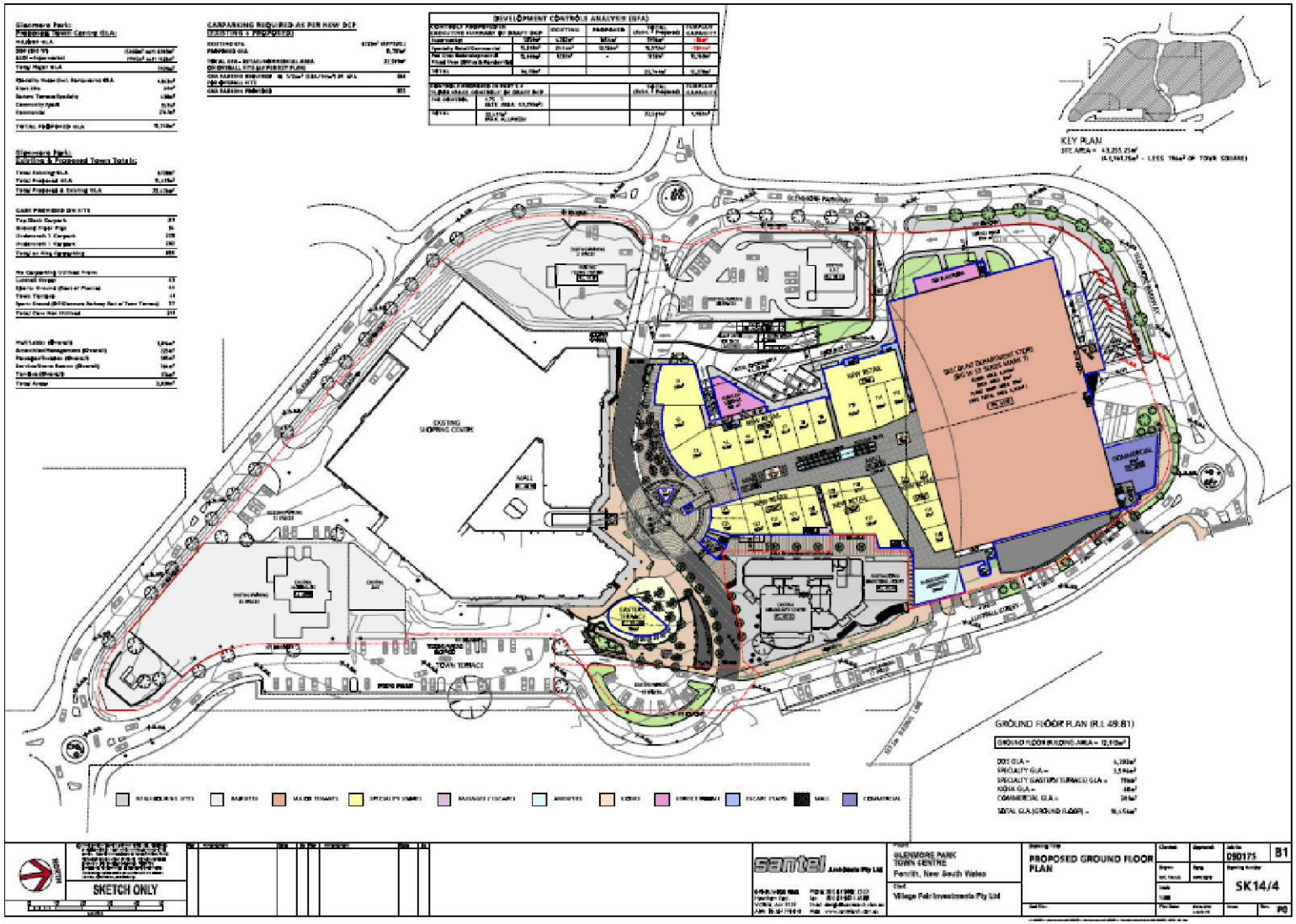
	1	2	3	4
	Long: Appeared to be retainable at the time of assessment for over 40 years with an acceptable degree of risk, assuming reasonable maintenance.	Medium: appeared to be retainable at the time of assessment for 15 to 40 years with an acceptable degree of risk, assuming reasonable maintenance.	Short: appeared to be retainable at the time of assessment for 5 to 15 years with an acceptable degree of risk, assuming reasonable maintenance.	Transient: trees which should be removed within the next 5 years.
A	Structurally sound trees located in positions that can accommodate future growth.	Trees which may only live between 15 and 40 years.	Trees which may only live between 5 and 15 years.	Dead, dying, suppressed or declining trees.
B	Trees which could be made suitable for long-term retention by remedial care.	Trees which may live for more than 40 years but would be removed for safety or nuisance reasons.	Trees which may live for more than 15 years but would be removed for safety or nuisance reasons.	Dangerous trees through damage, structural defect, instability or recent loss of adjacent trees. Urgent removal may be required if near assets.
C	Trees of special significance which would warrant extraordinary efforts to secure their long-term retention.	Trees which may live for more than 40 years but would be removed to prevent interference with more suitable individuals or to provide space for new planting.	Trees which may live for more than 15 years but would be removed to prevent interference with more suitable individuals or to provide space for new planting.	Trees which may live for more than 5 years but should be removed to prevent interference with more suitable individuals or to provide space for new planting.
D		Trees which could be made suitable for retention in the medium term by remedial care.	Trees which require substantial remediation and are only suitable for retention in the short term.	Trees which are damaging or may cause damage to existing structures within the next 5 years.

Tree location plan

Nts



Proposed ground floor plan



Plates

Plate 1: Trees 1 and 2 viewed from the west

Plate 2: Trees 3, 4, 5 and 6 viewed from the west

Plate 3: Trees 7, 8, 9, 10 and 11 (right to left) viewed from the north

Plate 4: Trees 12, 13, 14 and 15 viewed from the west

Terminology used in the report

Age classes (I) *Immature* refers to a well-established but juvenile tree. (S) *Semimature* refers to a tree at growth stages between immaturity and full size. (M) *Mature* refers to a full sized tree with some capacity for further growth. (O) *Overmature* refers to a tree about to enter decline or already declining.

Health refers to the tree's vigour as exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion and the degree of dieback.

Condition refers to the tree's form and growth habit, as modified by its environment (aspect, suppression by other trees, soils), and the state of the scaffold (ie trunk and major branches), including structural defects such as cavities, crooked trunks or weak trunk/branch junctions. These are not directly connected with health and it is possible for a tree to be healthy but in poor condition.

Health	
Good	In good vigour with full leaf coverage of the crown; deadwood if present is internal and a normal feature of the species
Fair	Generally vigorous but shows symptoms of stress or decline, leaf coverage thinner than normal for the species; deadwood of smaller diameter may be present
Poor	Shows symptoms of advanced stress or decline including sparse crown with twig and branch dieback, lack of response to pests or disease
Structural condition	
Good	Has well-spaced branches and strong branch collars; form and habit typical of the species; good example of the species with low probability of significant failure
Fair	Has structural defects of moderate severity with low propensity for failure which could be remediated by pruning or modification of its environment
Poor	Has structural defects which have already failed and/or have a high propensity for failing in the future

Safe Useful Life Expectancy (SULE). In a planning context, the time a tree can expect to be usefully retained is the most important long-term consideration. SULE is a system designed to classify trees into a number of defined categories so that information regarding tree retention can be concisely communicated in a non-technical manner. SULE categories are easily verifiable by experienced personnel without great disparity. A tree's SULE category is the life expectancy of the tree modified first by its age, health, condition, safety and location (to give safe life expectancy), then by economics (ie cost of maintenance; retaining trees at an excessive management cost is not normally acceptable), effects on better trees, and sustained amenity (ie establishing a range of age classes in a local population). SULE assessments are not static but may be modified as dictated by changes in tree health and environment. Trees with short SULE may at present be making a contribution to the landscape but their value to the local amenity will decrease rapidly towards the end of this period, prior to their being removed for safety or aesthetic reasons. For details of SULE categories see Table 2, adapted from Barrell (1993 and 1995).

Decay is the result of invasion by fungal diseases through a wound.

Sparse crown refers to reduced leaf density, often a precursor to dieback and may imply stress or decline. Also possibly a response to drought or root damage.

Weak junctions are points of possible failure in the scaffold. They are usually caused by the trunk or branch bark being squeezed within the junction so that the necessary interlocking of the wood fibres does not occur and the junction is forced open by the annual increments in growth. This is often a genetic problem.

Wounds are areas where the bark has been damaged by branch breakage, impact or insect attack. Some wounds decay and cause structural defects or weakness. Healthy trees are able to resist and contain infection by walling off areas within the wood. Tree wounds are often eventually covered over by new bark but the walled off or infected areas still remain internally and may lead to weakness of the heartwood.

Disclaimer

All care has been taken to assess potential hazard but trees are always inherently dangerous. This assessment was carried out from the ground, and covers what was reasonably able to be assessed and available to the assessor at the time of inspection. No aerial or subterranean inspections were carried out and structural weakness may exist within roots, trunk or branches.

Any protection or preservation methods recommended are not a guarantee of tree survival or safety but are designed to improve vigour and reduce risk. Timely inspections and reports are necessary to monitor the trees' condition. No responsibility is accepted for damage or injury caused by the trees and no responsibility is accepted if the recommendations in this report are not followed.

Limitations on the use of this report

This report is to be utilised in its entirety only. Any written or verbal submission, report or presentation that includes statements taken from the findings, discussions, conclusions or recommendations made in this report, may only be used where the whole of the original report (or a copy) is referenced in, and directly attached to that submission, report or presentation.

Assumptions

Care has been taken to obtain information from reliable resources. All data have been verified insofar as possible; however, Treescan Urban Forest Management can neither guarantee nor be responsible for the accuracy of information provided by others.

Unless stated otherwise:

Information contained in this report covers only the trees that were examined and reflects the condition of the trees at the time of inspection: and

The inspection was limited to visual examination of the subject trees without dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.