

ATTACHMENT D

**TREE WISE MEN – ADDENDUM –
REPORT ON REVIEW OF PAST AND
FUTURE MANAGEMENT OPTIONS**

TREE WISE MEN®
AUSTRALIA PTY LTD

9 August 2013

Sent via Email: mflick@cityofsydney.nsw.gov.au

Ms Mardi Flick
Legal and Governance
Council of City of Sydney
Town Hall House
456 Kent Street
SYDNEY NSW 2000

Dear Ms Flick,

RE: Addendum02 Report to Review of Past and Future Management Options, Central Avenue Hill's Figs at Hyde Park North and South, Sydney dated April, 2013 prepared by Tree Wise Men® Australia Pty Ltd

Ref: 2110-J21HydeParkAugust13ReviewAdden02Final

1. Background

This Addendum02 Report follows the initial *AddendumFinA* Report dated 5 July, 2013.

The *AddendumFinA* Report related to the Tree Wise Men® Australia Pty Ltd (TWM) Report titled: *Review of Past and Future Management Options, Central Avenue Hill's Figs at Hyde Park North and South, Sydney*, dated April, 2013. That Report was prepared at the request of Council of City of Sydney under Brief dated 15 March, 2013 to assess:

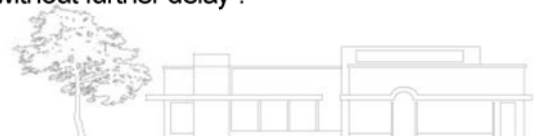
- (a) *Defects, health and structure;*
- (b) *Resulting impacts in risk to the public;*
- (c) *Resulting impacts in longevity of the planting and individual trees and*
- (d) *Any mitigating strategies that may alleviate defects and prevent further tree removal.*

The TWM Report of April, 2013 was Peer Reviewed by independent arboricultural experts Dennis Marsden of The Sugar Factory and Dr. Gregory Moore, Senior Research Associate Burnley Campus, University of Melbourne.

An additional hazard assessment and report titled: *Arboricultural Hazard Assessment, Resistograph Testing - t/R ratio Test*, dated June, 2013 (Revision 5) was prepared by Urban Tree Management Pty Ltd (UTM). That report was prepared as part of the regular, two yearly tree hazard assessment reporting of Hill's Figs in Hyde Park North and South for trees within Central Avenue and elsewhere within Hyde Park. The assessment was undertaken by UTM utilising the same methodology as that used by them in 2011.

In addition, there was a whole tree failure (windthrow) of Tree 1N on 30 June, 2013 and the scheduled immediate removal of Trees 11N and 22N arising from the findings of the UTM 2013 Report.

The conclusion of the TWM *AddendumFinA* Report was that the recommendations outlined in the TWM *Review of Past and Future Management Options, Central Avenue Hill's Figs at Hyde Park North and South, Sydney* dated April, 2013 remain unchanged and that block removal of trees within Central Avenue should commence "without further delay".



ATTACHMENT D

This Addendum02 Report makes comment on the tree management options for Hyde Park based on the City's desire to retain healthy trees for as long as possible, thereby deferring the block removal and replacement of the Central Avenue Hill's Figs.

Tree Wise Men® Australia Pty Ltd has previously confirmed that in principle, should block removal not to proceed "without further delay", that the trees with identified defects (significant inclusions, basal decay and/or sunscald damage) should be removed. Trees which are in poor condition and have had previous root damage, have also been included in the listing of trees that are recommended for removal.

As assessment of the failure potential of inclusions is not an exact science, an opinion was sought from Dennis Marsden (Sugar Factor) on the inclusions identified in the *Visual Tree Assessment (VTA) and Aerial Inspection* report by TWM, dated July, 2012. The findings and recommendations from the on-site aerial assessment of inclusions by Marsden (in conjunction with TWM) of 7 August, 2013 are summarised in the Recommendations column of Table 1 at Attachment A.

TWM have taken into account the City of Sydney's desire to retain the healthy tree as long as possible. We have reviewed the Draft Hyde Park Risk Management Plan and make the following comments on the key issues affecting the Park trees.

2. Hyde Park – Draft Hyde Park Risk Management Plan

The Draft Hyde Park Risk Management Plan (RMP) has been reviewed and we confirm that it provides a sound and concise risk management structure for the minimisation of tree related hazards within Hyde Park.

The RMP relates to all trees located within Hyde Park North and South and not only the Central Avenue Hill's Figs.

The RMP addresses all key risk factors and details the current controls to mitigate the particular risk.

We support the proposed "*Revised delegation to authorise City's arborists to immediately remove trees*" in the event that imminent dangers are identified.

3. Hyde Park Trees – Key Issues

3.1 Previous Tree Failures and Tree Removal

Of the original one hundred and forty five (145) trees planted in Central Avenue, forty eight (48) have been removed¹ creating significant gaps in the planting.

It is also noted that forty three (43) Hill's Figs have failed or been removed (due to critical defects) since 2004. This is a significantly large proportion of trees from the original Hill's Figs planted in circa 1930 and confirms our view that the Hill's Fig population is mature to over-mature.

3.2 Decay

The white rot fungi *Phellinus sp* and *Ganoderma sp*. continue to spread and cause structural defects in the base (rootcrown) of the Hill's Fig population in Hyde Park. Trees 1N, 11N and 1S (all three now removed) all showed significant increases in the extent of decay between the 2011 and 2013 assessments undertaken by UTM. The failure of T1N prior to scheduled removal identified the urgency of the tree management works now recommended in this report.

Other trees with identified decay pockets are likely to become more unsound as the decay progresses within the base of these trees.

The following four (4) trees have been recommended for removal without further delay due to unacceptable levels of decay: Trees 185N, 14S, 81S and Tree 83S.

¹ 1.1.3 Of Review of Past and Present Management Options, Central Avenue Hill's Figs April, 2013 by TWM.



ATTACHMENT D

3.3 Inclusions

Bark inclusions have been identified within the Hill's Fig population in Hyde Park. Inclusions are common with this tree species but as the trees age, failures at included limb junctions become more likely. The results of the 7 August, 2013 assessment of the failure potential of are summarised in the Tree Management Recommendations Table 1 at Attachment A.

Tree 292S is the only tree requiring removal "without further delay". The other twenty one (21) trees with inclusions have been recommended to be retained, but with annual aerial inspections and reduction pruning every 5 years. The next round of reduction pruning will be in 2017.

3.4 Root Damage

Root damage has occurred during various construction and infrastructure projects undertaken within Hyde Park in recent years. The result of such damage is demonstrated in the recent failure of Tree 1N and Tree 153S. A total of sixteen (16) trees have been noted as having root damage. Following review of these trees, eleven (11) have been recommended for removal without further delay due to the extent of root damage. These eleven (11) trees are: Trees 124N, 127N, 206N, 44S, 131S, 229S, 237S, 251S, 254S, 345S and Tree 360S.

4. Conclusions

We support City of Sydney's alternative approach to tree management in Hyde Park to retain healthy trees for as long as possible, until such time as the block removal of the Central Avenue Hill's Figs can be implemented.

In supporting this approach, the Risk Management Plan (RMP) will be required to be approved and fully implemented to allow for timely mitigation of identified tree risks.

The Tree Management Recommendations Table (Attachment A) summarises the tree management recommendations for each tree identified with tree defects. A total of forty three (43) trees were identified with noteworthy defects in the recently prepared tree assessment report. Of these forty three (43) trees, sixteen (16) are recommended for removal without further delay for the following reasons: decay (4 trees), inclusions (1 tree) and root damage (11 trees).

Kind regards,



Peter Castor
DIRECTOR

Attachment A: Table 1 Tree Management Recommendations



ATTACHMENT D

Attachment A: Table 1 Tree Management Recommendations



TREE MANAGEMENT RECOMMENDATIONS - HYDE PARK NORTH

Notes:

1. Trees in **red** located in Central Avenue.
2. Defect Types data from UTM 2013 (decay), TWM 2012 (inclusion) and CoS records (root damage).
3. Assessment of inclusions agreed between TWM and Dennis Marsden (Sugar Factory) 7 August, 2013.

Tree No.	Species	Defect Type			Recommendations (Retain or Remove)
		Decay	Inclusion	Root Damage	
79N	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (beyond inclusion, western leader) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist.
124N	Port Jackson Fig, <i>Ficus rubiginosa</i>			√	Remove. Recent root damage within SRZ College Street.
127N	Plane Tree, <i>Platanus X hybrida</i>			√	Remove. Recent root damage within SRZ College Street
129N	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (entire crown) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist. Particular assessment to be given to NW and SW heading leaders.
144N	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>			√	Retain. Annual aerial inspection by independent AQF Level 5 Arborist. Monitor internal decay as per UTM 2013.
164N	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (entire crown) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist. Particular assessment to be given to NE and NW heading leaders.
169N	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (entire crown) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist.

Tree No.	Species	Defect Type			Recommendations (Retain or Remove)
		Decay	Inclusion	Root Damage	
184N	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (beyond inclusion, NE heading leader) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist. Particular assessment of crown gap adjacent proposed removal of T185N.
185N	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>	√			Remove. Drill #2 failed (UTM 2011). Tree exposed to southerly winds. UTM 2013 drill recordings marginally pass and recommending retention "likely < 3 years."
186N	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (beyond inclusion, NW heading leader) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist. Particular assessment of crown gap adjacent proposed removal of T185N.
188N	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (entire crown) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist.
189N	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>			√	Retain. Monitor internal decay as per UTM 2013.
195N	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Prune to remove inclusion at 9m a.g. Final pruning cut (400mm diameter) at 2 nd Order branch junction, 2m back from inclusion. Annual aerial inspection by independent AQF Level 5 Arborist. Particular assessment of crown gap created by recommended pruning.
206N	Plane Tree, <i>Platanus X hybrida</i>			√	Remove. Recent root damage within SRZ. Tree has poor condition.
217N	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>			√	Retain. Negoya Gardens Fig. To be added to list of trees for decay monitoring by UTM.
218N	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (entire crown) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist.

Tree No.	Species	Defect Type			Recommendations (Retain or Remove)
		Decay	Inclusion	Root Damage	
219N	Hillis Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>			√	Retain. Monitor internal decay as per UTM 2013.
220N	Hillis Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>			√	Retain. Monitor internal decay as per UTM 2013.
227N	Hillis Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (beyond inclusion, southwestern 3 rd Order limb at 15m a.g.) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist.
255N	Hillis Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (beyond inclusion on north heading leader.) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist.

TREE MANAGEMENT RECOMMENDATIONS - HYDE PARK SOUTH

Notes:

1. Trees in **red** located in Central Avenue.
2. Defect Types data from UTM 2013 (decay), TWM 2012 (inclusion) and CoS records (root damage).
3. Assessment of inclusions agreed between TWM and Dennis Marsden (Sugar Factory) 7 August, 2013.

Tree No.	Species	Defect Type			Recommendations (Retain or Remove)
		Decay	Inclusion	Root Damage	
14S	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>	√			Remove. Decay has increased since 2011. Tree exposed to northerly winds. Tree has sunscald northwest side. Roots confined by path to southwest.
44S	English Oak, <i>Quercus robur</i>			√	Remove. Recent root damage. Tree in poor condition.
69S	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>	√	√		Retain. Undertake 20% crown reduction (beyond inclusion on north heading leader.) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist. Monitor internal decay as per UTM 2013.
71S	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Prune to remove inclusion at 13 m a.g. Final pruning cut (300mm diameter) at 3 rd Order branch junction, 3m back from inclusion. Annual aerial inspection by independent AQF Level 5 Arborist. Particular assessment of crown gap created by recommended pruning.
81S	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>	√			Remove. Decay has increased since 2011. Decay in 2013 marginal (<35% soundwood on Drill #1 and #2). Tree has significant sunscald damage (TWM 2012).
83S	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>	√			Remove. Decay has increased since 2011. Drill #2 fails (27% soundwood) UTM 2013. Tree has open basal cavity. Tree located adjacent disease hot spot (Hyde Park TMP 2006, page 47).
84S	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>	√			Retain. Annual aerial inspection by independent AQF Level 5 Arborist. Monitor internal decay as per UTM 2013.

Tree No.	Species	Defect Type			Recommendations (Retain or Remove)
		Decay	Inclusion	Root Damage	
86S	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (entire crown) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist.
89S	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (entire crown) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist.
90S	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (entire crown) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist.
131S	Maidenhair Tree, <i>Ginkgo biloba</i>			√	Remove. Previous root damage. Tree in poor condition.
229S	Port Jackson Fig, <i>Ficus rubiginosa</i>			√	Remove. Previous root damage within SRZ. Tree in fair condition.
237S	Port Jackson Fig, <i>Ficus rubiginosa</i>			√	Remove. Previous root damage within SRZ. Tree in poor condition.
245S	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (southern leader) every 5 years. To remove inclusion prune north component of inclusion at 6m ag. to northwest. Annual aerial inspection by independent AQF Level 5 Arborist.
251S	Port Jackson Fig, <i>Ficus rubiginosa</i>			√	Remove. Previous root damage within SRZ. Tree in poor condition.
254S	Port Jackson Fig, <i>Ficus rubiginosa</i>			√	Remove. Previous root damage within SRZ. Tree in poor condition.
266S	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (entire tree) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist.

Tree No.	Species	Defect Type			Recommendations (Retain or Remove)
		Decay	Inclusion	Root Damage	
269S	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (beyond inclusion at 7m a.g. to southeast) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist
270S	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Central included leader to be pruned to 5m a.g. within 1 year. Entire central included leader to be reassessed in 5 years with possible removal. Annual aerial inspection by independent AQF Level 5 Arborist
271S	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Retain. Undertake 20% crown reduction (entire tree) every 5 years. Annual aerial inspection by independent AQF Level 5 Arborist
292S	Hills Fig, <i>Ficus microcarpa</i> var. <i>hillii</i>		√		Remove. Multiple inclusions, some deep and predisposed to immediate failure. Tree has significant sunscald
345S	Port Jackson Fig, <i>Ficus rubiginosa</i>			√	Remove. Previous root damage within SRZ. Tree in poor condition.
360S	Brush Box, <i>Lophostemon confertus</i>			√	Remove. Previous root damage within SRZ. Tree in fair condition.