



the bushland shire

creating a living environment

**LATE ITEM
ATTACHMENTS
BUSINESS PAPER**

ORDINARY MEETING

**Wednesday, 21 September, 2011
at 6.30pm**

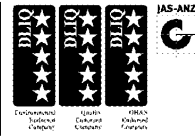
TABLE OF CONTENTS

LATE ITEMS

Item 27 LM16/11 Nature Strip Tree at 23-25 Grantham Crescent Dangar Island 2
Item 13 LM15/11 Request to remove tree at 24A Myra Street, Wahroonga..... 8



Total Height Safety Pty Ltd
Tree Restraint Division



Client: Newcastle City Council Infrastructure Management Services 282 King Street Newcastle, NSW, 2300		Reporting Company: Total Height Safety Pty Ltd PO Box 230 Milsons Point, NSW, 1565 02 9966 9070	
Client Contact: Mr Lindsay Field City Arborist 02 4974 2625 0408 806 268 lfield@ncc.nsw.gov.au		Report Writer Mr William James Goddard Restraint System Consultant 02 9966 9070 0408 967 458 bill@ths.com.au	
Report Type: Report Topic: Subject Site: Site Meeting Date: Report Date:	Feasibility Study Tree Restraint Laman Street Friday the 18 th June 2010 9 th July 2010	External Consultant: Structural Engineer Peter Allsopp 02 9906 2600 peter@peterallsopp.com.au	

Client Scope of Works:

- To review the technical reports as background to your investigations into the feasibility of using a cable system to reduce or eliminate the risk of whole tree failure so that the precinct can return to normal traffic, parking and pedestrian use;
- To conduct a site inspection of the Laman Street trees in conjunction with Mr Lindsay Field
- To provide a preliminary report on the feasibility of using a cabling system to return the precinct to normal usage.
- Should you find that such a cabling system is a feasible option, provide an indication of cost for the full design, installation and certification of such system

Background Information Documents

The following documents were provided as background information:

- Tree Logic Report Dated 2nd September 2009
- The Sugar Factory Report Dated 7th August 2009

Site Meeting:

I attended a site meeting on Friday the 18th June 2010 in the presence of Mr Lindsay Field and Mr Philip Hewett. The meeting provided background information and highlighted the situation concerning to the trees. It is understood that the council is reviewing all possible options for the safe and effective retention of the existing street trees. The primary focus of the meeting was to look at the feasibility of installing structural tree restraints to greatly reduce the risks associated with total tree failure.

Tree Restraint:

Tree restraint is a general term that describes the process of installing synthetic or steel cables in a tree to improve the structural strength or stability of a tree or tree sections. In this case it would be four synthetic fibre rope restraints leading from steel post structures that surround the tree. The steel post structures would be evenly spaced around the tree and at a distance of approximately 6m from the tree. The steel posts would be placed down the center of the road and within the verge next to the footpath. The synthetic ropes would be manufactured from 12 strand hollow Dyneema® fibre. The restraints would be spliced around branch junctions within the trees crown and then lead to the top of the pole structures.

This type of tree restraint is not normally load bearing under normal conditions and it only becomes load bearing should the tree or tree section move beyond its natural range of movement. The common term for this type of restraint is a "Lazy Cable". It is designed to support the tree during overloading or failure of the tree or tree section.

Total Height Safety Pty Ltd		ABN: 18 095 998 799	
Mailing address: PO Box 230 Milsons Point NSW 1565		Office address: Unit 10/87 Reserve Rd, Artarmon NSW 2064	
Phone: 02 9966 9070	Fax: 02 9966 9071	Email: info@ths.com.au	Web: www.ths.com.au



Feasibility Factors:

The factors that make this restraint system feasible or not are as follows:

1. The rated strength of the restraint system
2. The footprint of land each structural connection to the ground occupies
3. The location of each structural connection to the ground
4. The restriction or loss of access to the street or footpath
5. The visual impact of the installed restraint system
6. The effectiveness of the restraint system to prevent total tree failure
7. The cost of the project

System Strength

As identified in the Sugar Factory Report Section 8 (Risk Management Options) a selection of the trees exhibit a large sail area. Calculations by our structural engineer on the possible wind loading of the sail area generate figures of up to 65,000 Tonnes. All loading calculations were based on Australian Standard 1170.

The restraint system would need to be designed for the worst-case scenario. Wind loading on the sail area of the largest tree in the most exposed location provides us with the required rated strength. The rated strength then dictates the steel size requirements and the connection to the ground. In this case the steel sizes would exceed a size that could be defined as low visual impact. The sizes would also impact on the ground footprint that would prevent easy pedestrian or vehicle access to the street. The possible applied load is the greatest limiting factor for the design of an effective and practical tree restraint system.

The Footprint

The footprint of the post structures is likely to be no smaller than 3.5m x 3.5m. Three posts of 250mm Diameter would be required in a triangle formation. Franki Piles to a depth of 7.5m would be required to achieve the structural stability for the posts. The footprint of 3.5m x 3.5m would be restrictive as it would limit the locations of the posts and would require the loss of footpath and road access.

Location of Post Structures

The location of the post structures around each tree becomes extremely difficult when we need to allow a 3.5m x 3.5m footprint. For example the posts down the centre of the street would need to be located in an island that would be 4.0m wide. The width of these islands would prevent normal vehicle movement in the street.

Finding locations for the footings along the building side of the road also becomes restrictive at various points along the frontage. The park side of the road also has the added complication of the sloping embankment that would mean taller post structures. The post structures would also have a large visual impact on the street and park scape.

Loss of Access

Part of my brief was to consider a restraint system that would return the street back to normal traffic, parking and pedestrian use. The loading on the restraint system dictates the size requirements of all the components that make up the restraint system. The size of the post structures will prevent normal vehicle movement through the street. It would be possible to have pedestrian access around the post structures if required.

Visual Impact

It is my view that the post structures present the greatest visual impact. I was hoping that a single post structure would be sufficient to support the tree restraints but our calculations proved that wrong. The visual impact of the posts would be dramatic and intrusive to the streetscape. The steel structures would dominate over the trees and reduce the softness the trees provide to the streetscape.

Total Height Safety Pty Ltd		ABN: 18 095 998 799	
Mailing address: PO Box 230 Milsons Point NSW 1565		Office address: Unit 10/87 Reserve Rd, Artarmon NSW 2064	
Phone: 02 9966 9070	Fax: 02 9966 9071	Email: info@ths.com.au	Web: www.ths.com.au

100709_Newcastle_Report.doc

Page 2 of 3

	Total Height Safety Pty Ltd	
	Tree Restraint Division	

Effectiveness of the Tree Restraint System

The proposed design would be effective at limiting the trees movement during total tree failure. Multiple restraints would carry load and prevent the tree moving in any direction. Each post structure would have multiple restraints leading to a number of branch junctions within the tree. Each restraint would help to distribute the load over the crown of the tree. It is with no doubt that the restraint system would be effective and practical if the post structures were not so intrusive in the environment.

Project Cost:

The cost of each post structure with restraints is estimated at \$30,000.00 + GST. The first and last tree in a row would require four posts and each adjoining tree would require two posts. The internal trees within the rows would share posts with each other. The post design, fabrication and installation contribute to a large portion of the cost. The Dyneema® rope restraints cost \$37.20 + GST per meter and an estimated 100m would be required per tree.

Other Options

Other options were explored such as an arch shaped canopy frame extending down the whole street. This frame would span the street from footpath to footpath and would need to be over 5.5m high to allow for vehicle clearances. Due to the different tree canopy sizes and tree spacing the frame would not have consistent frame spacing along the street. Some of the trees have extremely wide canopies and others very small. This means that the frame spacing and size could not be a consistent. The frame could not pass through the canopy. The size of the steel sections would still need to be 250mm Diameter round hollow section or similar. The arch style frame would again dominate the street and detract from the leafy tree look of the street.

The general crown shape of the trees makes it very hard to install a frame around the trees at 6.0m above ground. The short trunk divides into multiple stems that have a horizontal habit and this means that the frames could be up to 25m wide. Should tree failure occur the soft outer branches would bend and break against the frame and the whole tree may end up sitting on top of the frame. This is why the frame needs to be so strong as it may need to support the whole tree weight during a time of failure. I do not recommend this concept as a practical solution to the problem.

In Summary

I would deem the concept of tree restraint not feasible due to the visual impact, the cost of the project and the restricted access that will apply to vehicles. The visual beauty of the street would be compromised by the installation of the steel structures required to support the trees. Site access for boring equipment, concrete trucks and cranes would all impact on the trees during the construction period. Damage could be expected to the road surface, drainage and footpaths. Boring the holes for the piles may impact on root systems and possible underground services.

The embankment leading down to the park presents a number of problems when installing the post structures. Geo Technical studies would be required to determine the level of fill and the type of soil structure before footing designs could be determined. The increased post heights will require additional structural engineering detail to determine the post and footing design. In conclusion I do not recommend proceeding with tree restraint as risk management option.

Please phone or email if you require additional information or clarification of any of the document content.

William James Goddard
Structural Tree Restraint Division
Total Height Safety Pty Ltd



Total Height Safety Pty Ltd		ABN: 18 095 998 799	
Mailing address: PO Box 230 Milsons Point NSW 1565		Office address: Unit 10/87 Reserve Rd, Artarmon NSW 2064	
Phone: 02 9966 9070	Fax: 02 9966 9071	Email: info@ths.com.au	Web: www.ths.com.au

From : Bill Goddard [mailto:bill@ths.com.au]
Sent : Monday, 19 September 2011 9:45 AM
To : Lisa Murphy
Subject : Re: 23 Grantham Cres Dangar Island.

Hi Lisa

You have not given me a lot of time to prepare a detailed response. I am working on current projects and have a lead time of about 14 days. Your question should not be about the cost of a tree restraint system but is a tree restraint system going to be practical and provide an effective risk reduction solution.

I had a quick look at the reports and images on Friday and I do not consider tree restraint to be an effective solution for tree preservation. Given the previously failures and the location of these failures on the stems, tree restraint would be ineffective. We could install tree restraints on each stem but the stem may fail at or beyond the restraint. Predicating the likely point of failure on each stem can be difficult and not accurate. If the stem fails beyond the restraint location then it has been ineffective at reducing the risk associated with the tree. The images show large stem failures occurring at different locations along the stems. The question must be asked, at what location should the restraints be installed so they will catch the stems should they fail.

The common approach is to install the restraints on the larger diameter sections, as these will cause the most damage or risk to life. That approach may not reduce the risks to an expectable level in this case. I can not comment any more without investing more time. I hope this answers your questions

Please phone or email if you have any further questions.

Many Thanks

Bill Goddard
Tree Restraint Division
Total Height Safety Pty Ltd

Email: bill@ths.com.au
Office: 02 9966 9070
Mobile: 0408 967 458

Bob

I confirm my telephone advice that the Works Division considers that the permanent fencing of Grantham Cres at the drip line of the subject tree would have an unacceptable impact on the passage of foot traffic and vehicular traffic on the Island. As indicated in your report, fencing would extend beyond the boundary of the road reserve and would impact private property. Walking is the predominant mode of movement on the Island, and residents are used to going "where they always have gone". The long way around may not be acceptable, and shortcuts through private property (not acceptable) or through the obstruction may result. Human nature being what it is, the fencing would need to be of a substantial nature if we were to ensure that it could not be removed by frustrated members of the public. Visitors to the Island would not be familiar with alternate routes to a destination, notwithstanding the size of the Island, and may also be tempted to ignore any barrier. Illumination of such an obstruction at night may also be required.

Any proposal that restricts pedestrian or vehicular access in this location is not supported. Additional comment from Council's Risk Manager should also be obtained.

I will arrange for a suitable sketch plan to be prepared showing the extent of fencing if the dripline option is pursued.

Regards

Max

Maxwell Woodward

Executive Manager Works | Hornsby Shire Council

p 02 9847 6665 | **e** mwoodward@hornsby.nsw.gov.au | **w** www.hornsby.nsw.gov.au



ATTACHMENT 4 - ITEM 27

From:

18 September 2011

██████████
24A, Myra Street
Wahroonga 2076.

Respected Mayor,

Re: Withdrawal of my appeal which is scheduled to be heard on Wed, 21st Sep 2011.

I have sent two emails, on 29/08/2011 and 10/09/2011 requesting extension for presenting my appeal to the October meeting. I have had no response to it until today.

In my last correspondence I requested that in case you cannot give me extension for my appeal to be heard at the General Council Meeting of Sep 21st to your Oct 2011 Meeting, I would withdraw the appeal.

I have no option then to withdraw as I feel the process of hearing of appeal under TPO laws is one sided. Besides, councilors are bound by "An oath of allegiance", hence they will not be giving their honest verdict while considering my appeal. I am certain that they have already made up their minds even before my appeal goes for hearing in the general body meeting.

The word 'councilor' is highly respected in the world. But to-day councilors consider their seat in the council is more important in the political sense. Even sometime they do not want to listen to their SOUL. To-day councilors are prisoners of the Council. They are afraid, that the council will take action under the Council's Code of Conduct if they displease the council officer. In short they are not independent in their thinking.

I would like to place on record that I HAVE LOST MY CONFIDENCE IN THE SO CALLED COUNCILLORS and do hereby withdraw my appeal to remove one tree from my backyard – a topic that commenced in April 2011. Please change your TPO laws which shows to the world that you are giving opportunity to here the person against the decision taken by a council officer. This TPO laws is nothing but an eye wash.

Yours truly,

██████████