

Possible Improvements for Asia Tree Preservation Practices Humble Suggestions



Tree Conservation and Management Seminar

*Trees Our Asset – The Challenges of Tree
Conservation and Management*

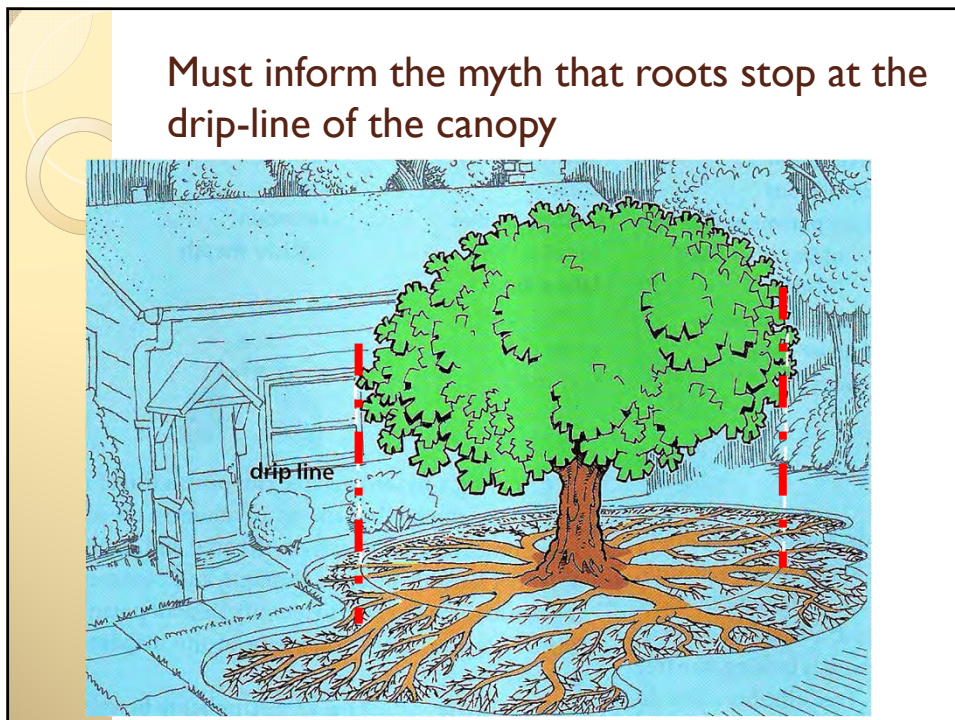
Dec. 13, 2008 Chinese University of Hong Kong (CUHK)

Presented by Donald Lee Picker 畢加霖, *Managing Director* Asia Tree
Preservation, Limited 美亞樹藝服務有好公司

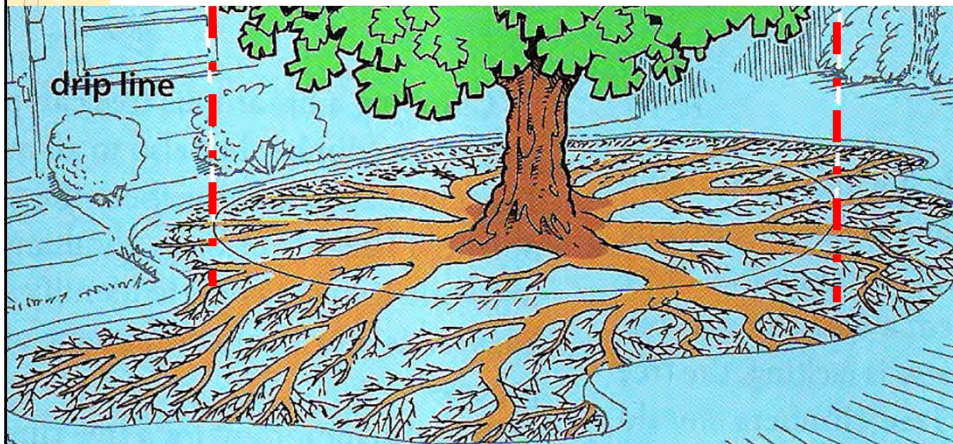
ISA Certified Arborist-Utility Specialist Tree Worker/Climber Specialist

Tree Conservation & Management:

- Preservation
 - Standards required to accomplish goals
 - Policy and Public Awareness
- Current Knowledge & Practice
 - Modern Arboriculture Applications
 - Systematic Method for Tree Assessment
 - Balance of Protection for Trees and Public Safety
- Education
 - Training for the Citizen
 - Training for the Worker



Roots are the most important tree structure as it relates to health and stability for the tree



樹木的根有以下四個主要功能：固定、貯藏、吸收及傳導

The importance of roots is obviously not understood by some who perform tree survey and construction crews!



Unnecessary equipment damage can be avoided with proper instruction.



This was not an Old & Valuable Tree (OVT) but it was a fine mature specimen of the Camphora.



This was not an Old & Valuable Tree (OVT) but it was a fine mature specimen of the Camphora.



樹葉可以被看作是樹木的“食物製造廠”。
與人類及其他動物不同，植物實際上是自己
製造它們所需要的食物。

這個過程被稱作光合作用，這也意味著用光線製造。

However some still do not understand the importance of the crown/leaves for photosynthesis.

剪樹不當南昌邨法團違契

【本報訊】修剪樹木不當，業主立案法團需負法律責任。屬租者置其屋邨的深水埗南昌邨近日大規模修樹，環保團體發現部分樹木被去頂，整個樹冠遭剪掉，樹木可能因缺乏營養，及受真菌感染而枯死，若該邨地契有保護樹木條款，業主立案法團或已違反條約，可被罰款。地政總署表示會跟

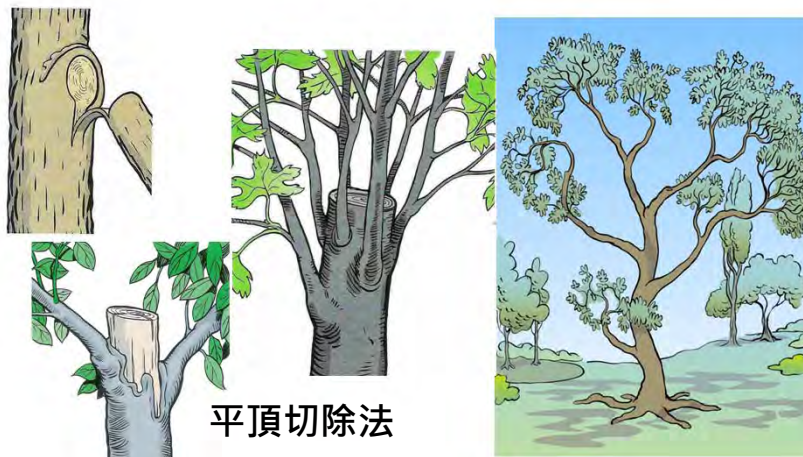
察的長春社保育經理蘇國賢表示，估計有廿多棵樹木被人亂修剪，只剩下約三分之一的樹葉，部分樹木更是整個樹冠遭剪掉，主要是細葉榕、白蘭樹及栢柱木等品種。他指，有樹木的修剪口直徑達三十厘米，容易被真菌入侵。

南昌邨由於為租者置其屋邨，邨內範圍由業主立案法團管轄，綠色力量行政總幹事文志森指，該屋邨修剪樹木不當，或已違反地契上有關保護樹木條款，業主立案法團可能會被罰款。本報昨晚致電該屋邨的管理公司查詢，但該公司指負責有關事宜同事已下班，着記者在辦公時間內查詢。



南昌邨大批樹木遭剪去樹冠。
（相片由長春社提供）

Poor practices of topping 平頂切除法：不正確的修剪法，把嫩枝修剪至不足以發揮頂端優勢的枝芽、殘段、節或側枝 and liontailing “獅尾”（式修剪）：差劣的修剪方法，把枝條內部（下部）的小枝過量修剪，而剩下末端的一堆枝葉 trees still causes much damage in Asia and the still USA also.



liontailing “獅尾”（式修剪）

平顶切除法指将树干从断枝、萌芽、或小的侧枝处切割，通常要预先确定树冠尺寸。

- 平顶法会导致腐烂及水芽从树枝的剪切端产生。
- 虽然这些水芽的依附力较弱，但当它们变得大而重后会成为危害。
- 许多留下的断枝很可能腐烂，并且腐烂会向下蔓延到茎干。
- 实际修枝时，不推荐使用平顶法。

Even many OVT of Hong Kong have had the root soil space restricted often prior to 2004 when started.



Possible improvements for the preservation of the OVT could be to take active measures to amend the conditions and space where they live.



Perhaps new less harmful surfaces



Some surfaces if removed could allow for more root development



Use of mulch & mycorrhizae



Healthy roots are crucial



Mulch creates biological activity and keeps in moisture

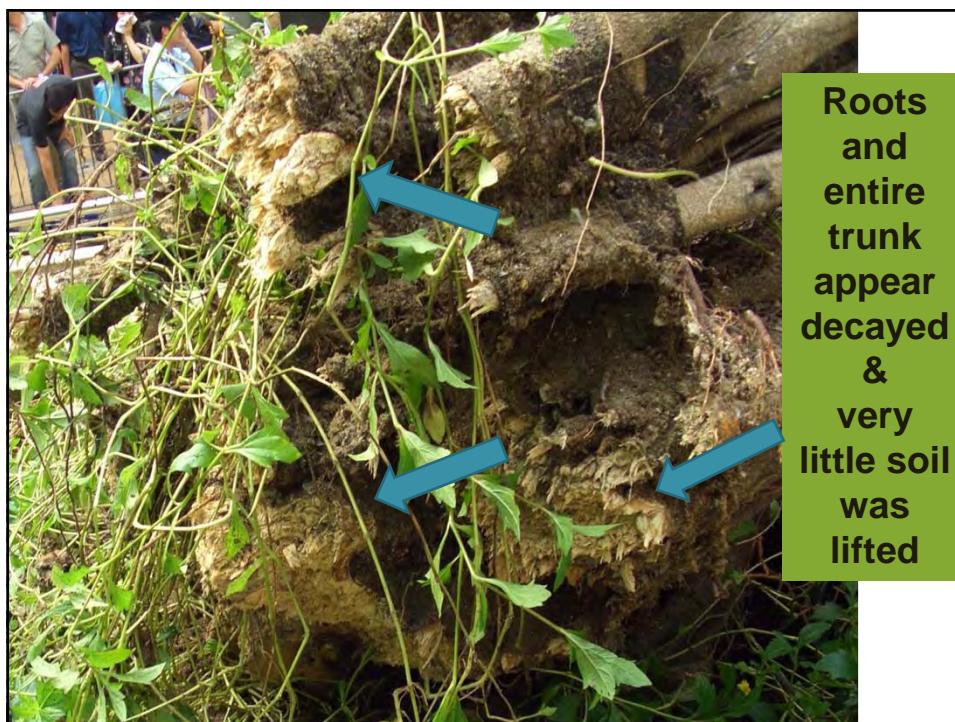


Mycorrhizae helps absorption



When trees fail it is often because of root failure at the base of tree.





No space for the tree root structure:

Tree failure at corner of Bonham Road and Honiton Road Hong Kong Western District



The public normally believes that trees in the city environment must be safe



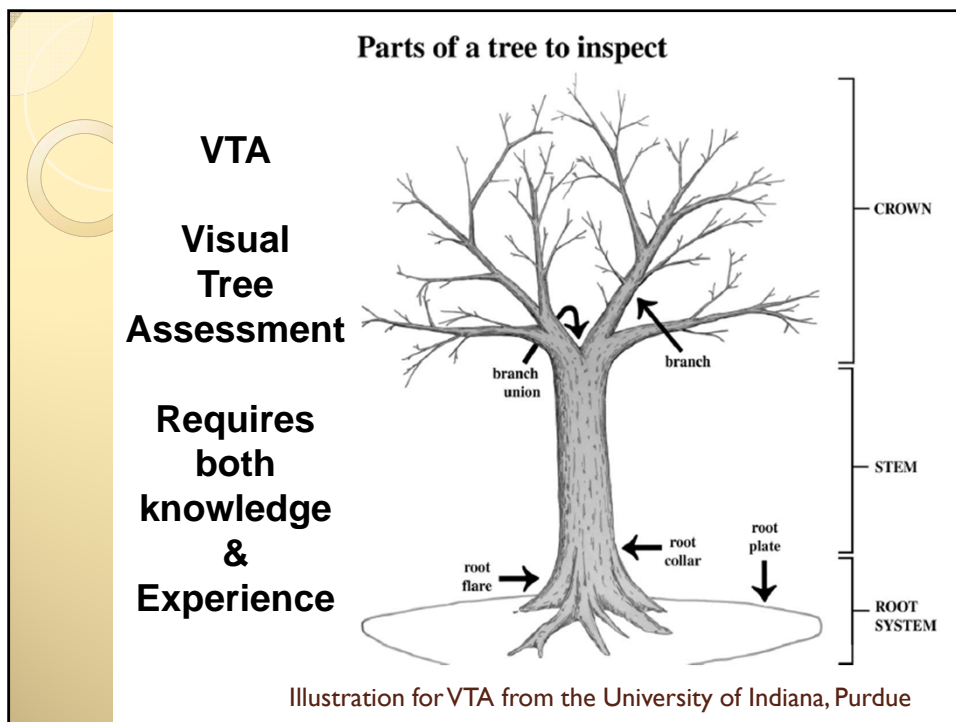
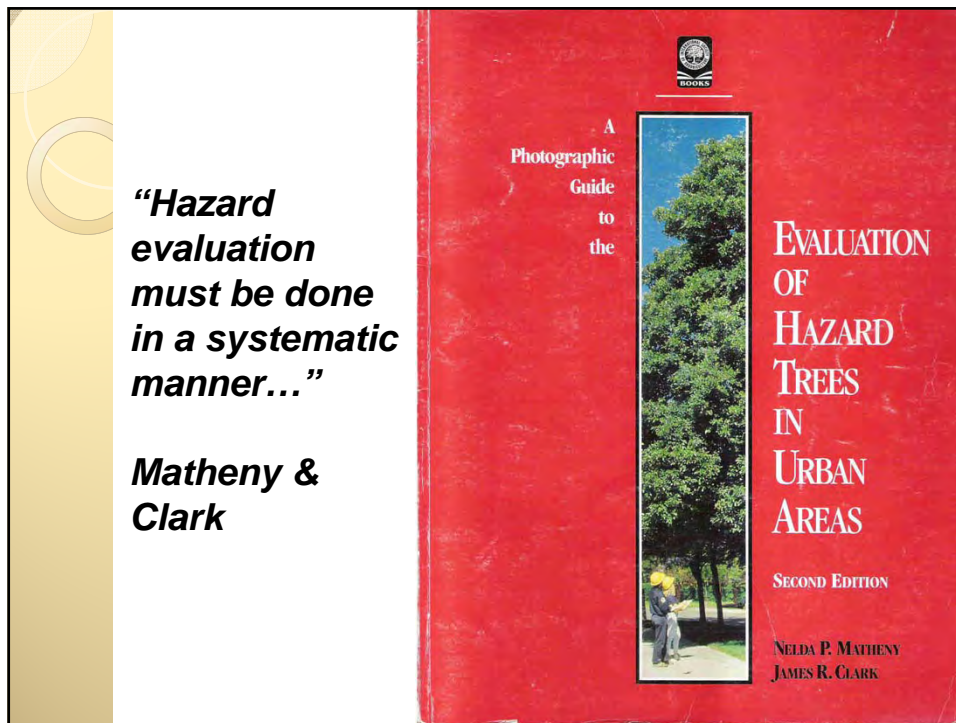
Problems hiding just below the cement

Grade changes and compaction often the problems



Tree Risk Assessment consists of the evaluation of a tree or number of trees in order to determine the 'Risk' or the probability of something adverse happening; the likelihood that the hazard will cause harm or injury.

Assessment of tree failure hazards or risk requires consideration of the mechanical integrity of the tree and the likelihood that the tree or part of it will fail within a given period.



Hazard Recognition 識別危險 & Inspection of the Tree and Site 樹木及場所的檢查

檢查所有危險，如已死亡或斷掉的枝條、裂紋、昆蟲或其他動物、枝條是否牢固地連接著或諸如真菌的書架形子實體 (**conks**)或子實體 (**fruiting bodies**) 等腐爛的跡象。

有些問題及危險是顯而易見的，例如木頭裏大的空洞及裂痕，其他的問題如果不進行仔細地搜尋，有可能不會發現。

Detailed Report
of all aspects
of VTA
and
Recommendations
for Abatement

(actions to reduce
or remove the
hazard potentials)

Asia Tree Preservation, Ltd.

Tree Risk Assessment: **Ficus microcarpa** (Chinese Banyan, 榕樹, 細葉榕)

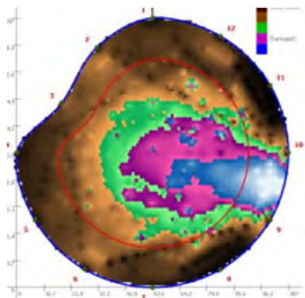
Location: Rhenish Church on Bonham Road, Hong Kong Island

By Donald Lee Pkiker 李卓賢 Managing Director

ATP Asia Tree Preservation Limited
www.asiatreepreservation.com

July 10, 2009

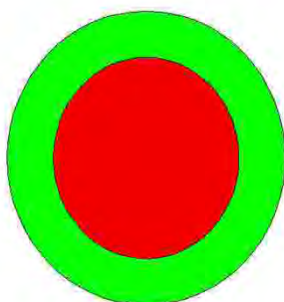
Picus Sonic Tomography Imaging



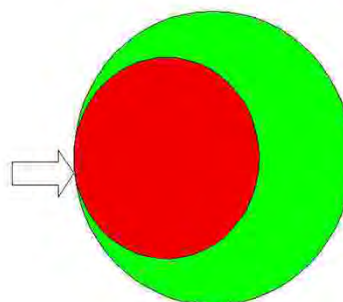
Stress wave tomography mainly reveals mechanical compactness of the wood in the cross-section. This information is more important for stability evaluation than wood condition because it correlates to moment of inertia (and subsequently strength of the cross section)!

Value of tomography imaging for assessment

These areas are even, but do have very different effects on the strength of a tree:



No danger

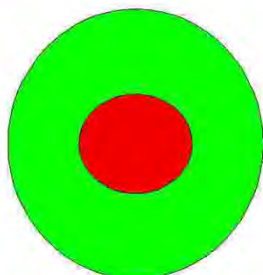


Possibly hazardous

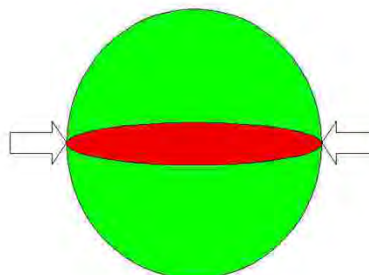
Photo-Frank Rinn

Value of tomography imaging for assessment

No danger



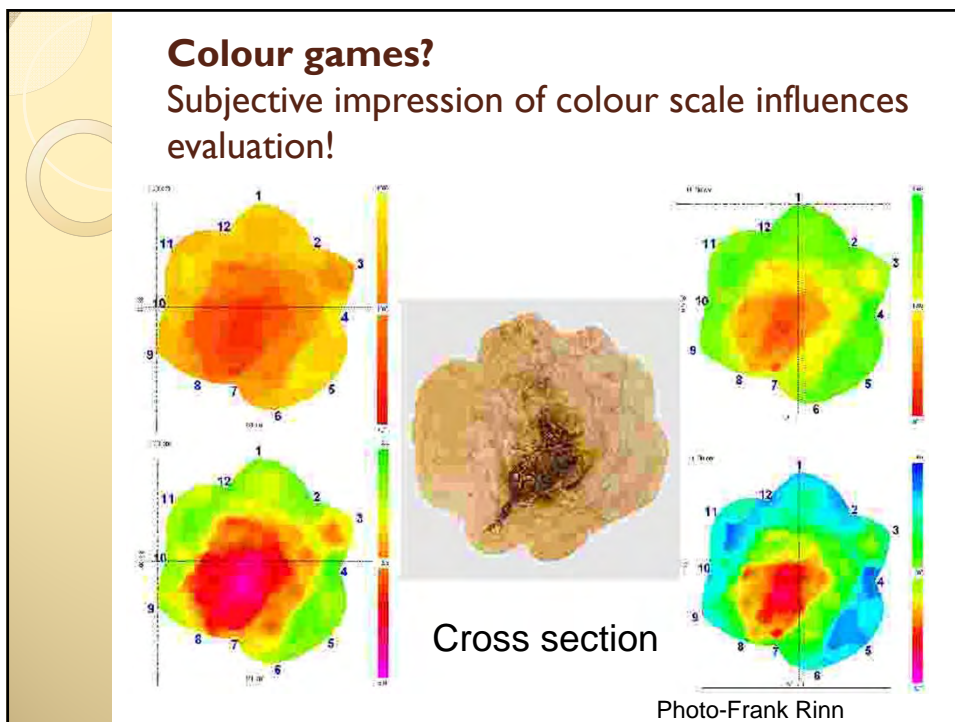
Possibly hazardous



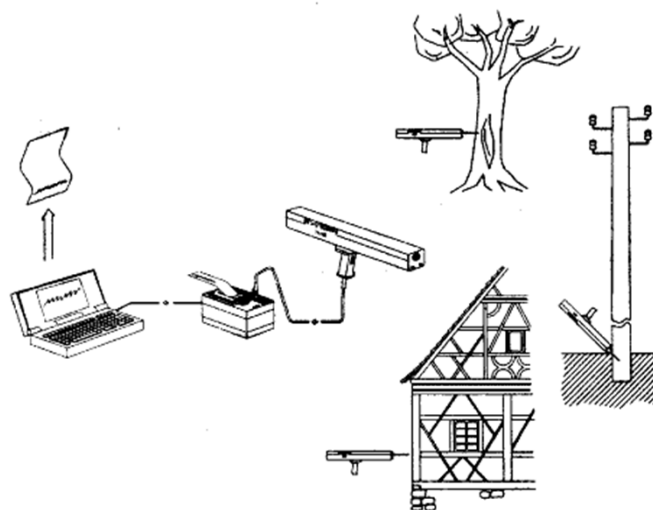
In case of an exocentric decay pattern the absolute area of decay is irrelevant. Form and localisation of decay is of much more importance. The trunk will always brake at its weakest points.

The Arbortom from Rinntech

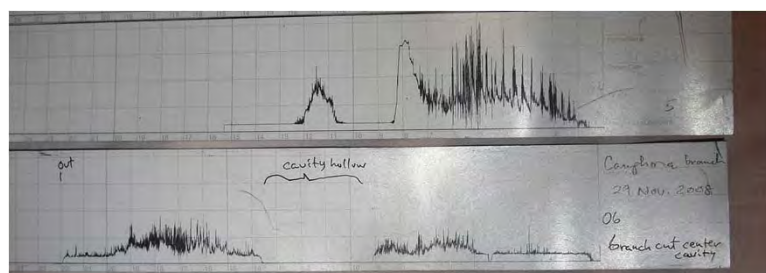
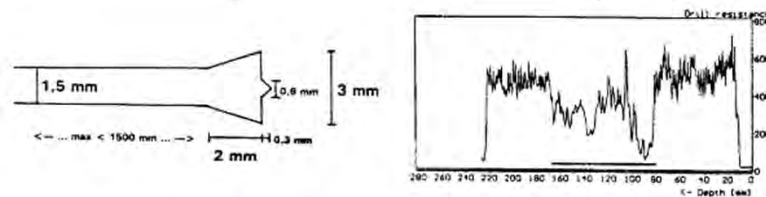




The Resistograph for measuring tree wood density by drilling



Invasive method and is only to be used when a tree is already being assessed as a potential hazard. Successfully used in Temperate trees it yet remains to be thoroughly tested in tropical woods. Much more data needs to be collected and compared but it does provide a good guide.



Sonic imagery methods provide a graphic picture and drilling reveals tree wood condition

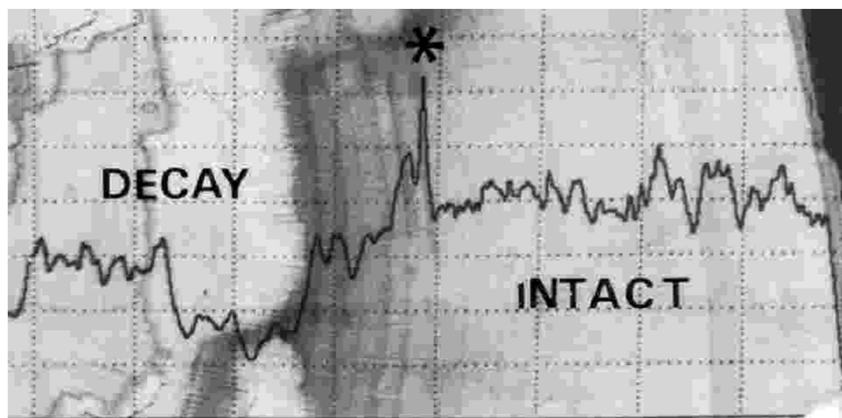


Photo-Frank Rinn

The intersection of intact wood to decay reveals information about; CODIT *compartmentalization-of-decay-in-trees*, Dr. Alex Shigo

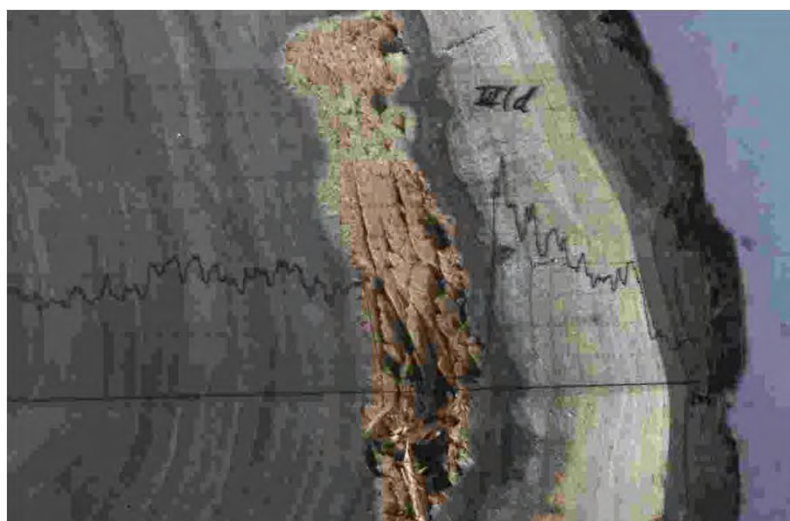


Photo-Frank Rinn

CODIT *compartmentalization-of-decay-in-trees*, 樹木腐朽區隔化 Dr.Alex Shigo

- 亞曆克斯.辛格，一位卓越的樹木研究者，已經建立了這種被稱為**CODIT**,即**樹木腐朽區隔化**過程的類比模型。
- 在辛格博士的模型中，樹木有四道阻隔“牆”。
- 第一道牆，樹木依靠木質部堵漏細胞抵禦垂直方向上腐爛的蔓延。
- 第二道牆，樹木通過年輪抵禦向內的蔓延。

CODIT 樹木腐朽區隔化：

- 第三道牆，樹木依靠活動的射線細胞抵禦腐爛，抑制腐爛橫向蔓延。這三道牆形成**反應區**。
- 第四道牆，受傷後傷口急速增生另一層特別的木質細胞,以阻擋腐爛向四周蔓延，這是**阻隔區**。第一道牆的阻隔力量最弱，第四道牆的阻隔力量最強。

Sometimes a combination of tools for trunk and roots as well.



Education is crucial for both the technician and the public





Education like Kadoorie Farms & Conservancy Association

長春社 樹木保育計劃
惜樹日 Tree Lovers Day
 齊來親親樹木!

活動詳情: <http://tree lovers.org.hk>
 查詢電話: 2372 6330 (許小姐)
 備註: 場地有限, 河上樹膠免費

未來發展 Future Development

本園致力提升樹木管理服務的專業程度, 並積極推行以下工作:
 從2005年起, 聘請註冊樹木師及專業人士, 考獲註冊樹木師及專業資格。

總結 Conclusion

樹木美化我們的環境, 但不適當的樹木管理可能對公眾安全及影響市容。樹木可以吸收二氧化碳, 改善空氣質素及提供綠蔭, 樹木為人類提供一個健康及舒適的環境, 保持樹木的健康及有利永續發展。

Finally, VCU have a choice:

修剪樹木 Pruning

請留意剪掉, 剪掉, 受感染或損壞的枝條可以有以下好處:

1. 令更多光線到達葉面
2. 增加空氣流通
3. 增加樹木在強風中的穩定性
4. 令健康的樹木恢復生機

樹木管理人員應注意「自然」的技巧, 確保確保人性和財產的安全

1. slow rate penetration during leaves surface
2. increasing air circulation
3. maintaining structural stability of tree in strong wind
4. integrating trees in poor health
5. removing branches that would be likely to hit targets if necessary to ensure safety

正確修剪方法 Natural Target Pruning

樹木管理人員應注意樹木上天然, 然後以手剪修剪分枝, 並以繩綁住樹枝, 然後以「刀法」的步驟修剪。

Can't? Use a chainsaw to cut trees with fire-resistant bands to remove branches with handles and chainsaw. Branches have to be cut in the "3-shape method".

正確修剪方法 Correct Pruning Method

樹木管理人員應注意樹木上天然, 然後以手剪修剪分枝, 並以繩綁住樹枝, 然後以「刀法」的步驟修剪。

不正確修剪方法 Incorrect Pruning Method

樹木管理人員應注意樹木上天然, 然後以手剪修剪分枝, 並以繩綁住樹枝, 然後以「刀法」的步驟修剪。

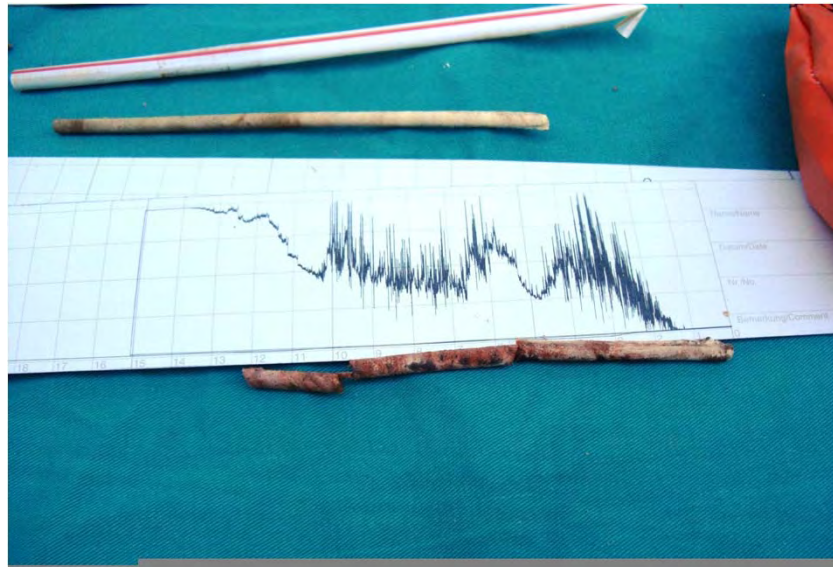
More training in modern Arboriculture Practices
from experienced experts



Training to
introduce
technical
instruments
for tree
analysis



Resistograph with Increment Core



Assessing trees together to understand more fully



Hands on
field
experiences



樹木攀爬者
指南
中文第一版

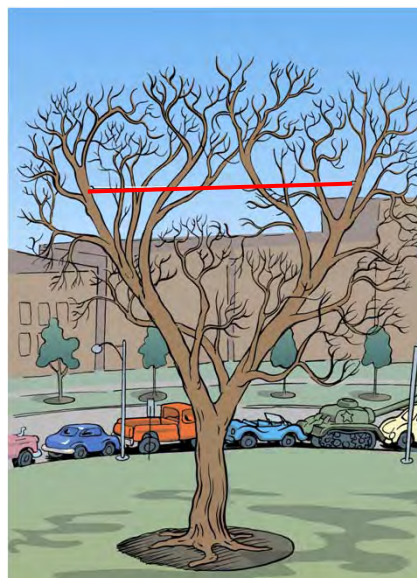


The Tree
Climbers'
Guide;
Chinese First
Edition is a
good basic
training
document
covering the
basic topics

Eight Chapters:

- Tree Biology
- Safety
- Knots
- Tree Climbing
- Pruning
- Removal
- Rigging
- Cabling

• Support Systems to Preserve Valuable Trees
But must be stable for public safety



Cable 2/3 above potential split section

Cable Installation 鋼纜安裝

一個公認的原則是安裝的鋼纜長度至少是從不牢固的接合點到樹幹末端距離的三分之二。

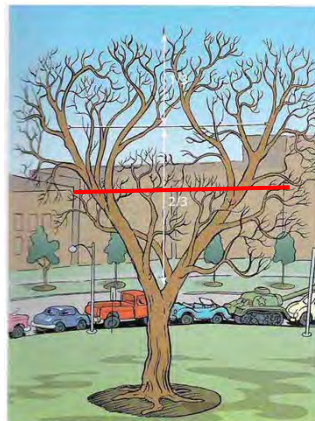


FIGURE 8.20 Cables should be installed at least two-thirds the distance from the crotch to the branch tips.

“直接越過”是指鋼纜垂直于（成90度）通過樹樑中心點的假想線。

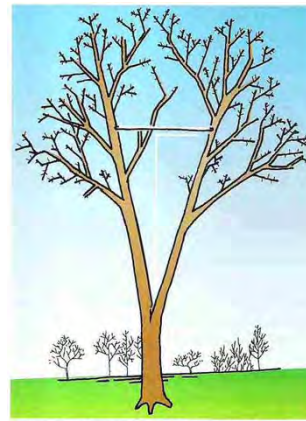


FIGURE 8.21 The cable should be installed perpendicular to (at a 90-degree angle with) an imaginary line that bisects the crotch.

Cobra System –dynamic support



Special Tree Preservation Projects



Need to train and create workers who love trees and love to climb and care for trees.

