

Possible Improvements for Asia Tree Preservation Practices Humble Suggestions

Tree Conservation and Management Seminar

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

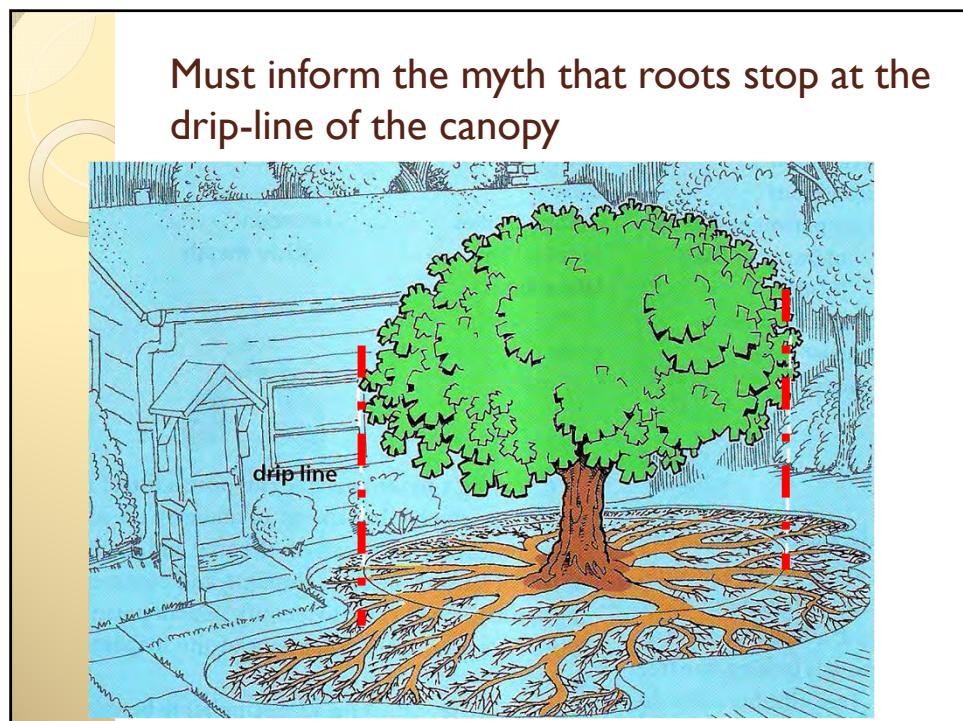
Dec. 13, 2008 Chinese University of Hong Kong (CUHK)

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

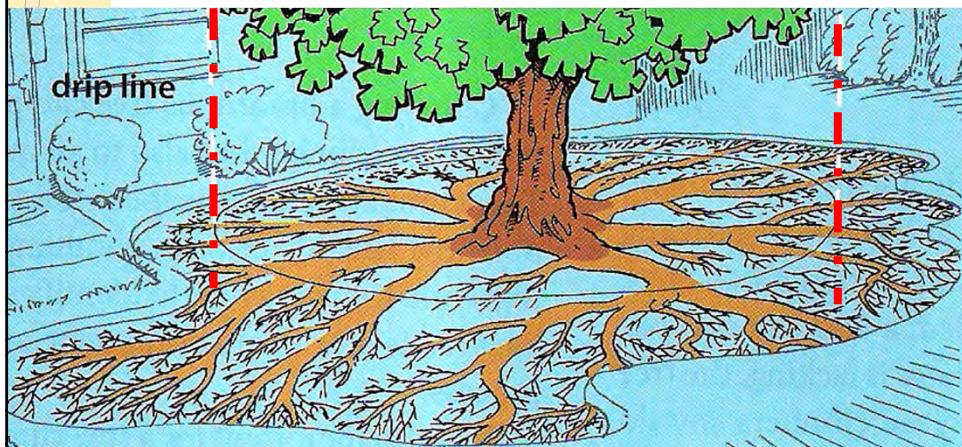
ISA Certified Arborist-Utility Specialist Tree Worker/Climber Specialist

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，這也意味著用光線制造。

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、白蘭樹及櫛柱木等品種。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。



削1/3樹葉

南昌邨大規模修樹木遭剪云衝冠。
(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.



平頂切除法



liontailing “獅尾” (式修剪)

平頂切除法指将树干从斷枝、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。

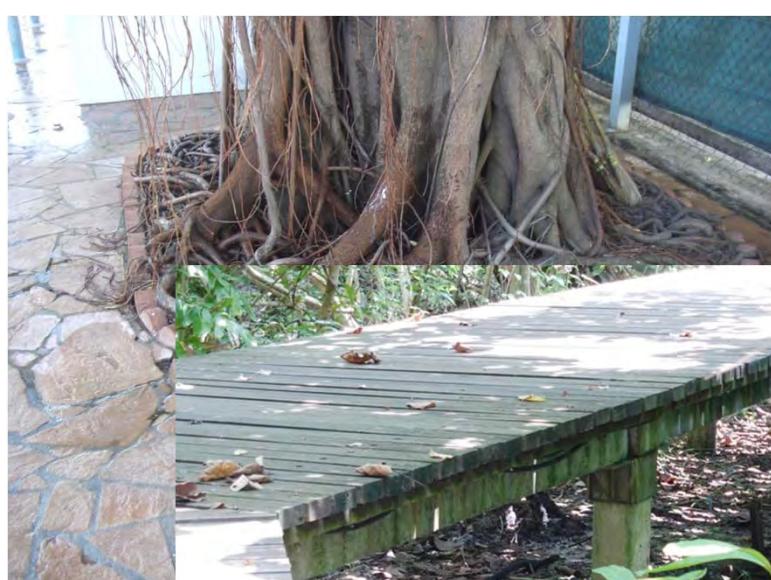
Even many OVT of Hong Kong have had the root soil space restricted often prior to 2004 when started.



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



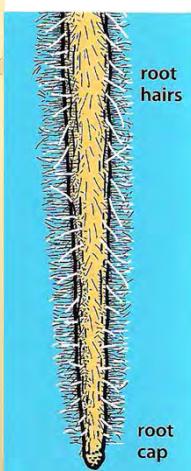
Perhaps new less harmful surfaces



Some surfaces if removed could allow for more root development



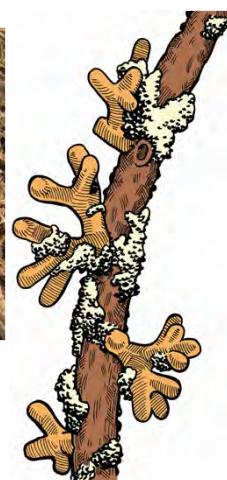
Use of mulch & mycorrhizae



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



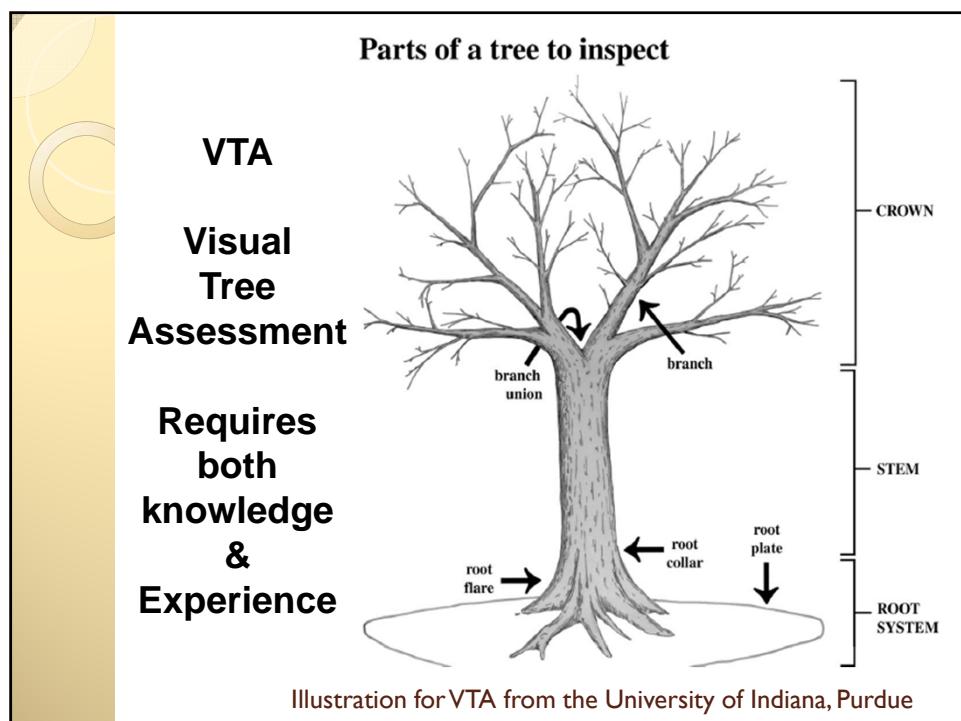
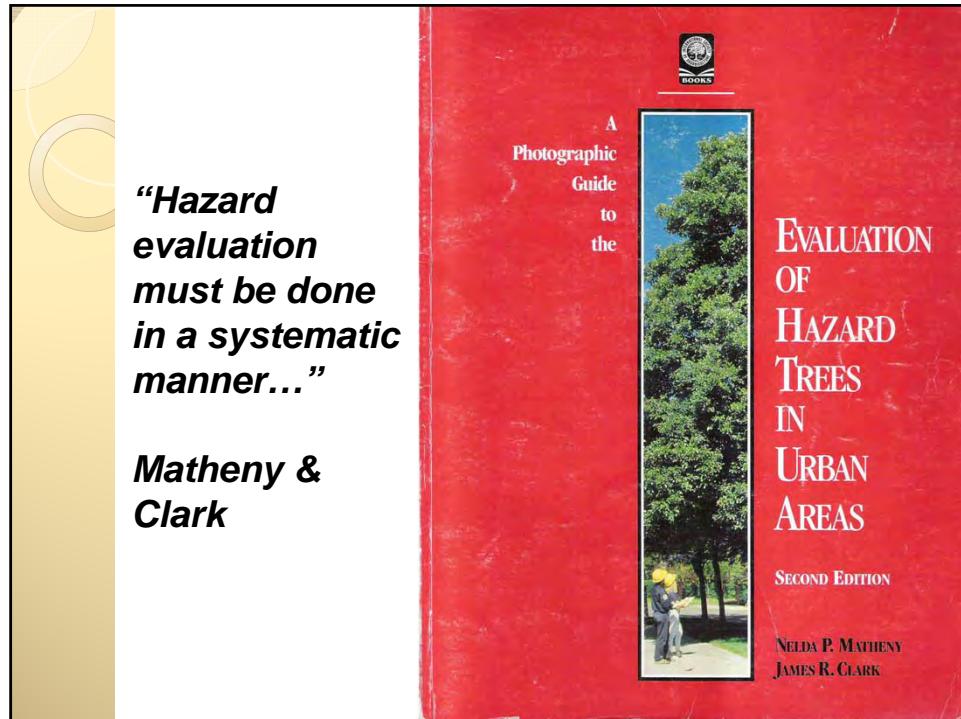
Problems hiding just below the cement

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。

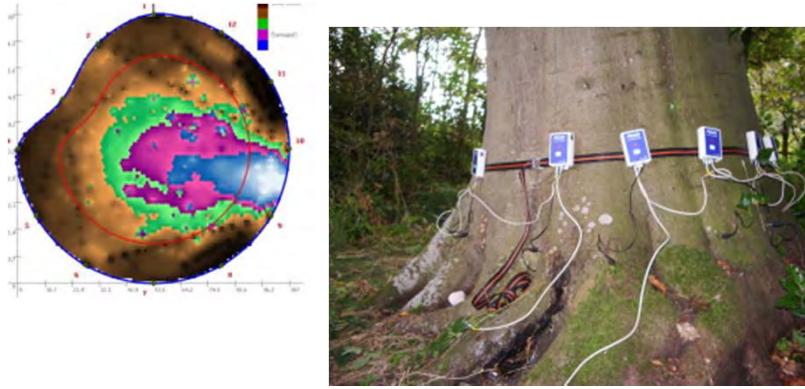
Detailed Report
of all aspects
of VTA
and
Recommendations
for Abatement

(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 Pickar 崔立賢 Managing Director
ATP Asia Tree Preservation Limited
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July 10, 2008

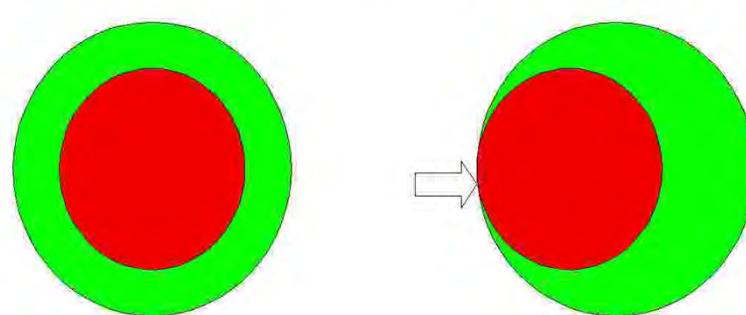
Picus Sonic Tomography Imaging



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:



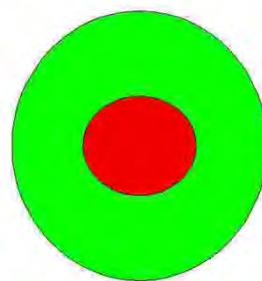
No danger

Possibly hazardous

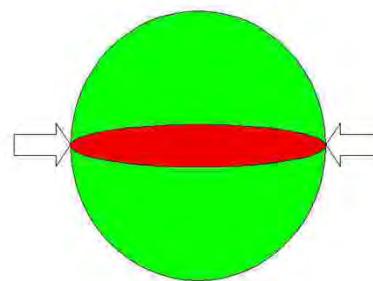
Photo-Frank Rinn

Value of tomography imaging for assessment

No danger



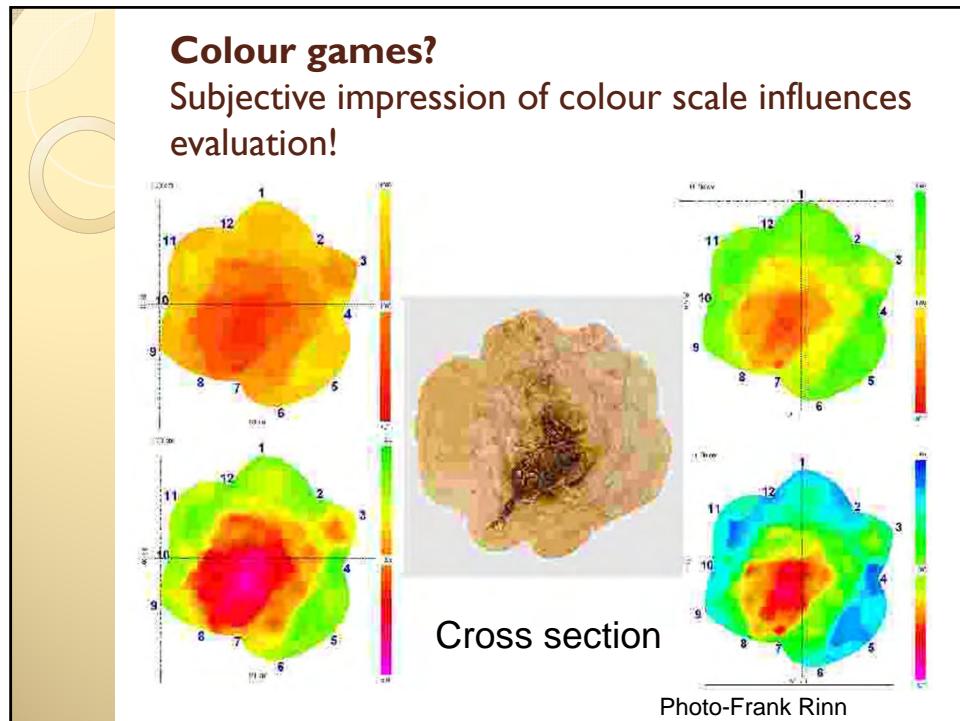
Possibly hazardous



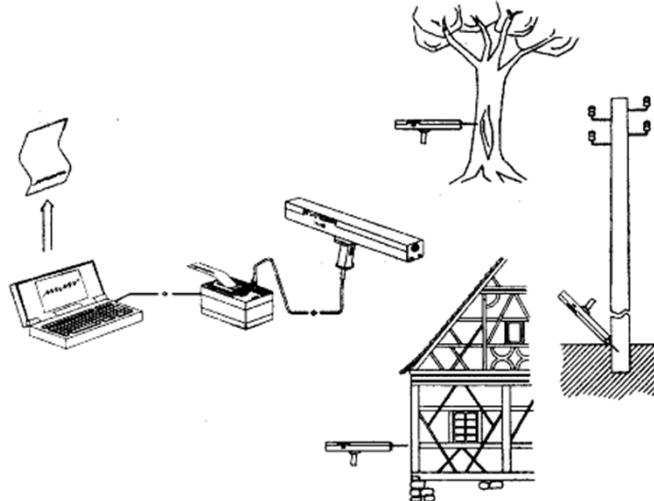
In case of an ~~exocentric~~ decay pattern the absolute area of decay is irrelevant. Form and localisation of decay is of much more importance. The trunk will always break at its weakest points.

The Arbortom from Rinntech

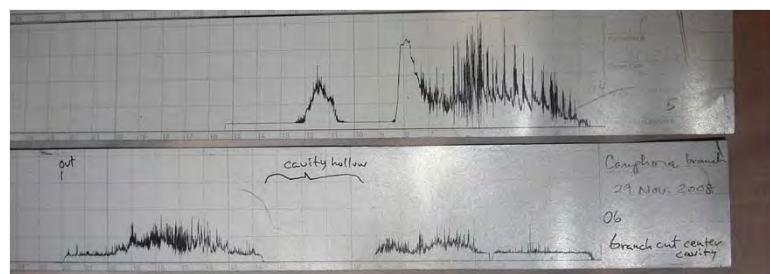
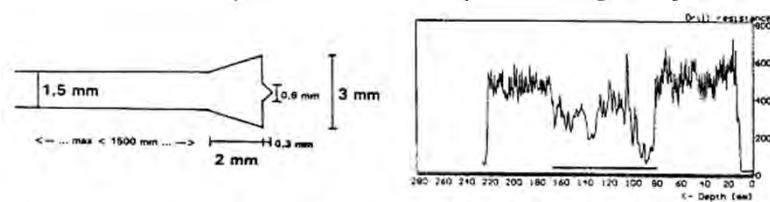




The Resistograph for measuring tree wood density by drilling



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

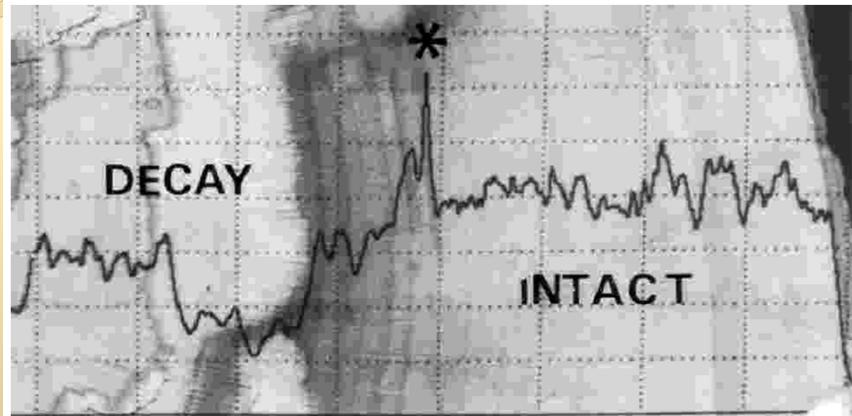


Photo-Frank Rinn

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

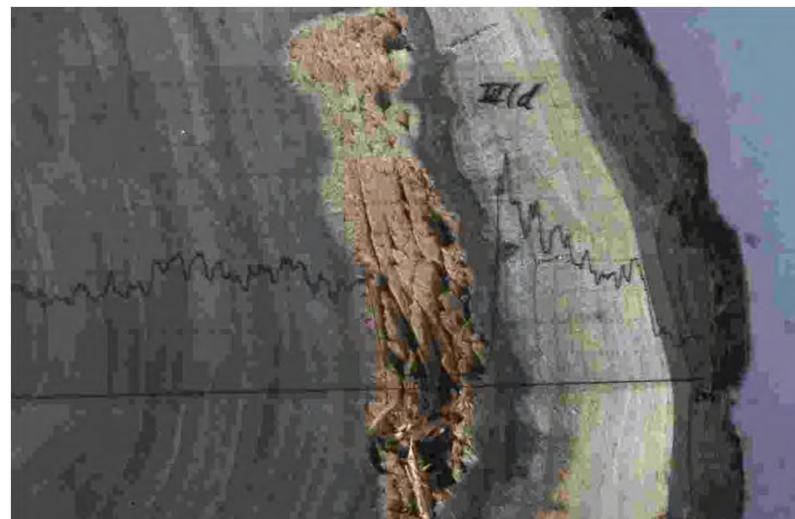


Photo-Frank Rinn

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

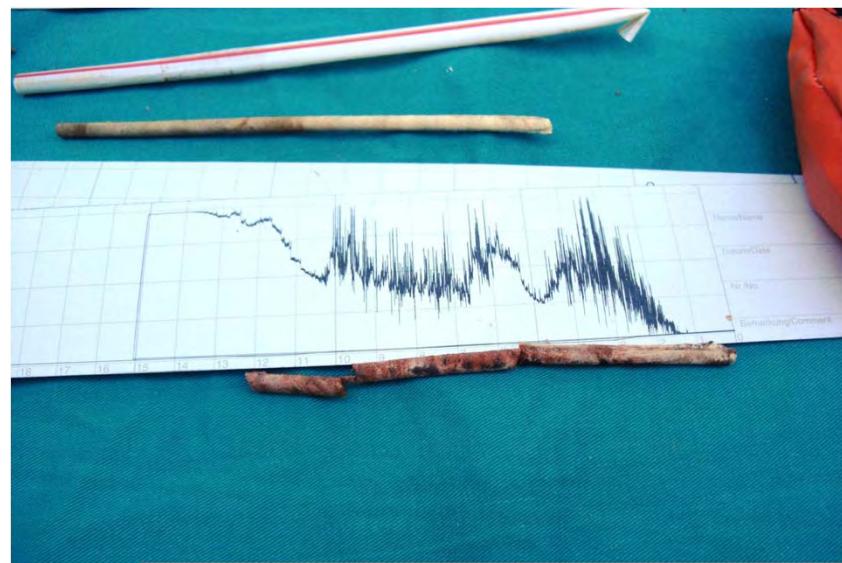
More training in modern Arboriculture Practices
from experienced experts



Training to
introduce
technical
instruments
for tree
analysis



Resistograph with Increment Core



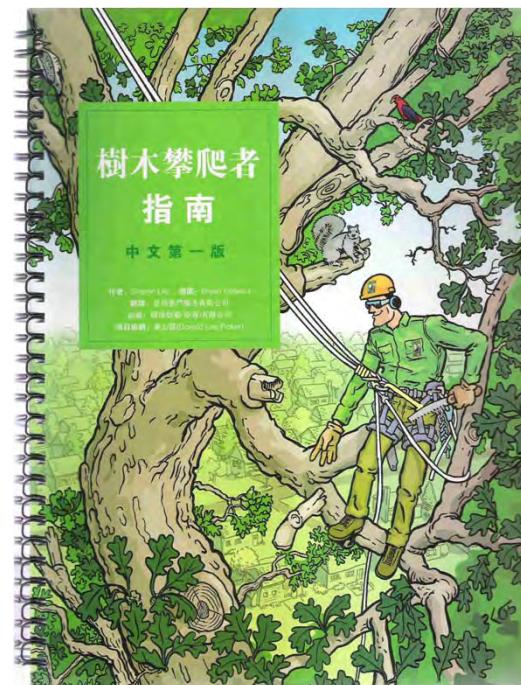
Assessing trees together to understand more fully



Hands on
field
experiences



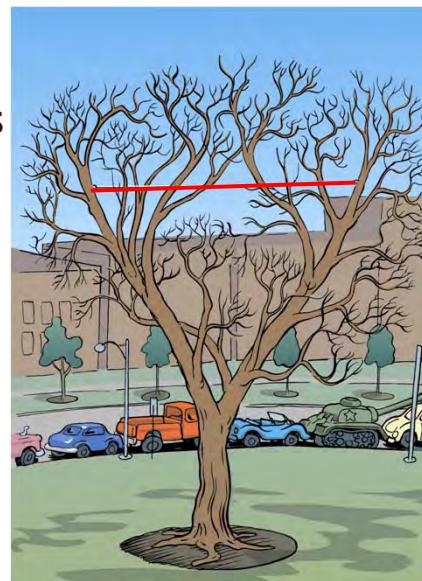
The Tree
Climbers'
Guide;
Chinese First
Edition is a
good basic
training
document
covering the
basic topics



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。

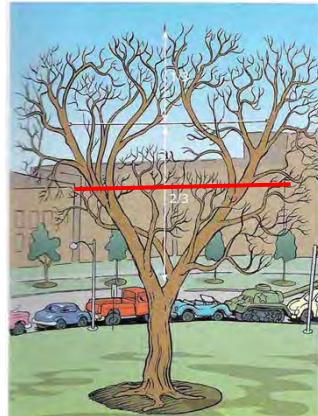


FIGURE 8.20 Cables should be installed at least two-thirds the distance from the crotch to the branch tips.

“直接越過”是指鋼纜垂直于（成90度）通過樹樖中心點的假想線。

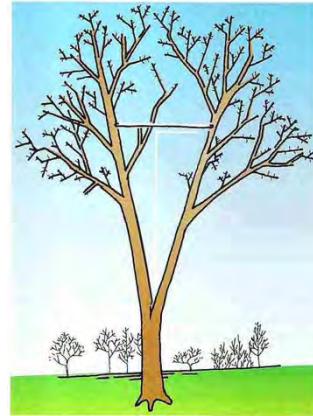


FIGURE 8.21 The cable should be installed perpendicular to (at a 90-degree angle with) an imaginary line that bisects the crotch.

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.

