Dynamic Cables

Are they the Best Option?

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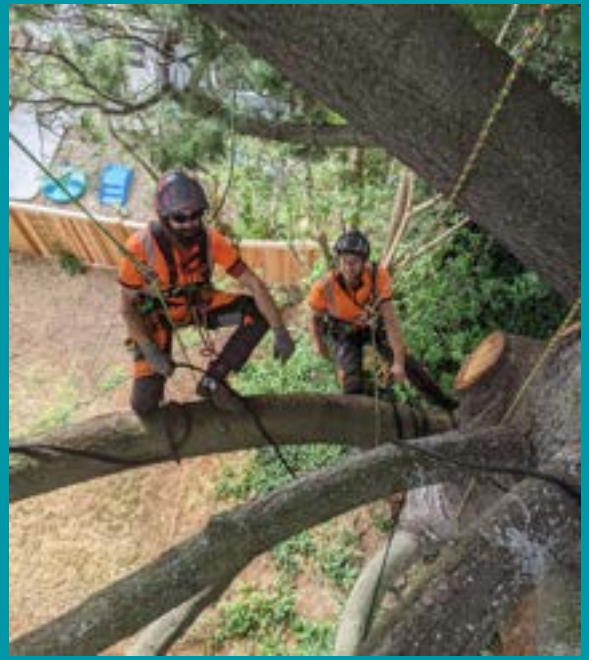
Objectives for Today

- Are dynamic cables the best solution?
  - Benefits
  - Drawbacks
- Other risk mitigation options
- ANSI Standards on cabling
- Other standards available
- Considerations for installation

Dynamic Cables

Why are they so prevalent?

- Easily upsell and prescription from practitioners and consultants alike:
  - Readily available
  - Fairly easy to install
  - Affordable upfront cost
  - Varied uses
  - They can’t hurt right?



That should hold it!

Squeezing in here…

Angling for it

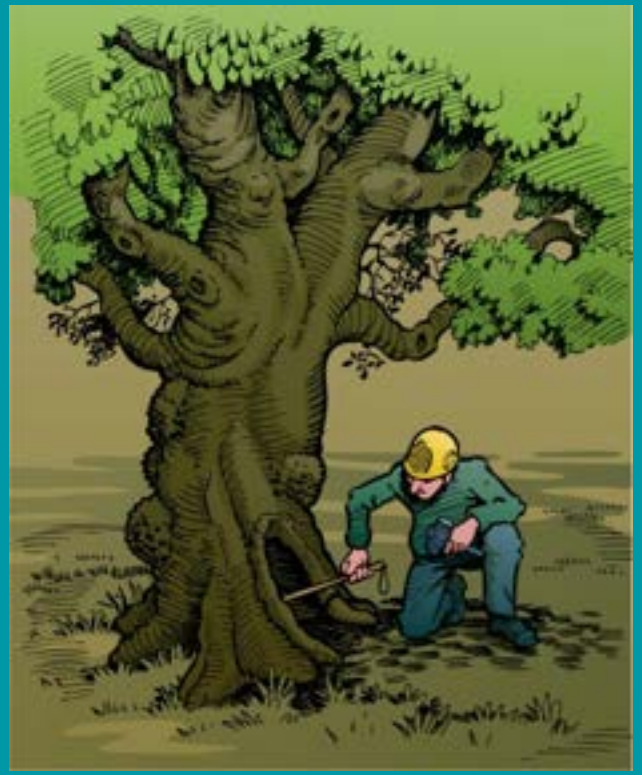
Maintenance


Cobra
4t
2021

When did I put this in?
(What year is green?)

Risk Mitigation Strategies

- What is risk mitigation?
  - What is the objective for this work?
- Common Mitigation Options:
  - Pruning
  - Static cabling
  - Bracing
  - Dynamic Cabling
  - Target management
  - Improvement of tree vigor



Pruning

Benefits

- No artificial materials in the tree
- Not permanent
- No restriction of natural tree movement

Drawbacks

- Reduced energy production for the tree
- Change to crown dynamics
- Wounding to the tree

Static Cabling (Steel)

Benefits

- Long lifespan
- Rarely adjusted (although inspection required)
- Active support (not just minimizing peak forces)
- No animal damage

Drawbacks

- Can lead to shock loading in some situations
- Require some damage to the tree during install
- More challenging to install than dynamic cables

Bracing

Benefits

- Retains dynamic movement
- Long lifespan
- Permanent installation

Drawbacks

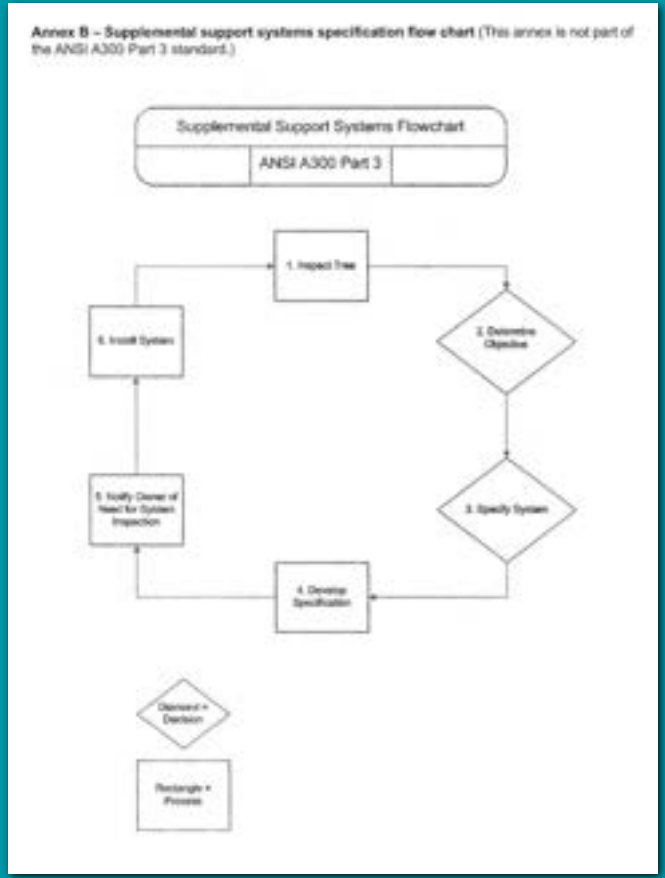
- Challenging to install
- Un-inspectable at some point
- “Invisible” to future arborists…

100% certainty that the arborist removing the tree someday hits it with a chainsaw

Bracing

ANSI A300 Part 3
Guide to Cabling

- Provides objectives for installing systems
  - No specifics on if pruning or cabling preferred
- Largely focused on static cabling
  - Most dynamic installation and maintenance guidelines come from manufacturers
- Provides limited guidance for ongoing inspection and maintenance
- Not engaging to read (zzz…)



ANSI A300 Part 3
Guide to Cabling (cont)

- Install cable anchors at 2/3rd height of the branch or leader, from the union to be supported
  - Does not specify static or dynamic cabling
- ANSI provides limited applications where cabling is not to be used

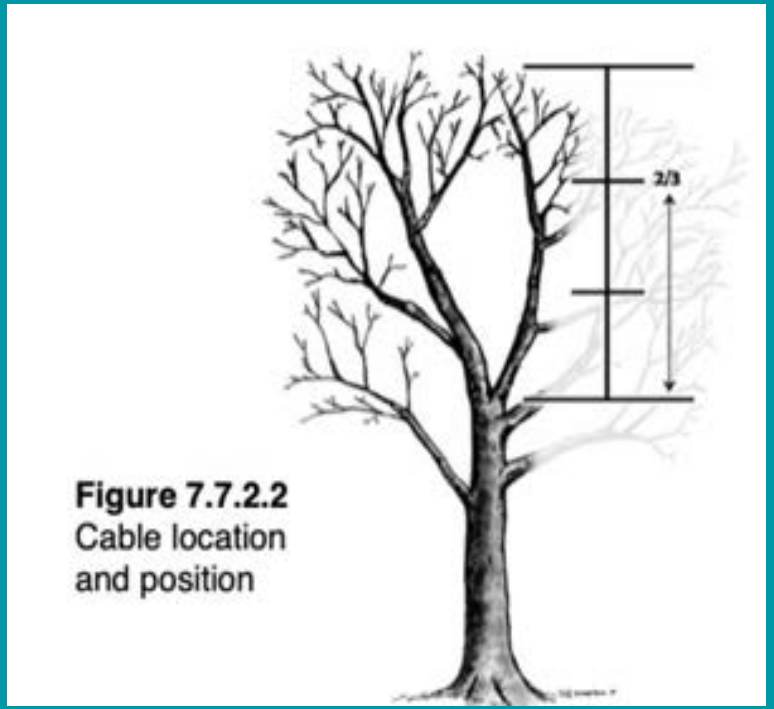
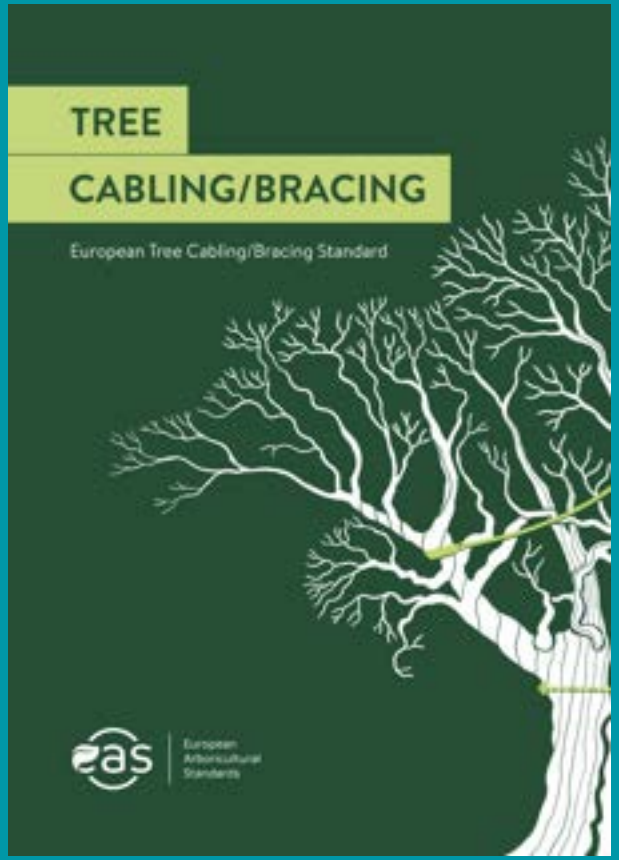


Figure 7.7.2.2
Cable location and position

European Standards
Cabling/Bracing

- Considers cabling from a holistic perspective:
  - Should we cable in the given scenario? What are the downsides of cabling vs other mitigation opinions (3.1.3-3.1.4)?
  - Would the pruning compromise structure (3.3.6)?
- FREE online



European Standards
Cabling/Bracing (cont)

What is the integrated plan for risk management (3.1.6)?

- All tree stabilisation systems **must be** recorded and monitored, with regular inspection, maintenance or replacement.
- Record keeping is part of the process
- If the tree manager doesn't have capacity to do maintenance we shouldn't consider it

European Standards
Cabling/Bracing (cont)

- Steel cables **must be** installed in the static zone lower half of the crown, preferably as close to the junction as possible (4.5.3).
- Dynamic cables **must be** installed in the dynamic zone

Figure 5: Height of installation

Note: In Europe must = shall. This is not in conflict with ANSI since ANSI uses “should”

Static Cabling in Static Zone
for the Practitioner

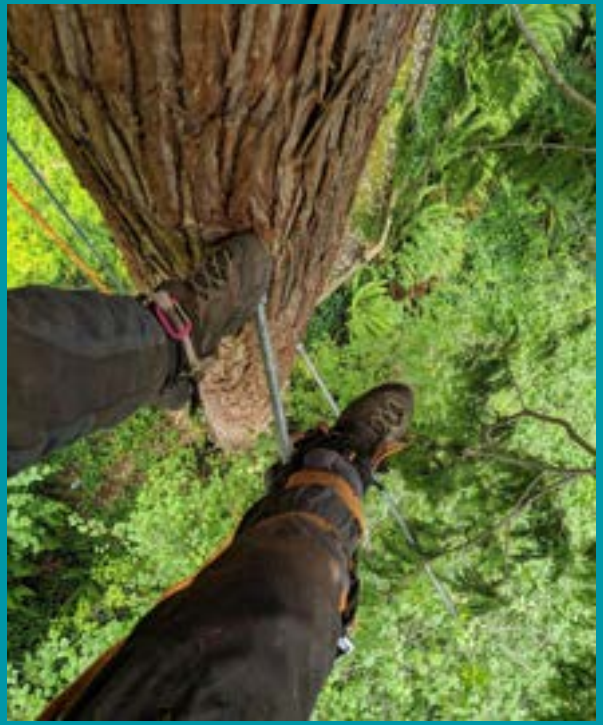
- Challenges of installation
  - Higher degree of arborist expertise required
  - More equipment required (drills, bits, cable pullers, metal cutting tools)
- Properly tensioning cables in the static zone can be a challenge when using certain connection types (wedge grip, rigguy)

Bracing Considerations
for the Practitioner

Bracing rods can be very challenging to install especially in the canopy

- Multiple sizes (diameters) of rod are required based on ANSI specifications
- Many different drill bit types and sizes required. Specialty drills too

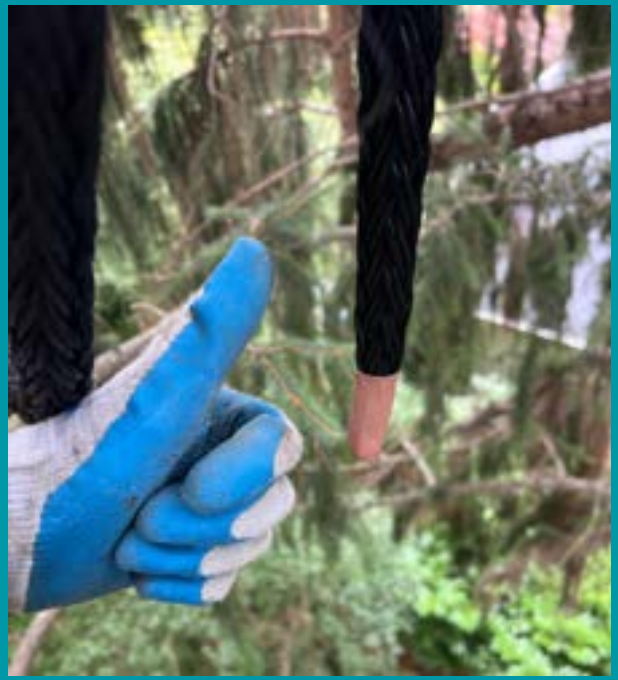
Bracing Considerations
for the Practitioner



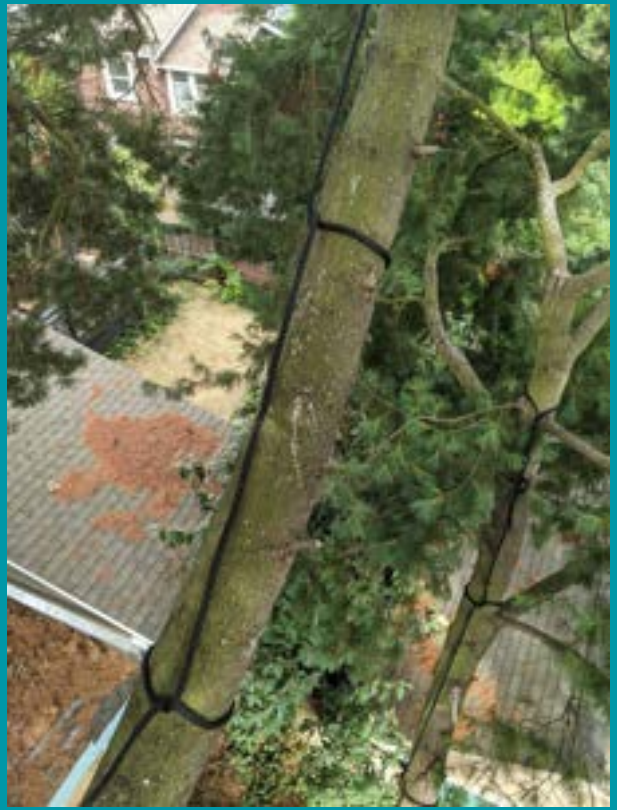
Dynamic Cables
Good Use Cases

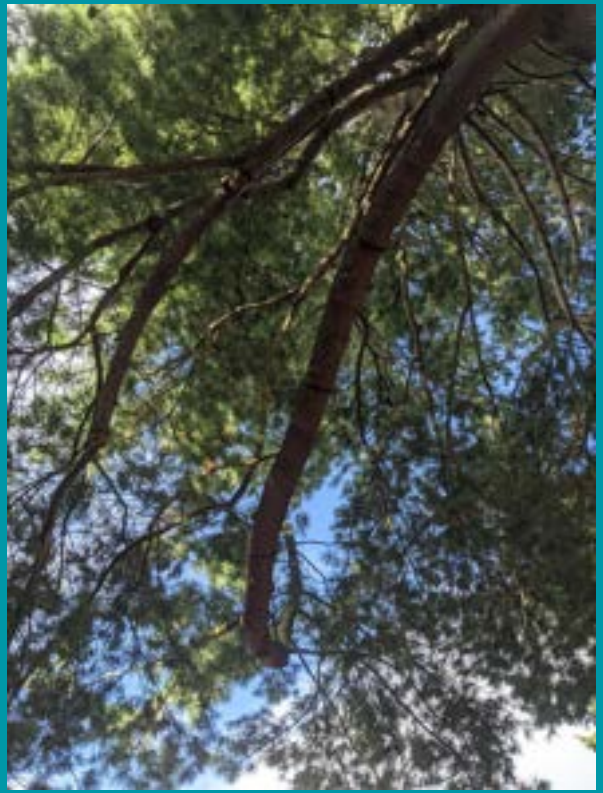
Sometimes they are the only reasonable option

- No appropriate installation point for a static system (trunk decay)
- Maximum maintenance of dynamic tree movement
- Can be used as part of a “catch system”
- May be used in combination with other support systems
- Client ability to perform required maintenance is critical



Dynamic Cables
Good Use Cases





Is the Future Dynamic Steel Cables???

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Risk Management – Takeaways

- Cabling is one of many options for managing risk
- ANSI Standards provide some guidance on objectives and European Standards help consider/hone management plan
- Cabling is a specialty skill set many arborists do not possess
- Technical work requires practice and mentorship to master

Don’t forget to mulch!