A Performance Gap.

What, why and how ?

Or

The Lost Art of Tree Planting

Keith Sacre. Arboriculture and Urban Forestry Director, Barcham Trees
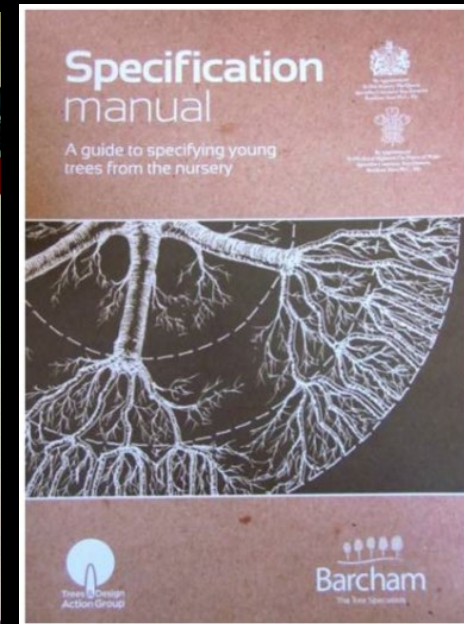
Guidance is available in abundance.
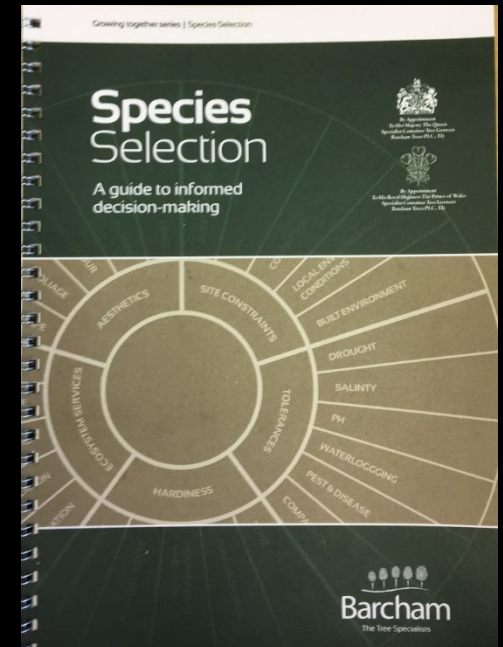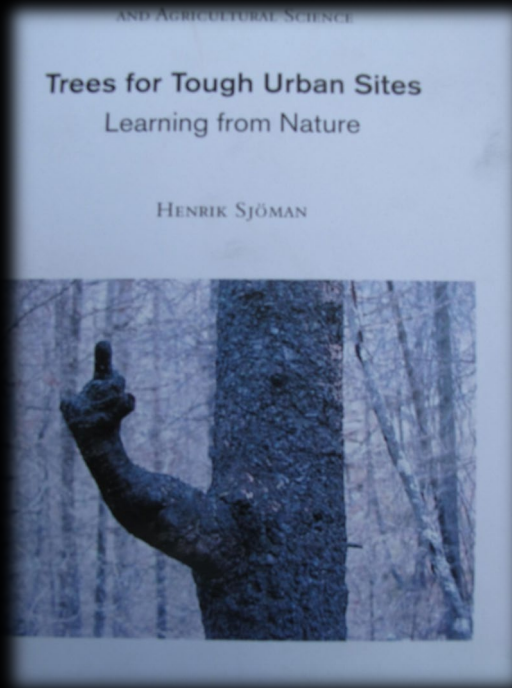
More informed and educated selection of species

Trees, Planning and Development

A Guide for Delivery

Section Two:

Planning the urban forest: how to develop a Strategy that delivers

Trees & Design Action Group

Primary Partners

RTPI Royal Town Planning Institute

RIBA Architecture.com

Landscape Institute Inspiring great places

tcpa

Institute of Chartered Foresters

Arboricultural ASSOCIATION trees.org.uk

Yet there is a gap between the theory and the practice……

A PERFORMANCE GAP

But who cares?
Or
Where is the care?

Introduction: An example below ground.

Actual planting line

Nursery line

Root flare

Hockey stick root formation

Tree was bought rootballed, note, size of cuts and lack of any evidence of transplanting

Once planted young trees are rarely maintained adequately. It is forgotten that the nursery tree is not the finished article but needs nurturing for a number of years following planting if it is to achieve longevity in the landscape.

At planting nursery trees are still in their **nappies.**

Some examples of poor or non-existent post planting maintenance.

Each of these examples will be familiar and each has a story to tell

Some more examples each with another story

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And yet more

Post planting management and maintenance is critical. Landscapes, particularly **urban landscapes are littered with young trees, which although alive, do not grow**. Trees in this condition never realise their genetic potential or deliver the benefits for which they were planted.

BS 8545.

The young tree once planted, has only partially completed its development, it is still in its infancy and needs nurturing and care before it can be considered Independent.

It has been carefully nurtured on the nursery and this nurturing needs to continue for several years after transplanting before the tree can be considered fully independent.

BS 8545.

Principle areas of post planting maintenance.

- Retention of gaseous exchange capacity.

- Irrigation

- Mulching

- Elimination of vegetative and other competition

- Prevention of machinery and other mechanical damage

- Removal of stakes, ties and other potentially damaging post planting protection as soon as appropriate.

- Structural pruning

- Nutrition.

- EACH OF THESE WILL BE LOOKED AT IN THE FOLLOWING SLIDES

Retention of gaseous exchange capacity.

Conventional retrofit trees in hard landscape. Note surface compaction a soil surface which has all the characteristics of the hard surface surrounding it.

Irrigation

Some observations:

The amount and frequency of irrigation is dependent on several factors all of which are interrelated and all of which are highly variable.

- Amount of rainfall

- Permeability of surfacing

- Daily temperatures and wind conditions

- Moisture holding capacity of the soil

- Drainage

- Size and species of tree planted

- Nursery production system.

Root growth stops in most species when the soil is reduced to 14% on an oven dry weight basis.
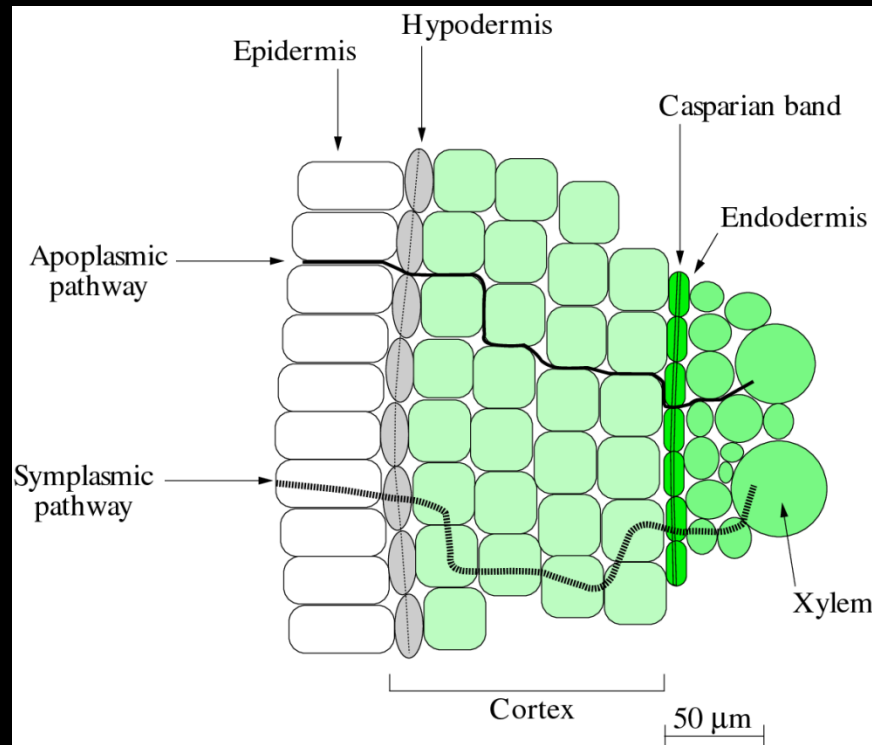
Root suberisation is accelerated in dry soil and the full capacity for root growth is not achieved until new root tips are produced.

On re-watering, even if immediately after root growth has ceased, further root growth may not begin for at least a week.
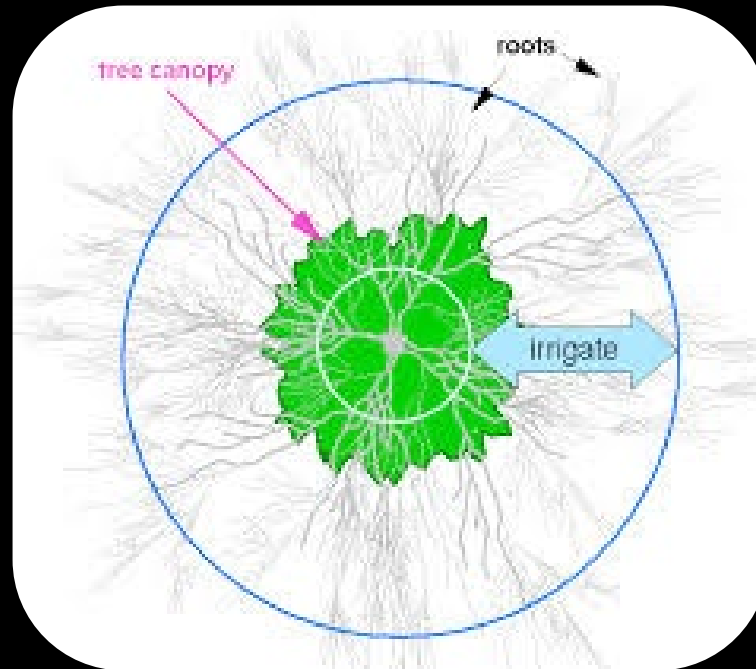
The resumption if of root growth can be delayed for as much as five weeks water is withheld for longer periods.

Water applied in excess of field capacity results at best in significant amount of water being wasted and lost as drainage as the soil cannot retain it
At worst the excess is retained at the bottom of the planting pit creating a sump, anaerobic conditions, and a zone where root activity is limited or non existent.

It is more important to water transplanted trees frequently than to apply large volumes of water infrequently.
A single application of a large volume of water does not compensate for irrigating infrequently

Mulching
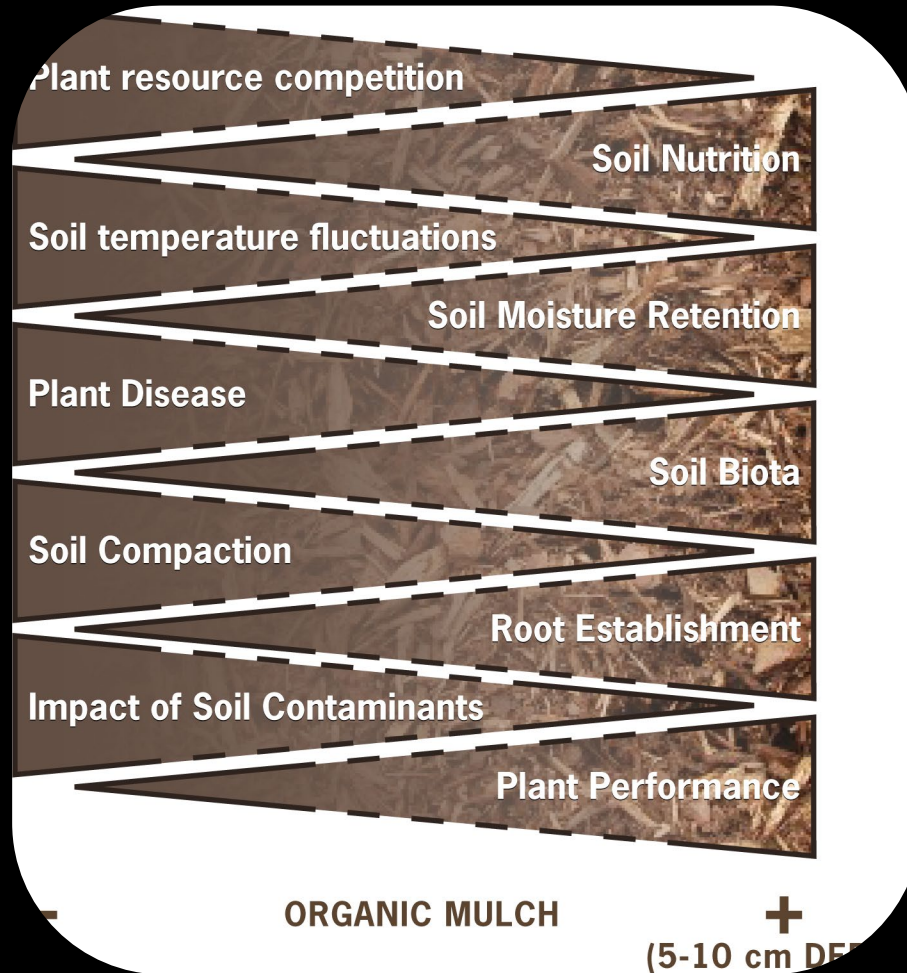
Benefits:

- Mitigate compaction
- Minimize fluctuations in soil temperature and soil moisture
- Weed suppression
- Soil nutritional enrichment
- Regulation of pH and cation exchange capacity
- Pathogen suppression
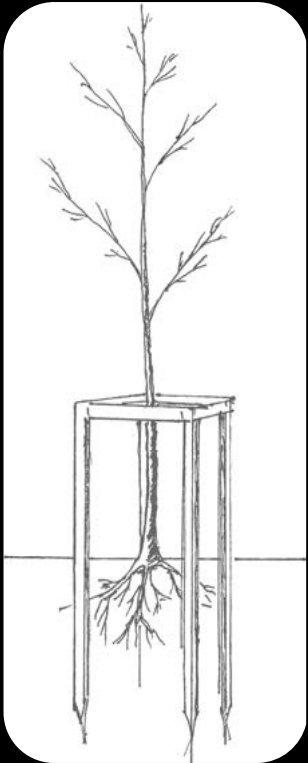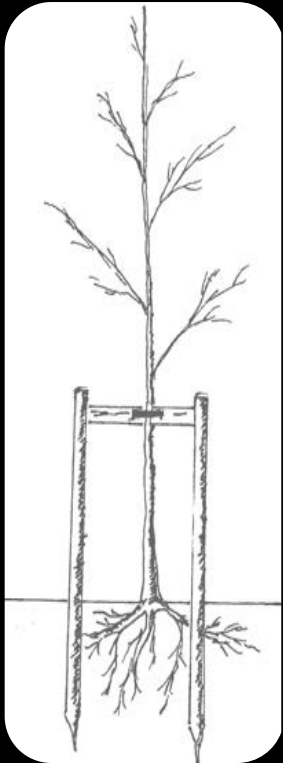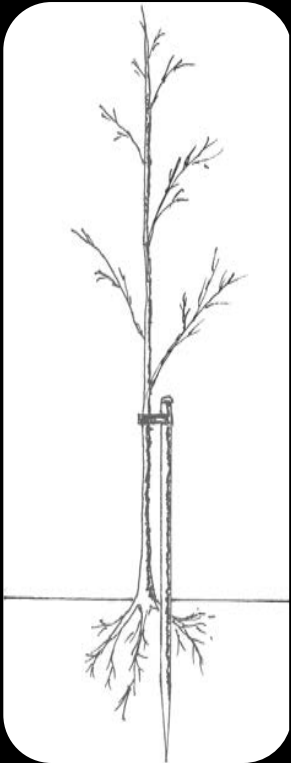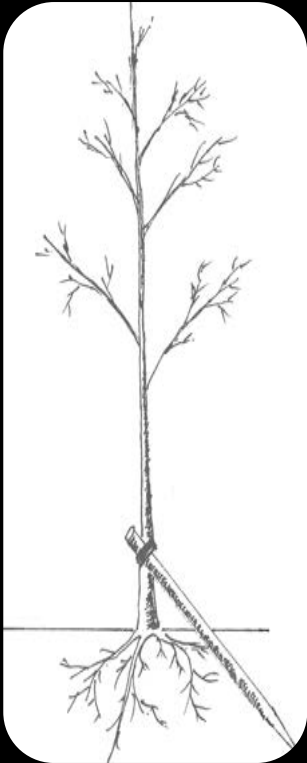- Increase in soil microbial activity
- Improvement in aeration

Elimination of damaging vegetative competition

Prevention of physical damage (machinery)

Staking systems

Numerous above ground methods available

Removal of support systems

It is not choice of support system or the choice of protection system, providing they achieve the objectives of their installation, but their removal once those objectives have been achieved

Failure to remove support systems or protection systems when they have served their purpose can result in the very things installed to protect the trees actually killing them.
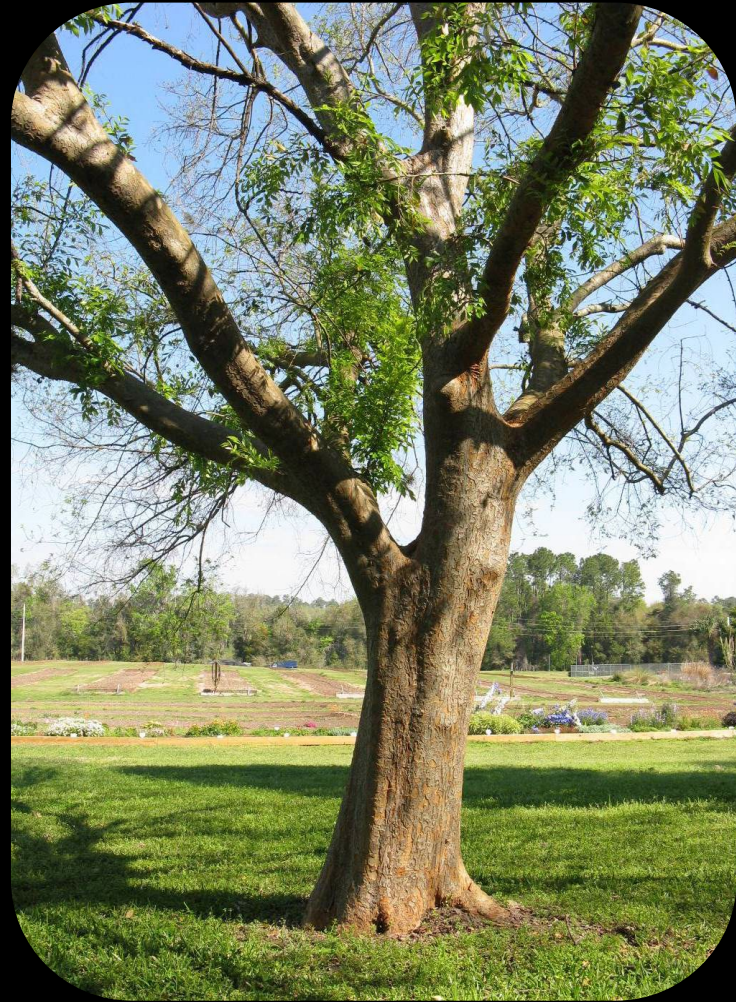
Structural pruning is all about selecting and developing the permanent branching structure of the tree. This structure is visible when the tree is young.
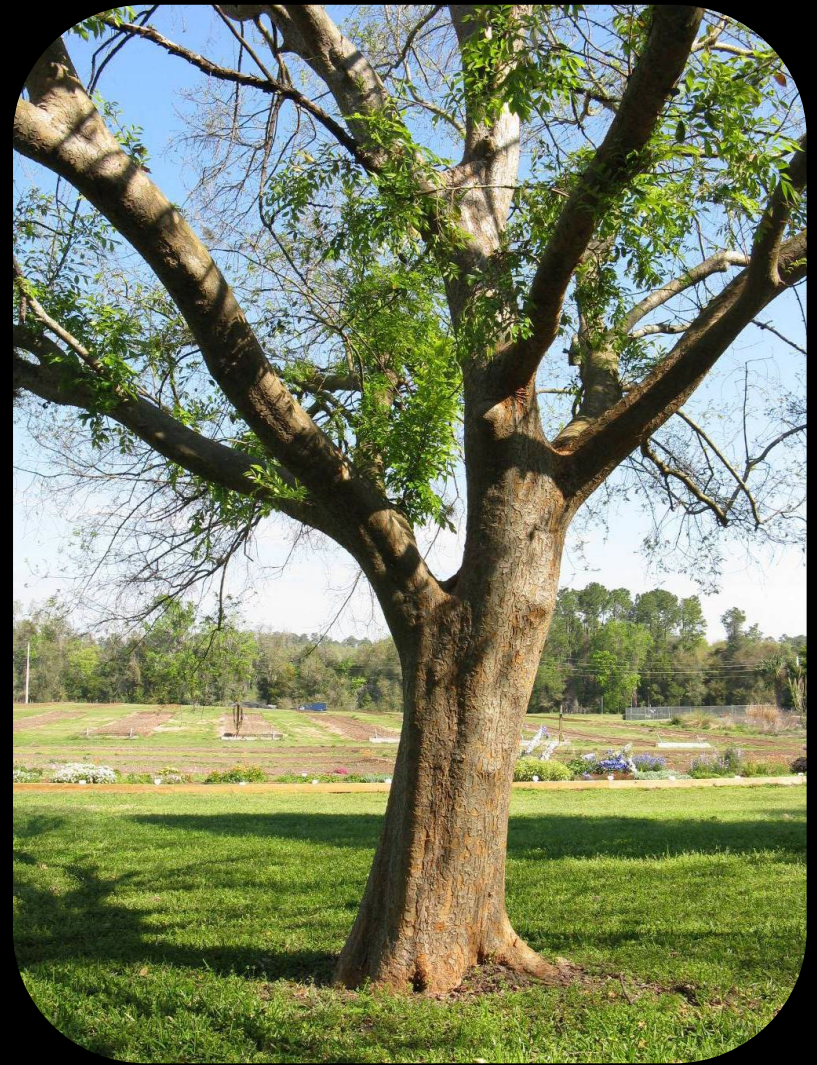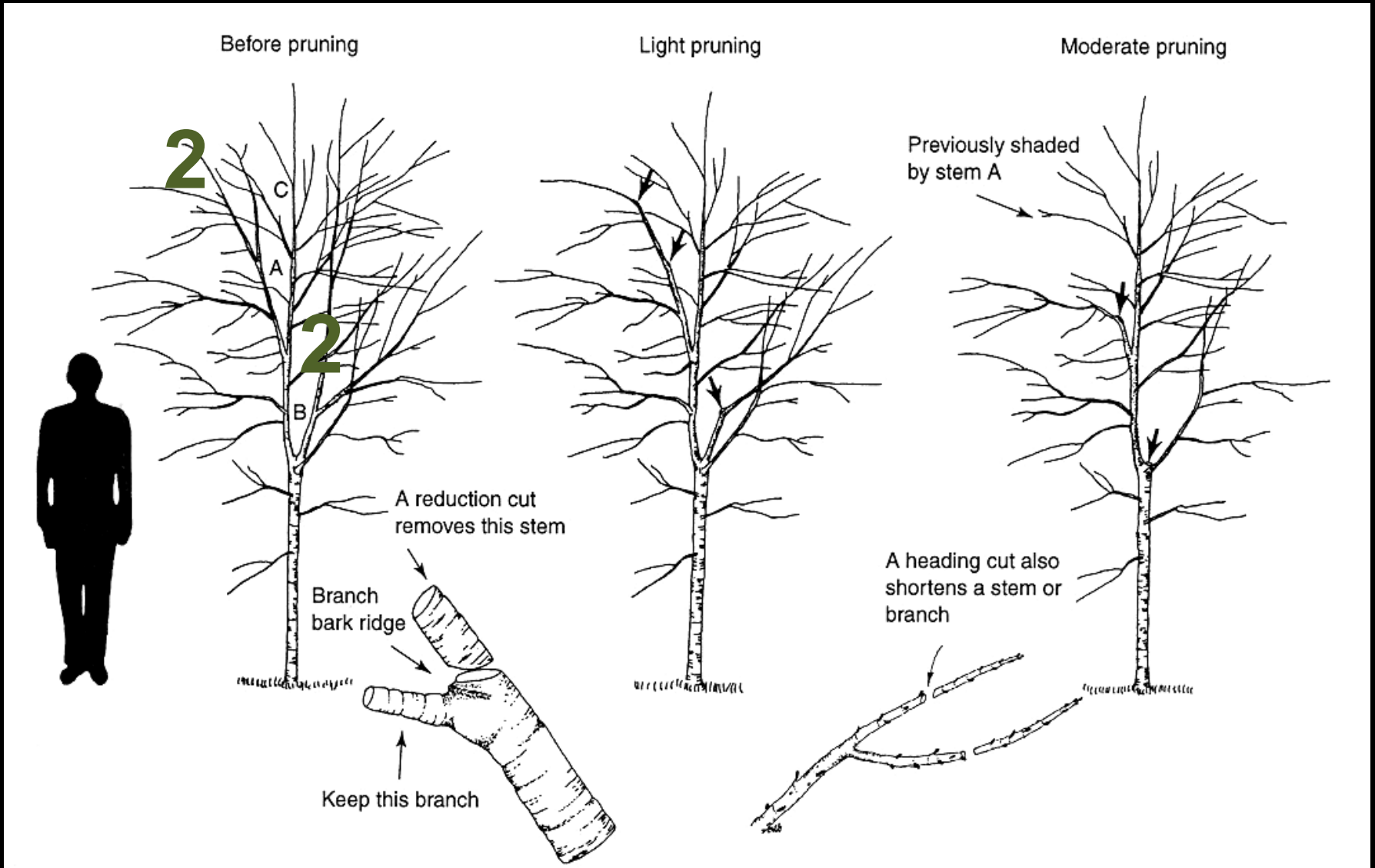
A large pruning cut then necessary if clearance becomes necessary. This scenario is predictable in the urban environment.

Competing leaders increase the chance of eventual breakage. These are also removed or subordinated during structural pruning when the tree is young.

Suppress or reduce competing stems

Before pruning

2

C

A

2

B

A reduction cut
removes this stem

Branch
bark ridge

Keep this branch

Light pruning

Moderate pruning

Previously shaded
by stem A

A heading cut also
shortens a stem or
branch

Nutrition

The question of when and if
it is necessary to fertilise young
developing trees is often asked.

There is no simple answer to this
question but any programmed
or remedial application of fertiliser
should be related to the conditions
under which the tree is growing
and may be part of a comprehensive
programme.

But we know all this,or should do given the amount of information in the public domain.

So, we perhaps come back to CARE and Have to, ask the question………….

WHO DOES? And suggest we all look in the mirror.   Thanks for listening.