TREES ARE GOOD
FOR BUSINESS

The mission of the Pacific Northwest Chapter of the International Society of Arboriculture (PNW-ISA) is to foster a greater appreciation of trees and promote the professional practice of arboriculture through education, research, and technology.

Additional copies of this publication can be obtained from the Pacific Northwest Chapter of the International Society of Arboriculture.

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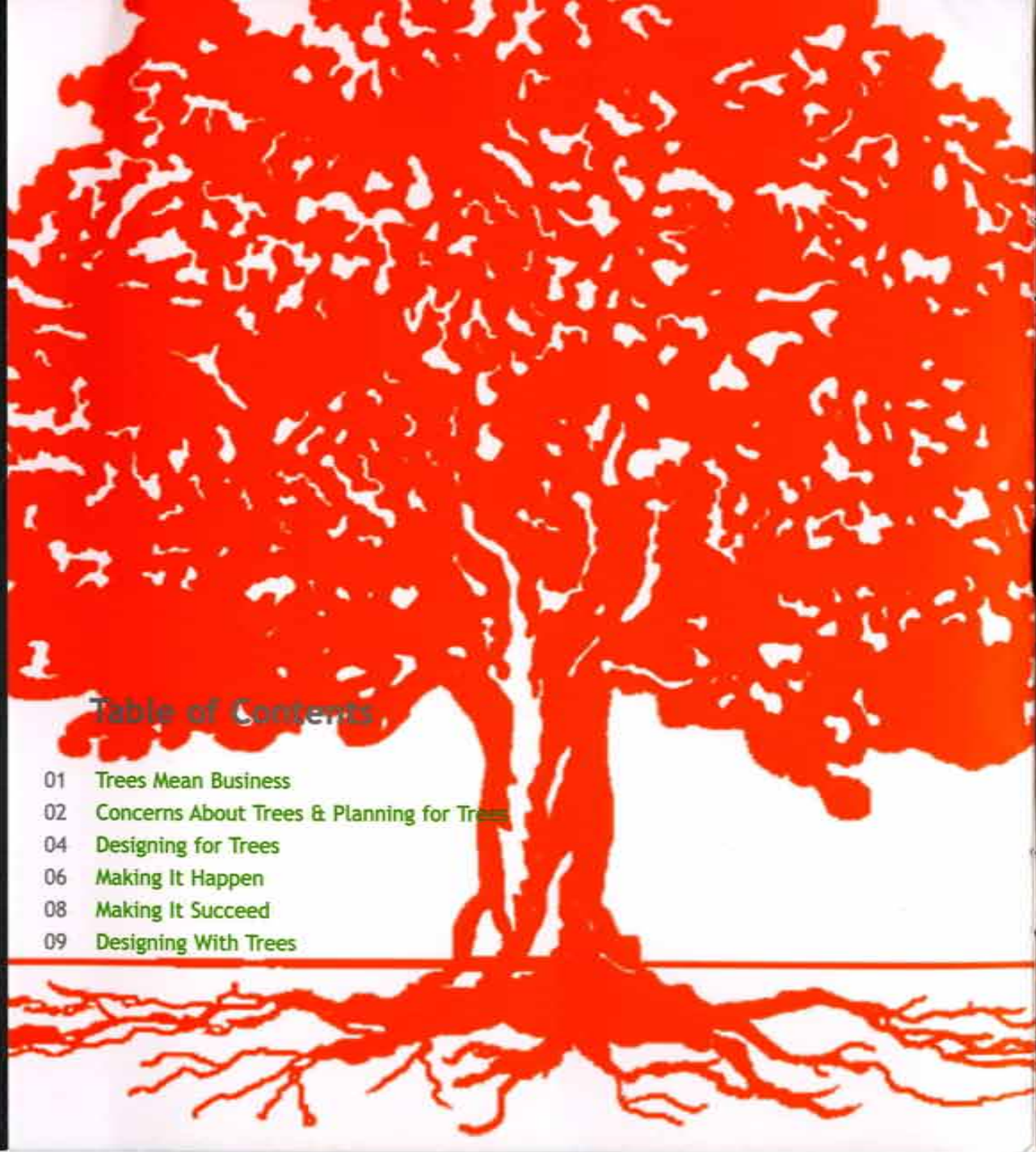


Table of Contents

01 Trees Mean Business
02 Concerns About Trees & Planning for Trees
04 Designing for Trees
06 Making It Happen
08 Making It Succeed
09 Designing With Trees

TREES MEAN BUSINESS

Central business districts are the heart and soul of communities. A walkable retail district is the place where people do their marketing and errands, seasoned with the pleasures of a fresh baked pastry or a juicy bit of gossip. Today's downtown districts face many retail challenges, including giant discount stores and online or catalog purchasing. Business associations and Chambers of Commerce must plan district programs to attract and retain shoppers.

Trees in the streetscape are an important district improvement. Shoppers do not purchase goods and services just to meet needs. Many shoppers pursue positive experiences while shopping; the streetscape is an important part of creating a welcoming, interesting shopping place.

This brochure provides information about how to use trees to improve your shopping district. Learn to plan for trees, plant trees, and manage trees over time to get the most benefits. What are the benefits? Read on to learn more!

BUSINESS BENEFITS

The importance of having trees in business districts has been studied by social scientists at the University of Washington. Surveys of shoppers in cities around the US, including Washington State, have shown that:

VISUAL QUALITY - Ratings of visual preference are lower for places without trees and much higher for places with trees, particularly when large trees form a canopy over the sidewalk and street.

PLACE PERCEPTIONS - Visitors judge districts with trees as more pleasant to be in and better maintained with higher quality products and more helpful merchants.

PATRONAGE BEHAVIOR - Shoppers claim they are willing to travel more often, longer and over greater distance, and once arriving, will spend more time in a retail district having trees.

PRODUCT PRICING - People surveyed report they are willing to pay 9-12% more for goods and services in business districts with large, well-cared for trees. Visitors claim they will pay more for parking on streets with trees.

Tree Concerns & Solutions

CONCERN	SOLUTION
TREES BLOCK VIEWS OF SIGNS AND STOREFRONTS.	Co-design signs with trees. In Palo Alto, CA, businesses and a non-profit worked with the city to relax the city's sign ordinance to allow for adjustments while trees grew. Prune the canopy to open up views as trees grow larger, but don't top the canopy.
TREES COST MONEY; WHAT DO WE GET BACK?	Small investments pay off big! Initial planting and maintenance costs for small trees may be about $500. As the tree grows, it generates greater economic benefits every year - air and water quality, property value, and human health.
TREES GET INTO POWER LINES AND UNDERGROUND PIPES.	All trees are not the same. Careful choices of tree species suited to the root and canopy space available can minimize damage to utilities.
TREE ROOTS CRACK THE SIDEWALK!	Trees are living things and their roots need space to grow, as does the tree canopy. Many new technologies are available to increase root space under sidewalks and give roots more space so they don't push up paving.
TREES ARE MESSY!	Careful plant selection can reduce problems of falling flowers, fruit, and leaves. In addition, a routine maintenance program takes care of debris before it becomes a problem.
TREE UPKEEP AND MAINTENANCE IS EXPENSIVE.	Choose the right tree for the right place to reduce problems. Yearly tree care and maintenance will prevent major tree failures. As with other improvements, costs for a maintenance plan can be shared by all merchants in a district.

CONCERNS ABOUT TREES

Districts with scattered or neglected trees may not evoke positive responses from consumers. Shopper benefits are best achieved if a streetscape improvements plan includes the entire business district. Once trees are planted, ongoing maintenance is needed to assure the maximum benefit is gained from the amenities trees provide. Careful planning and maintenance of trees can prevent the nuisances that some merchants experience - such as sign visibility, debris, and sidewalk damage. Good planning creates shopper friendly places!

Many concerns about trees (see table to the left) can be addressed to minimize or even prevent annoyance and expense. Solutions exist for every concern listed. With careful planning, potential problems can be removed or reduced.

PLANNING FOR TREES

As with any district-wide improvement, a comprehensive plan will guide a tree and landscape project to a successful completion. When planned well, trees and associated plants can create a unique character or identity for a business district that will last for decades. A comprehensive plan helps garner support among community members, helps support project fundraising, and ensures the project is completed correctly the first time. The following steps are important in the planning process:

CREATE A VISION FOR THE BUSINESS DISTRICT

Developing an overall vision has a lot to do with creating and enhancing a sense of place. Envision the business district and how it will look 10 to 25 years in the future. Do large, graceful tree canopies arch over the main street? Do brightly colored leaves attract attention and admiration during autumn? Agreeing on the desired character and mood of the community can make future decisions easier, such as tree species selection and planting locations.

OUTLINE THE SHORT- AND LONG-TERM TREE INSTALLATION COSTS

Short-term costs include obtaining and planting trees. Long-term costs incurred will address the continuous care of trees and ensure their health and safety for many years. Considering all costs up front in a comprehensive budget will reduce the likelihood of budget overruns and the costly removal and replacement of trees before they reach their prime. Healthy trees are beautiful trees, admired by district visitors.

RETAIN EXISTING TREES AS PART OF THE VISION

It takes many years for a young tree to reach its potential in beauty and benefit. Including existing trees in a district's vision and plan may reduce costs and generate benefits more quickly.

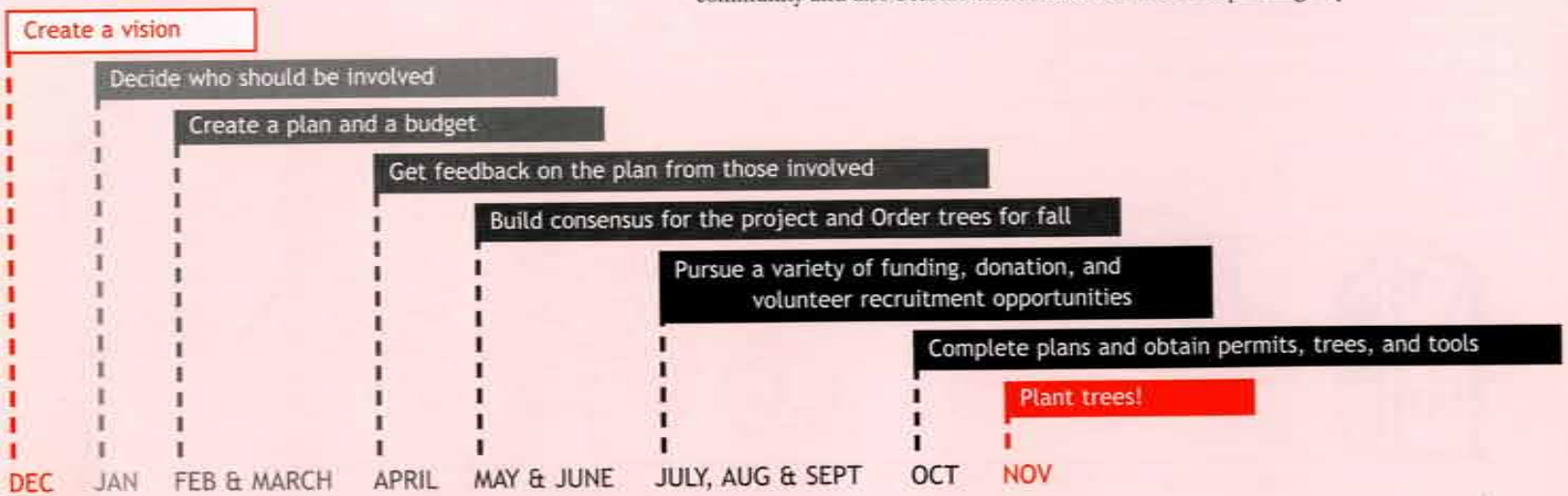
DECIDE WHO SHOULD BE INVOLVED

Gather the input and support of as many businesses and interested parties in the district as possible. Involving all stakeholders today will ensure district-wide investment in the project for the future. Professionals are available to help. A city arborist or urban forester should be involved in the planning process to contribute technical guidance in obtaining permits or selecting appropriate tree species. A landscape architect or designer can provide advice on how to use plants to create a sense of place. An official of the city planning or building department can help locate all underground utilities - including water, sewer, gas, electric, TV cable, and telephone lines. Professional help makes it more likely that the project is done right the first time!

BUILD CONSENSUS FOR THE PROJECT

District business owners, business associations, civic groups, and city officials should be involved in the planning process to ensure agreement on the project purposes and actions. Use a variety of outreach methods to involve more people. Assess the planning participants' resources, which may include valuable financial, technical, and volunteer support for the project. Supporters of the project will act as champions in the community and also become enthusiastic volunteers on planting day.

Planning Process Timeline



PURSUE A VARIETY OF FUNDING AND DONATION OPTIONS

Contact a variety of public and private organizations and other businesses in the community and city when seeking funding support. Non-profit organizations may be able to provide financial grant opportunities or volunteers on planting day. City or state government grants may be available to provide funding for the purchase and installation of trees. Consult your city arborist or urban forester for local opportunities. Ask private nurseries to donate trees and tools in exchange for advertising on t-shirts or in a neighborhood newsletter. Be creative when investigating sources of support, and don't be afraid to ask!

COMPLETE DRAWINGS AND PLANS AND OBTAIN PERMITS, TREES, AND TOOLS

Drawings or computer pictures of the streetscape and plans should be produced. They will be extremely helpful when approaching sponsors for donations or grants. Plans are useful when obtaining the necessary permits for the project from the city government. The plans, including the species and number of trees, will also be necessary in calculating the right amount of planting material and the necessary tools.

DESIGNING FOR TREES

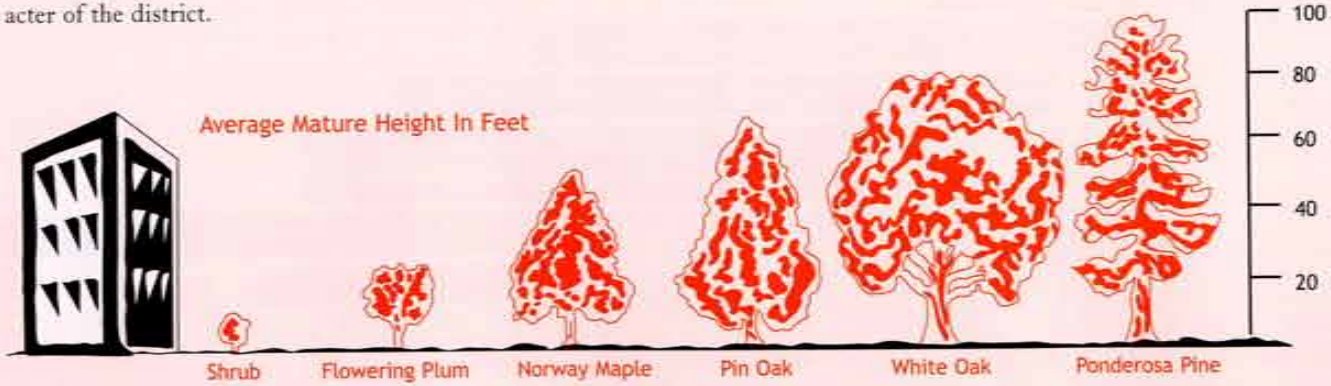
When designing for trees, remember that planting locations being selected today need to be suited to the growing needs of trees for years to come. Healthy trees in urban environments can live to be over 40 years old. In the design process, it is important to consider space, location, tree species, and available resources to ensure healthy trees and attain the desired character of the district.

PLANT SELECTION

Trees vary dramatically in size, shape, and growth patterns, as well as soil, sun, and water requirements. Different trees require different planting conditions, placement, and care. When selecting trees for the district, consider the local site conditions, the city arborist's list of local or recommended species for the area, and trees with characteristics that fit the vision developed in the planning process. Tree professionals will commonly refer to this as choosing the "right tree for the right place."

Native species should be considered, because they can be well accustomed to the growing conditions in the region. For example, in drier areas, some native species may need less watering, because they are more tolerant of dry conditions. Native trees are more likely to be resistant to regional tree diseases as well. They can also provide shoppers with a connection to familiar and interesting local nature.

Many species have unique characteristics that may or may not make them a good fit for street plantings. For example, some species of trees are very resistant to air pollution which may make them ideal for a parking lot installation. A tree that produces lots of fruits or seeds would not be appropriate for a sidewalk planting. Consider the average height of business signage in the district, and choose a species that is least likely to inhibit sign visibility.



TREES AND SIGNS

Reduced visibility of signs and storefronts is the single greatest concern merchants have about trees. Extra attention to design is needed to prevent tree and sign conflicts. Here are a few general principles.

First is tree choice. Trees with a more open and airy canopy, rather than a thick, dense canopy will permit views. Tree species having a mature height that is higher

or lower than sign heights are good choices. A pruning program must be planned so that lower tree branches are pruned when appropriate to raise the canopy above sign heights and thin canopy density. Topping is not the answer; topping causes a flush of new branch and leaf growth that becomes a more dense visual obstruction. Finally, co-design of sidewalk trees and signs can address signage height, size, colors, and compatibility. Traffic calming may be another solution, as drivers moving through a business district at high speed may not notice signs no matter what materials are around them.

HOW A TREE GROWS

NO

YES

GROWING SPACES

Typically, a city will have recommended or mandatory planting space requirements for trees. Check with a city arborist or urban forester for local guidelines or regulations. Trees do best when they are at least 12 feet apart and in planting pits, or tree boxes, that are typically 4 feet wide and 9 feet long. Longer planting trenches provide even more root space. Trees have been planted in pits as small as 3 feet square; such trees will not remain healthy and may cause concerns such as sidewalk buckling. If there is not enough space to attain the recommended tree box dimensions, consider planting a species that is more compact and needs less growing space. In all areas, be aware of overhead utility wires and buildings. If planting in a parking lot, extended tree lawns are preferable to tree boxes, which are more applicable for sidewalk plantings.

SOILS

Adequate soil volume for tree roots is very important - the more, the better! Urban soils are notorious for being very compacted, which reduces the amount of oxygen and water available to the tree roots. Water or oxygen starved trees become stressed and are more susceptible to disease. What can be done? First, create the largest planting area possible for the tree. New technologies, such as structural soils, are making it possible to extend a tree's root zone under sidewalk pavements without damaging concrete.

Second, check the drainage of the soil where you will plant the tree. If water drains very slowly, you may wish to plant trees that tolerate having more water around their roots or try mixing mulch into the soil to reduce compaction.

SIDEWALKS

Sidewalks are the front yard of shops! Curb appeal starts at the sidewalk. Sidewalks serve many functions including pedestrian movement, ADA accessibility, and outdoor seating. New technologies are making it easier to integrate such functions with the needs of trees, particularly below ground root space. Pervious pavers can support foot traffic and allow air and water to seep into soils below. Structural soils are soil and gravel mixes that provide a support base for a concrete slab while providing micro-spaces for root growth. Rubber sidewalks involve placing pre-formed rubber slabs over soils and root spaces. With any materials choice, it is important that adequate soil surface be left around the base of the tree.

TREE PROTECTION

If the tree is grown and handled properly at the nursery, staking for support is not necessary in most landscape situations. However, protective staking may be needed on sites where lawn mower damage, vandalism, or windy conditions are concerns.

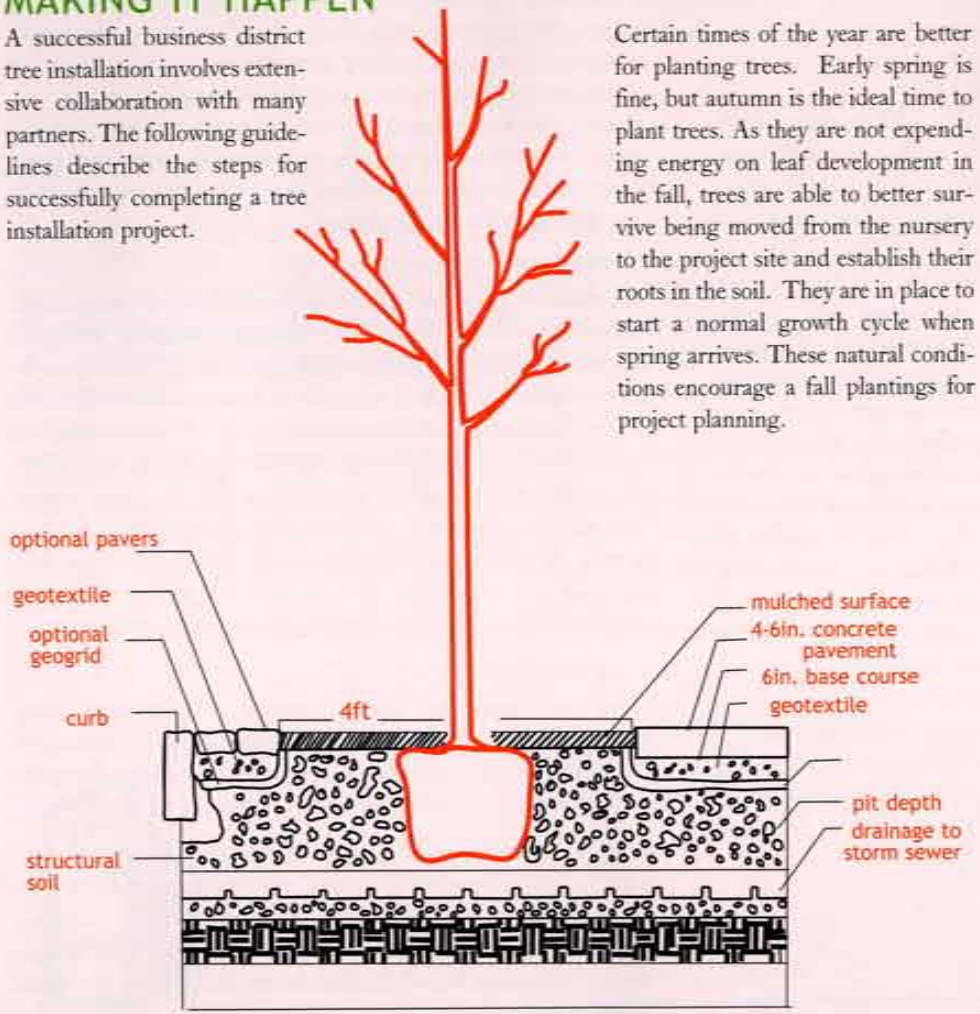
Periodic mulching (once a year) is the best way to maintain healthy, non-compacted soil and provide nutrients to roots. Accumulated mulch should be no more than 4 inches deep; any deeper and tree roots will be smothered. In many places though, the root zone must be protected as the tree pit becomes part of the sidewalk space.

Consider pavers and grates. They help protect the soil next to the tree from compaction and permit some water to seep into soils. Brick pavers and other special details can also be interesting visual elements in the streetscape and add to the unique character of the district. If a device is used to protect the tree pit opening, plan to enlarge the opening as the tree ages and the trunk widens.

MAKING IT HAPPEN

A successful business district tree installation involves extensive collaboration with many partners. The following guidelines describe the steps for successfully completing a tree installation project.

Certain times of the year are better for planting trees. Early spring is fine, but autumn is the ideal time to plant trees. As they are not expending energy on leaf development in the fall, trees are able to better survive being moved from the nursery to the project site and establish their roots in the soil. They are in place to start a normal growth cycle when spring arrives. These natural conditions encourage a fall plantings for project planning.



IMPLEMENTATION

Planting in the city is a complex process. A successful tree installation depends on close collaboration with local government officials.

OBTAIN ALL NECESSARY PERMITS

Permits are often required for tree plantings in sidewalks or road rights-of-way. On-site plantings are usually required for new construction projects, including buffer plantings or parking lot landscaping. Check with the city arborist or urban forester to determine what permits are necessary prior to beginning an installation. It is also important to know who is responsible for tree maintenance. In some instances sidewalk trees are maintained by the city; in others, adjacent property owners are responsible.

CHECK FOR UNDERGROUND UTILITIES

Call local utility companies to locate underground pipes, wires and utilities. In some cases, this may be done by the city as part of the permit application process. In addition, select trees that are an appropriate fit with above ground utilities, considering tree size when fully grown.

PREPARE THE SITE FOR PLANTING

Urban soils are often compacted, lack topsoil, contain building debris, and have been sealed with concrete or asphalt. Test how quickly water drains in the soil at the planting site. If it appears to drain slowly, the soil is probably compacted or of poor quality. It may be necessary to add extra nutrients and mix in mulch to aerate the soil.

If the planting site is covered with concrete, consider renting a concrete saw or hiring a concrete contractor to cut a tree box in the sidewalk. Be sure to review tree box size requirements or recommendations provided by your local city arborist or urban forester.

How will you water the trees? Will an irrigation system be needed or will the trees be watered using a tank truck or hoses?

Tree Project Partners

PROFESSIONAL	SERVICE OFFERED	QUALIFICATIONS	CAUTIONS
CONSULTING ARBORIST, CITY ARBORIST, or URBAN FORESTER	Planning, design, tree selection, and installation	Certified by the International Society of Arboriculture or the American Society of Consulting Arborists	May focus on plants rather than larger district vision
LANDSCAPE ARCHITECT or DESIGNER	Planning, design a sense of place, assist with tree selection	State certification or American Society of Landscape Architects	May focus on aesthetics rather than best plant choices
LANDSCAPE CONTRACTOR	Site preparation, installation	May be certified, bonded	Needs clear instructions and supervision for planting
BUSINESS ORGANIZATIONS and MERCHANTS	Planning, installation volunteers	May need training for any direct tree work	May have limited time to contribute
CITY PUBLIC WORKS or TRANSPORTATION STAFF, WORK CREWS	Assistance with permitting, possibly site preparation and planting	In-house and professional training	May respond to city regulations or guidelines, rather than design vision

WORKING WITH PROFESSIONALS

Professionals provide a variety of services that contribute to a successful tree installation project. Finding good collaborators can reduce a business group's labor and involvement; however, the project cost will increase. Using volunteers for installing trees can reduce costs, but increase the amount time and effort merchants will have to invest in a project. The table above lists the contributions of various professionals who can assist with tree installations.

HOW TO PLANT A TREE

Many outstanding references about how to plant a tree correctly are found on the internet. A professional contractor shouldn't need this information, however, if using volunteers, a training session or demonstration on how to plant a tree will be necessary. Here are sources for instructions on how to plant a tree:

1. International Society of Arboriculture, Trees Are Good
http://www.treesaregood.com/treecare/tree_planting.asp

2. National Arbor Day Foundation
http://arborday.org/trees/NineNum7.cfm

MAKING IT SUCCEED

Trees in a business district will only prosper with good maintenance. A tree needs special attention during the first several years after being planted to become well established. Good tree structure and health are easy and inexpensive to set up in the first few years. After that, continuous but less frequent care is needed. If not done, retroactive and corrective work can be difficult and expensive. Proper management enacted early on will ensure safe and healthy trees for a very long time.

PROPER MANAGEMENT

An urban business district is a challenging growing environment for a tree. Unique stresses and conditions threaten the trees in the city, such as high levels of pollution, pedestrian foot traffic on root zones, limited air and water, vandalism, and an overall lack of attention. Young trees will fare better in this environment when preventive measures such as good pruning and sufficient watering are provided in the first few years after planting. Established trees will also need continuous maintenance, including pruning and watering to maintain optimum health.

A tree planted on city property may be maintained and cared for by the city; however, cities can rarely commit to the additional needs of a tree in the first several years of its life. Some cities require adjacent property owners to care for trees. Whether required or voluntary, a property owner's commitment to proper tree maintenance can produce many rewards.

MULCH AND TREE HEALTH

Mulch is a tree's best friend.Mulch helps conserve water, keeps weeds at bay, protects the trunk from equipment damage, helps prevent soil compaction and adds nutrients to the soil as it decomposes. Pine needles, composted wood chips, and shredded leaves are examples of good mulch materials. After the tree is planted, mulch to a depth of 2-3 inches around the tree, but pull mulch away from the trunk by about 4-6 inches to let air circulate. Mulch should be added around a tree about once a year, but never to a depth greater than 3-4 inches

TREE RISK

Trees in natural forests, age, break up and fall, but pose little risk to people or property. Urban trees that are weakened or have large dead limbs can pose risks. Trees that are not properly cared for may pose a greater risk. Risk involves two conditions - a tree defect (due to damage or disease) and a potential target. Strategic pruning in the first several years of a tree's life provides proper canopy shaping. This will reduce the incidence of weak branches or trunks as the tree ages. Proper watering and mulching will also lessen the likelihood of a tree being attacked and weakened by disease.

Tree Maintenance

YR 1	Mulch in the spring	2-3 gal water each week in summer	
YR 2	Mulch in the spring	5 gal water per 3 weeks in summer	Prune deadwood and begin to shape crown.
YR 3-6	Mulch each year (max mulch depth 3 inches)	Selectively prune each year to shape crown.	
ONGOING	Mulch each year (max 3 inches)	Prune for good tree health, form, and storefront visibility.	

LIABILITY

A properly selected, located, installed, and maintained tree will prosper. However, if a certified arborist or city forester determines a tree to be hazardous, the tree should be removed immediately. If the tree is on private property, the business owner can be held liable for an incident involving a tree previously identified as a hazard.

DESIGN WITH TREES

PRUNE FOR SIGN VISIBILITY

Trees take time to grow. Ongoing maintenance should include pruning to guide the shape of the tree's canopy and remove any limbs that might be hazards. Once the tree grows, the canopy can be "limbed up" to raise branches and foliage above signs and storefronts. The canopy can also be opened up with selective pruning to allow some sunlight down onto the sidewalk, making the street more pleasant for pedestrians.

PLAN ENOUGH ROOM FOR ROOTS

Restricting tree roots to small spaces will cause them to damage nearby paving and buckle sidewalks. Plan for the largest underground space possible for soil and roots. Pervious pavers and grass strips allow air and water to enter root zones. Mulch (made from organic materials such as wood chips) over soil is even better. Planters should only be used for trees and shrubs that do not grow to large size.

USE TREES TO GIVE YOUR DISTRICT A UNIQUE CHARACTER

Conventional planting patterns are one tree per every 30 feet (or more) of sidewalk. Variations on this basic pattern make a shopping district more interesting and unique. For instance, double rows of trees of mixed species can be planted if sidewalks are wide enough. Understory plantings of flowers and shrubs add more visual interest.

USE STREET FURNITURE TO ADD COMFORT TO OUTDOOR SEATING AREAS

Give these areas careful thought. Randomly placed benches on the sidewalk may not be comfortable or visually appealing. Benches and custom made seating can wrap around a tree pit or planter to give customers a sense of shelter while watching the activity on the street. In addition, trees and planters can be used to perceptually break up a large paved area into a series of "rooms," making the space feel more human in scale and friendlier.

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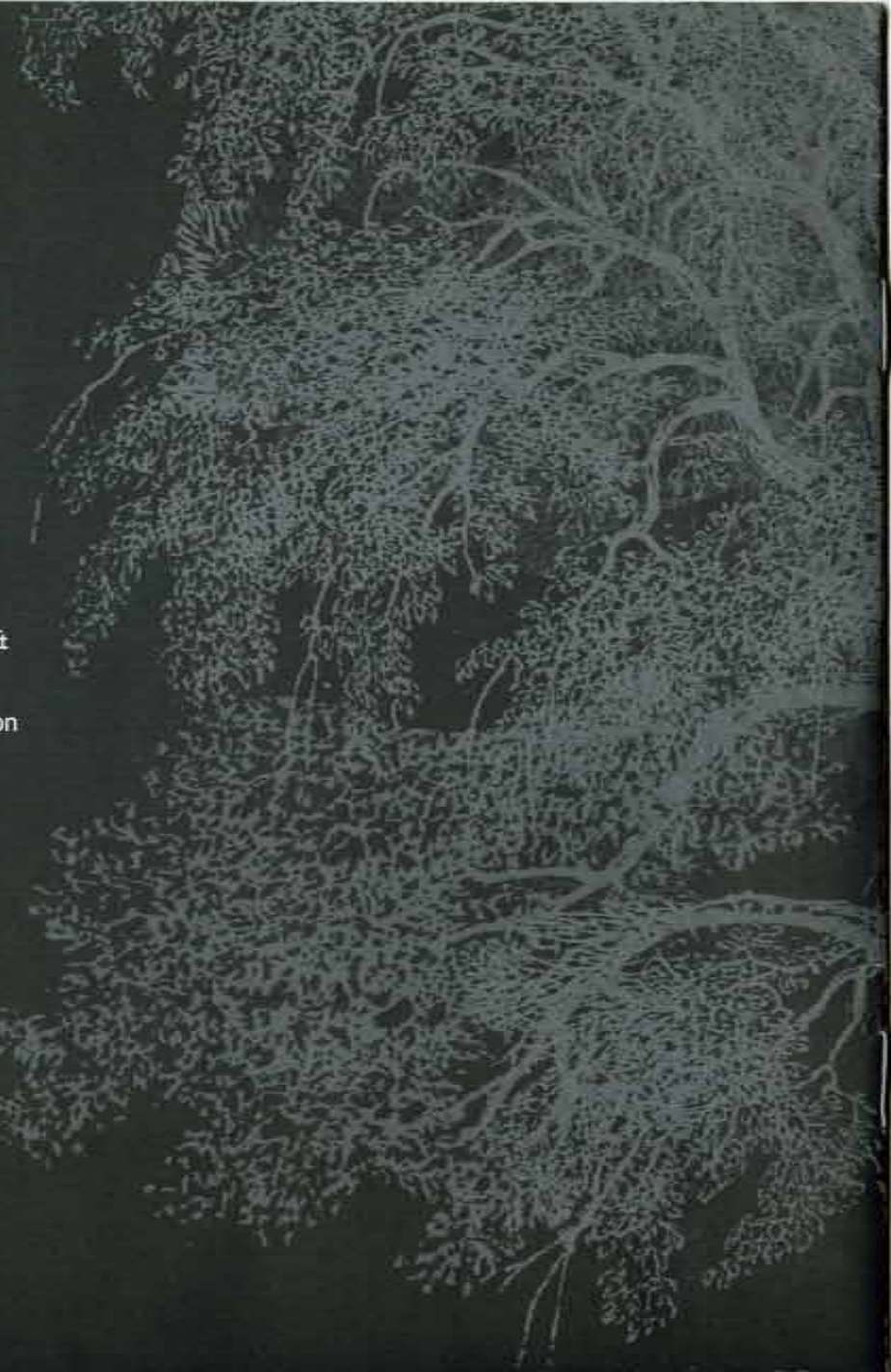
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