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Many of trees that filled our country's first urban parks have come to the end of their life cycle. Plans must be made to replace them.

THE TREE CHALLENGE

Plans to replace the trees that stood as forerunners in America's first urban parks were never made. Is it too late?

by Terry A. Tattar, Ph.D., University of Massachusetts

Trees are the most important living components of a park or historic garden. No one can argue the beauty of the lawns and the other plantings. But trees are the most irreplaceable element in the natural landscape.

Trees, unfortunately, have not been treated well in many of our most prestigious gardens and parks. In contrast to lawns that require, and are

provided, regular attention, trees are often treated with benign neglect.

Many of the most important trees in these sites are in poor condition, suffering from abuse and lack of care. At the present level of tree management, large losses can be expected by the beginning of the 21st century.

However, it is not too late to begin to restore the trees in these gardens and parks. How we manage these

areas in the 1990s will determine their condition in the early part of the 21st century.

First, a commitment must be made to the responsible management and preservation of shade trees in parks and gardens. We must also recognize and then protect trees from all activities detrimental to their health. Large attractive shade trees can always be present in our urban areas if we can continually protect and restore our trees.

Historical perspective

Many parks and historic gardens were created between 100 and 125 years ago, shortly after the period when Olmstead designed Central Park as a model for using urban space. This great social experiment was soon repeated throughout the United States.

Trees that were planted during that period and still survive are very old.

Their replacements should have been planned and losses anticipated many years ago. But, in most cases, they were not. Instead, I often find a great fear for removing any living trees, regardless of poor health or obvious defective condition. This strict adherence to preservation has caused many problems in parks and gardens and is contrary to the natural life cycle of trees.

We need to learn more about the cycle of life and death of trees, and how to protect trees from stresses that shorten their lives.

Life and death

A living landscape is subject to constant change. Responsible management is needed to plan for the inevitable changes that must occur in the living components of that landscape. Trees, due to their potentially long lifespans, are often overlooked when plans for changes are considered. Mature trees are often considered "permanent" components of a landscape and are expected to remain in an essentially static condition.

This situation has resulted in most parks greater than 100 years old having many large, old trees in various stages of decline and few, if any, replacements. Trees, like all living things, pass through stages of youth, maturity, decline and eventually death. Tree removals are always painful, but are essential to maintain healthy and safe trees on a site.

I have found the overall health of the trees on a site is often directly related to the number of trees planted each year. A program of tree replacement must be continual, and must be planned many years in advance of an-

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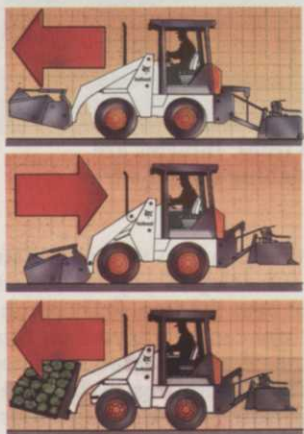
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Construction remains one of the biggest threats to trees. Injuries are caused by raising or lowering of grade and by trenching near the tree. Still, injured trees may take years to die.

anticipated tree removals.

A program of regular tree maintenance, however, can often extend the useful life of a tree indefinitely.

Management and preservation

It must begin when the tree is healthy, and must be sustained. Pruning dead, dying, and defective branches; regular fertilization; and using soil aeration and cushioning mulches to alleviate soil compaction, are examples of tree maintenance activities that promote vigor and extend life. Preventive tree maintenance on healthy trees is a much more successful strategy than attempting to preserve trees in severe decline.

Conflicts in tree care with the care of lawns and gardens are also a threat to the survival of shade trees. Lawns near trees are often treated with lime-based fertilizers and broadleaf herbicides. Most trees grow best at pH levels much lower than lawns. Many of the herbicides used on lawns are known to cause injury to trees.

We now know that trees roots routinely extend from the trunk twice the height of the tree, and sometimes extend further. Roots are not restricted to the area under the branches, or "drip-line."

Small absorbing roots of trees form in the same area as turf roots. Consequently, lawn care chemicals applied anywhere around trees can be expected to affect tree roots.

Injury by equipment

Injuries to trunk and roots from lawn care equipment can often cause cankers and decay. Similar injuries to roots can be caused by rototilling in annual beds near trees.

Sod should be removed from around the trunks and buttress roots, and a "mulch zone" should be established. This zone should be as wide as possible, and can be covered with a

decorative mulch that will eliminate the need for entry of any lawn care equipment near the tree. Only perennial plantings can be allowed on this mulch zone, if any vegetation is desired. Annual plantings, which require periodic soil disturbances, should be restricted to areas far from any woody plants.

Trees can survive and remain healthy where turf and annual plants are grown, but adjustments in lawn and garden care must be made. The use of lawn care chemicals—especially herbicides—must be eliminated or minimized. Careful attention to the soil pH around trees must also be made to avoid high pH stress induced by turf fertilizers. A regular program of tree fertilization using a method, such as liquid soil injection, to both aerate and provide nutrients is also recommended.

Injuries to trunks and roots from lawn and garden equipment must be avoided to prevent root diseases, like shoestring root rot, a leading killer of stress and injured shade trees.

Construction as cause

Construction is the ultimate cause of death of many shade trees. Many trees in parks and gardens, especially in urban areas, are killed each year as a result of earthmoving activities, such as building construction and the installation or repair of underground utilities. The injuries caused by raising or lowering grade, and by trenching around trees, are often fatal.

Construction-damaged trees may take many years to die, but will often begin to decline soon after the construction has been completed. These weakened trees are often attacked by secondary pathogens and/or insects which accelerate their decline.

Because of weakened roots, construction-damaged trees may also be (or can become) hazard trees that con-

stitute a danger to staff and visitors. Preventing all construction activities near trees is essential to their survival.

Frequent pressure for construction projects in parks and gardens is a fact of life in the urban environment. Communication must be established with those planning any construction activities in a park or historic garden before any construction begins. During planning stages, construction activities can often be steered away from trees to minimize their impact.

Establish barriers

Barriers to construction activities must be erected around trees before construction begins to prevent any "accidental" intrusion near trees. Barriers must be placed as far away from the trees as possible, and must not be moved until all construction activities have been completed. Whenever possible, large areas encompassing many trees and shrubs should be fenced from construction to protect them.

I have found that slatted "snow fences" secured by metal stakes work very well as tree protection barriers. They are easy to install, available and inexpensive.

Effective tree protection focuses on protecting the roots and soil near trees from any and all construction activities during the entire project.

Trees are critical components of parks and historic gardens. Trees must be managed and protected. Change is inevitable, and some trees must be replaced every year to make room for the next generation of trees. This change is natural and essential if the trees are to remain healthy, safe and available for generations to come.

Trees, however, must be protected from activities detrimental to their health. It is unthinkable to sacrifice a beautiful shade tree for a "weed-free" lawn. Lawn and garden activities around trees must be consistent with what will not harm the tree. Construction activities around trees must be avoided if possible, carefully planned in advance if necessary, and then, firmly restricted in scope, using tree protection barriers to minimize damage to trees.

LM

Terry A. Tattar, Ph.D., is a professor at the Shade Tree Laboratory of the University of Massachusetts in Amherst. He has written two books and has published more than 100 scientific articles on tree health problems. For the past 10 years, he has acted as a consultant to many historic parks and gardens, including Central Park, Boston Commons, Tanglewood, Old Westbury Gardens and the Newport Preservation Properties.

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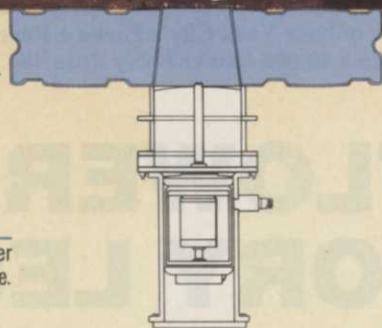
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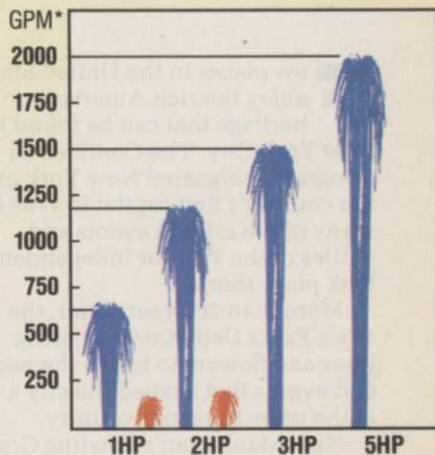
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This year Battery Park is again the focus of New York City's Parks & Recreation Department as petunias were planted at the rate of 7,000 a day to create a 40,000-flower Betsy Ross flag.

A FLOWERFUL HISTORY LESSON

New York City is celebrating its role in American history by planting trees and flowers.

Few places in the United States enjoy the rich American heritage that can be found in New York City. The Continental Congress designated New York as the country's first capital in 1788 and many of the critical events and battles of the War for Independence took place there.

More than 200 years later, the city's Parks Department is using trees and flowers to honor the people and events that shaped the city and, at the same time, our country.

Near Manhattan's Bowling Green, where an angry crowd pulled down a statue of King George III after a reading of the Declaration of

Independence, is City Hall Park.

Although New York's present city hall wasn't built until 1811, on or near this site were military barracks, the area's first public school, an arsenal and other utilitarian buildings. In 1776 American fortifications bordered the area and Liberty Poles stood on the grounds. Later in the war, Nathan Hale was believed to have been hung from a tree there, as were other revolutionaries considered by the British to be seditionists.

Today the area is called City Hall Park and on this July Fourth celebration it will be decorated with ageratums and begonias arranged in

the patterns and colors of the American flag, thanks in part to the F.W. Woolworth Co., which sponsored the planting.

Nearby is Battery Park, named for the battery of cannon lining the shore. A special planting representing the French and American flags was planted for the 1986 centennial celebration of the Statue of Liberty, which is in clear view. There are 45,000 red, white and blue petunias planted by NYC Parks gardening crews in a 12,000 sq. ft. bed, symbolizing the unity of France and the United States.

In the past year the area was again planted in bold stars and

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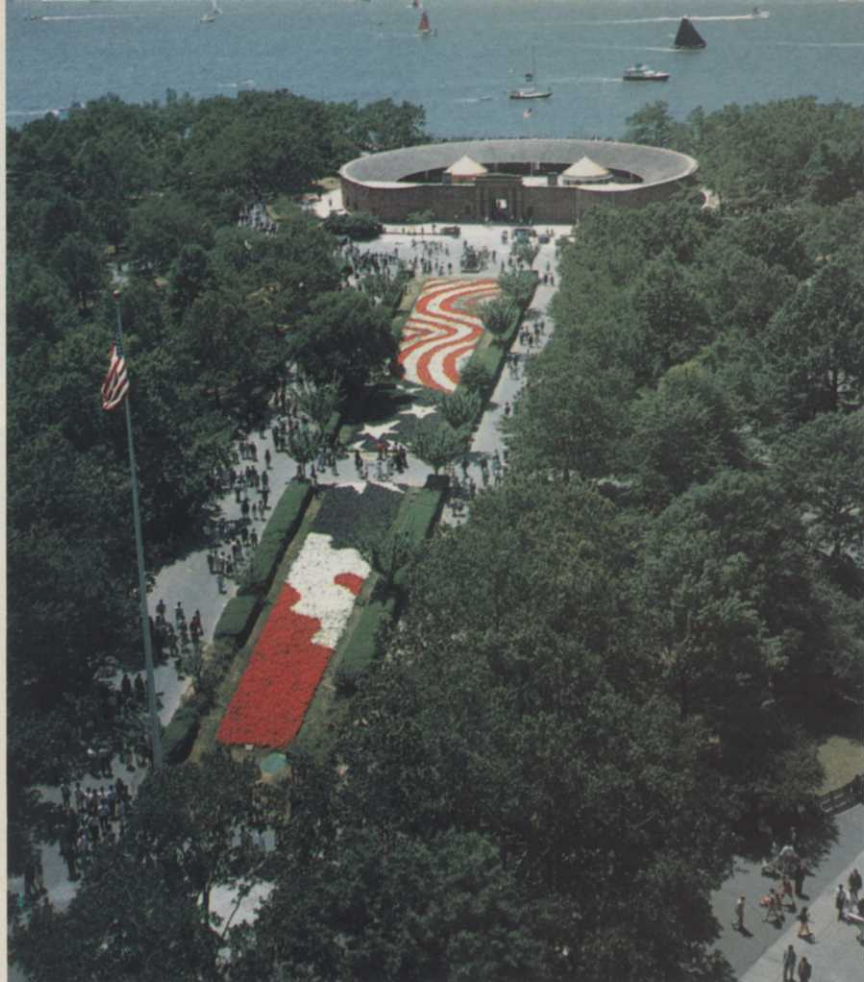
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Today it's a pleasant park in the heart of Manhattan where one can go to enjoy lunch. But only 200 years ago, City Hall Park was a hotbed of revolution, a site that hosted military barracks and Liberty poles. Ageratums, pansies and begonias planted this year bring the present and past together beautifully.

In Central Park's Strawberry Fields, a white pine was planted to commemorate the historic role of the Iroquois Six Nations, whose constitution served as a model for the U.S. Constitution. The Iroquois Six Nations are the oldest continual constitutional government on this continent. The first treaty George Washington signed with another government was with the Iroquois Nations in 1768, when the United States officially recognized Iroquois sovereignty. **LM**



Battery Park was decorated with more than 40,000 red, white and blue petunias for the centennial celebration of the Statue of Liberty, which is in clear view from the park.

stripes. Petunias were planted at the rate of 7,000 a day to create a 40,000-flower Betsy Ross flag, and stars made of tulips were also added.

Historic trees

The Parks department also planted groves of 13 trees for each of the 13 original colonies at the site of historic houses in parks around the city. Native black tupelos were planted at Staten Island's Conference House (right), where on Sept. 11, 1776 Benjamin Franklin, John Adams and Edward Rutledge met with British Lord Admiral Richard Howe to negotiate peace (the British admiral offered to end the conflict if the colonies would return to British control. The Americans, of course, turned down Howe's offer).

Trees will be used to honor other famous houses, including the Linden trees at Van Cortland Manor in the Bronx, where the British held colonial patriots prisoner.

Historic parks

Franklinia trees were added to Thomas Paine Park in Manhattan,

once the front line of battle in the Revolutionary War. Groves of green mountain sugar maples were planted at John Paul Jones Park in Brooklyn and at Rufus King Manor in Queens, the former home of a drafter and signer of the Constitution.



At the southernmost tip of Staten Island is the Conference House, the site of a failed attempt to strike peace between the Americans and British in 1776. This year 13 native black tupelos were planted here, one for each of the original colonies.

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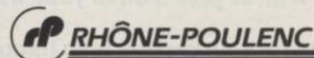
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PLANNING FOR SUCCESSION

Continuation of the family business requires that you choose your successor wisely, whether they're related or not.

By E.T. Wandtke

The importance of the family-run business is often overlooked. In the lawn care industry, this issue is starting to surface as a problem for business owners.

Succession and ownership are two problems unique to a family business. It is estimated that more than 13 million of today's family businesses have no plan for succession. In addition, many family businesses close because the impact of estate taxes is never considered when planning for succession.

What may have been adequate tax planning two years ago may now be inadequate after the Tax Reform Act of 1986. Make sure your tax adviser is on top of this issue.

Many don't make it

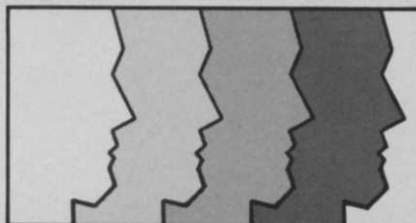
One in three family businesses fail after being passed onto the second generation. Third-generation family businesses succeed at a rate of less than one in seven. Poor planning is often the cause.

Currently one in three family businesses fail after being passed onto the second generation, statistics say.

Let's assume that one of your children does decide to go into your lawn care business. What is the best way to turn the company over to him or her? You could sell him or her stock, present the company as a gift or provision in your will, or pass it on to your wife first.

The plan of succession is an important component of the overall business plan. This plan requires the input of several outside advisers: a psychologist, a strategist such as AGMA and a

MANAGEMENT



IN BUSINESS

tax counselor, usually your CPA. This may seem like an unusual team, but effective business succession requires a combination of talents.

The psychologist can determine if both you and the chosen successor are compatible and agree on the future of the company.

The strategist can determine the future viability of the company in the lawn care industry, and whether the remaining family members believe that there will be a business opportunity in the future.

A tax counselor is needed to develop the necessary financial strategies that will allow the company to pass from one generation to the next. This requires a minimum disruption in operations because of estate taxes.

When the choice is made

You need to find an individual capable of operating your company. Once this individual is on board, his or her training and development should be the same whether he is related or not.

The key issue is preparation. Your successor should possess the needed financial, marketing, operating and managerial sense as would be found in the owner of most successful service companies.

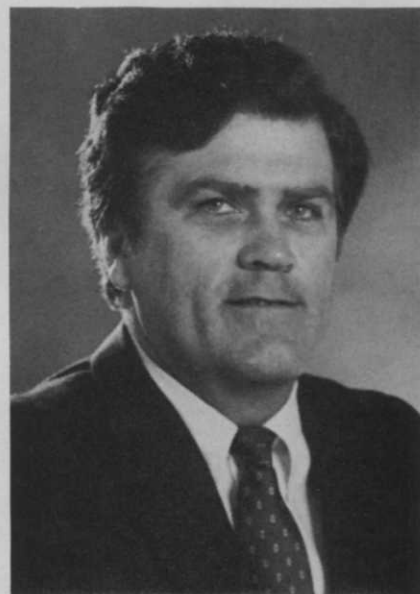
Do not look for a carbon copy of yourself. Choose someone with an understanding of the industry and the role that the owner of the company will be expected to execute. Encourage your successor to gain experience

in making decisions and gaining the confidence of fellow employees and customers.

If your successor is not related, you need to develop a tax and financial plan that will effect the transfer of the company to the nonfamily member and provide you with income and security.

These issues need to be discussed with your tax advisor and attorney. If an agreement can not be reached, there are several companies in the industry who will buy your company, but probably for less money than you would have received if it were sold privately to a known buyer.

Passing the business on to a family member or nonrelative requires much planning: tax planning to deal with the impact of estate taxes in the event the principal dies; business planning to anticipate the marketing, sales, financial and compensation requirements; and personal planning to ensure your compensation in retirement. **LM**



Ed Wandtke is a senior consultant with All-Green Management Associates, in Columbus, Ohio. He focuses on operations and financial questions.