

Large tree transplanting

What any landscape contractor should know before offering this lucrative service to clients wanting 'instant' landscapes.

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Technological developments in tree transplanting now make it possible, with the necessary equipment and expertise, to transplant trees of virtually any size. It is common to read about historic trees being moved to allow road and building construction to be performed on their growing sites.

Indeed, large tree moving specialists using the latest in tree moving technology, including spades, cranes and digging equipment report high degrees of success in routinely moving these very large trees.

The interest of most landscapers in large trees, however, is to provide their clients with the option of utilizing unique nursery stock to create distinctive landscape designs. This article, therefore, will focus on strategies for the selection and successful establishment of large nursery-grown trees in the landscape.

Large tree transplanting is both an opportunity and a serious challenge for the landscaper. Recently, I wrote an article entitled "Increase the Odds of Tree Survival" that was published in the May 1998 issue of *LANDSCAPE MANAGEMENT*. In addition to reviewing recommended tree planting techniques, the risks of transplanting large trees were also presented. Readers not fa-

miliar with that article may find it of interest.

Research on tree transplanting of both large and small trees has revealed at least one general conclusion, that root growth is the key to success after transplanting, re-

gardless of tree size. However, small trees are much more forgiving of our mistakes and neglect, while large trees are not.

Why transplant large trees?

Large trees are the landmark components of any landscape. They create the impression of maturity and permanence. Large individual residences, condominiums and office buildings, for example, require plant materials of substantial size to complement these structures. Landscape architects have realized for many years that many of their designs could be achieved almost instantly with the use of large trees.

In addition, many property owners are no longer willing to wait for trees to grow into mature size and are willing to commit the resources necessary to establish a "mature" landscape. The result is an increasing demand for large trees in the landscape.

Although the cost to the client of transplanting large nursery trees is high there is a high profit potential to the landscape contractor. A landscape contract that involves numerous large trees will be substantially larger than a contract with only small root stock. Despite the extra labor required, the much higher cost of large nursery trees usually makes it worthwhile financially. If performed correctly with positive results, large tree transplanting can be very lucrative for the landscaper.

Recent advances in root growth technology have increased survival rates and shortened establishment times of transplanted trees. For example, the use of root growth stimu-



A hand-dug copper beech being wrapped and strung for shipping

lants and mycorrhizal preparations designed specifically for trees, have aided root growth after transplanting. It is now possible, therefore, to provide the necessary amendments to an otherwise large, healthy nursery tree, together with regular irrigation, to achieve a very high degree of success in transplanting.

The pitfalls

Before going off into the sunset to transplant large trees and reap great rewards, you should recall Murphy's Law "if something can go wrong, it will". There is a lot that can go wrong with large trees, and remember what was stated earlier, that large trees don't forgive us. My general rule is no detail in tree planting is too small and everything you do, or forget to do, counts.

Numerous studies on transplanting large trees have reported that it takes several years, and many as 10 years, for a



Make sure you have enough labor and the necessary equipment when digging, moving and transplanting large trees.

tree's root system to recover completely from transplanting. It can be expected,

therefore, that most large trees will not look as good in the landscape, following

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Sugar maple trees, unloaded and ready for fall planting in Sharon, Connecticut

transplanting, as they appeared in the nursery. In my experience most trees appear reasonably healthy during the first growing season as a transplant, but often appear less vigorous the second growing season. One reason for this is that energy reserves present within the tree prior to transplanting allow it to produce a crop of normal foliage the first growing season, but subsequent root loss prevents the transplanted tree from storing sufficient energy reserves for the second growing season. Survival, of course, depends on the generation of new roots, the faster the better.

Most properly transplanted trees will eventually establish. However, there are two problems that can often plague the landscaper, 1) anxiety of clients over a "less than perfect" tree and 2) the one-year guarantee time limit of the nursery. First, the physiological events that follow transplanting of large trees described above need to be carefully explained to your clients. They have to understand that a large tree needs time to establish *before* you accept the job. Second, work out a flexible agreement with the nursery to allow the extension of the guarantee time for their trees.

Once planted, if, in your opinion, a tree is in poor condition and likely to be a source of embarrassment for your company, don't hesitate to have it replaced. However, if the tree is growing slowly but still retains its original form and has solid potential to establish, try to get the guarantee extended. I have found that this can be a win-win arrangement that works out for the client, the landscaper and the nursery.

Another important consideration is that moving large trees is a labor-intensive activity. If numerous trees are to be planted a large crew is needed since trees must be planted as soon as possible after they are received on the job site. The landscaper will likely have to commit much of their personnel and equipment, and perhaps need to hire additional workers.

Since the cost of large trees to the client is high, the expectations of the clients are also high. The landscaper must be prepared to make numerous follow-up visits to the clients to inspect the trees and to allay fears of the client. The whole process from tree selection to final acceptance of the trees by the clients could take several years. Patience and persistence are both required traits for those who transplant large

trees. However, in my opinion, once you commit yourself to transplanting large trees correctly, it is well worth the effort.

How to move large nursery trees

Despite all the technological improvements and all the scientific advances in growing nursery stock, most large trees are still moved in the same manner as they have always been moved, by hand digging. Why is hand digging still so popular? We have always known that careful preparation of the root ball has been most critical for transplant success. Now the experimental evidence exists to support any attempts to preserve as much of the root system as possible. To minimize any injury to roots and changes in the soil texture around them, digging around the roots, root pruning, as well as shaping, wrapping and tying of the root ball, all have to be done mostly by hand. Heavy equipment to move and lift the root ball is brought in primarily after the hand work is complete.

Tree spades must match tree

The development of tree spades has allowed transplanting of many large trees but their use in transplanting nursery trees is limited. A tree spade can dig and transplant a tree into a pre-dug hole very quickly. Many valuable shade trees which were in the way of building and road projects have been saved because they could be transplanted locally using a tree spade at low cost. However, it is very difficult to use a tree spade for long distance shipping. There is also concern about the compressive forces on soil at the edge of the root ball that is dug by a tree spade. But, the most serious concern about tree spades is their use on trees that are larger than the spade was designed for. When a tree spade exceeds its size capacity, much of the root system remains in the soil. The result is a large tree with a very small root system, which will very likely perform poorly in the landscape.

Steps to success

It should be clear by now that success in tree transplanting begins at the nursery. Your first job must be to locate sources of quality nursery stock for the client. They

should then visit the nursery with you and agree on the tree selections you recommend. If they cannot go to the nursery you should take color photographs of each candidate tree for their selection. Once selections are made each tree should be tagged to avoid any future confusion during digging and shipping of your clients' trees.

Your clients need to understand the details of large tree transplanting and how the tree will need time to establish in its new site. Your skill as an educator are critical here. Warn them that health problems sometimes happen and despite all our efforts transplanted trees sometimes die or will not establish in satisfactory condition. Assure them that you have secured replacement guarantees for them if this event should happen. And be clear as to the post-planting care and efforts required by the client.

Discuss extension of the standard one-year guarantee with the nursery before set-

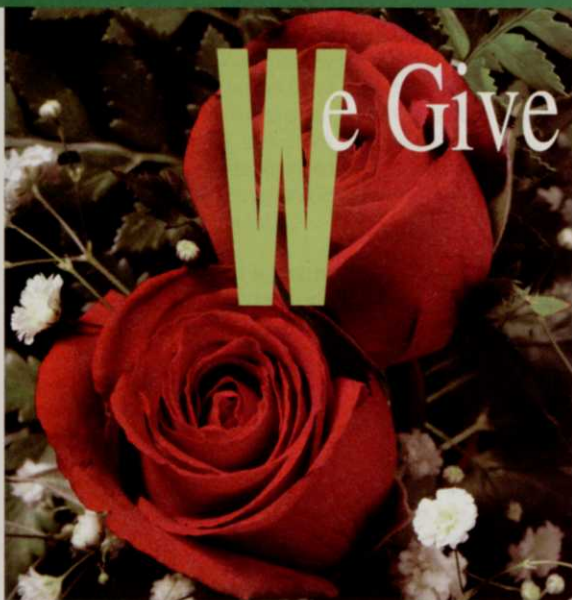
The whole process from tree selection to final acceptance of the trees by the clients could take several years. You need patience and persistence.

ting on a contract for tree sale. In my experience the difficult issue is most likely to be a living tree in unsatisfactory condition at the end of the guarantee period rather than the replacement of a dead tree. As discussed earlier, a flexible guarantee allows the tree more time to establish, protects the client and can often save both the nursery and the landscaper replacement costs. In addition, the nursery often will require assurances that all the trees sold will be irrigated as needed during the guarantee period to protect their investment.

Follow-up care is the final key to success in large tree transplanting. Irrigation obviously will be the most important tree care activity for newly planted trees for several years. Mulch applied over the roots at planting time must be renewed when appropriate to supplant irrigation, suppress weed competition, and most importantly, to keep lawn mowers and trimmers from getting anywhere near the trunk. Check, loosen and eventually remove any ties or supports on the tree several times during the growing season. In addition, monitor and control any insect attacks as well as any tree pathogens that threaten the health of the transplanted tree. Vigilance in follow-up care is essential and will pay off in fewer tree losses and better establishment of transplanted trees.

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