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there more social mixing of people in a fair competition. Although strength is important, timing and coordination are more so, for golf is a game of skill. By handicapping, a fair competition could be arranged between a young strong golfer and his grandmother. When public golf is offered at prices comparable to movie house admissions, and used equipment can be bought for the price of baseball gloves or a bowling ball; golf is within reach of all income levels.

At this point I trust that I have clearly established the value of a golf course as an asset to the community for all people. I have eluded to the fact that golf courses, in some instances, are outright protectors of the environment, but there are those who would respond that the very act of building and maintaining a golf course is destructive. This point of view is not totally supported by those who have carefully observed and monitored such activities. Let us look at some of the more often heard comments about each construction step.

Clearing - There has been heard on occasion the comment "that the golf course will totally destroy the woodland". Admittedly, during the actual clearing operation it seems as if the entire woods is being ruined since about 50 percent of all trees must come down. However, it must be remembered that the goal of good golf course design is a natural appearance and most golf course designers are environmentally aware. As a result those trees that must be removed are carefully selected and marked so that the best trees remain. Many, many golf holes have been altered to save a specimen tree or stand of trees.

When public golf prices are comparable to movie tickets and used equipment can be bought for the price of a bowling ball, then golf will be within reach of all income levels.

The areas outside of the fairways are selectively thinned to allow sufficient light and air movement to permit good grass growth. This thinning operation in combination with the fertilization given in these shaded areas results in a stronger, more vigorous tree. This tree is growing in an environment of better nutrient, light and water balance with a reduced possibility of disease or insect infestation. Golf fairways wandering through a wooded area have also been praised by foresters as irrigated firebreaks.

During the **earth moving phases** of golf course construction, references have been made toward "wholesale erosion" of topsoil. But this is not likely for all topsoil is stripped and stored in areas of

grade change and replaced to encourage good turf growth. Since erosion can cost the contractor thousands of dollars in repair and replacement every means of prevention is used. These include confining earthmoving on erosive slopes to a minimum, seeding to a cover crop as soon as practical and straw mulching all disturbed areas. Although some soil may erode and temporarily pollute some streams, the loss is small when one averages it over the life of the golf course.

Although in most parts of the country golf courses are constructed by cutting and filling of land above the ground water table sometimes the construction of a golf course alters wetlands by draining or filling. However, such alterations may not be without benefit. The usual procedure in golf course construction is to dig a lake and use the fill from this operation to raise the surrounding land. This area of filled land usually does not extend more than 100 yds. wide. This narrow distance does not significantly alter animal corridors and actually benefits most species. Development of a deep lake instead of shallow swamp permits a wide variation in aquatic life ranging from more diving ducks to species of fish. Surrounding land is better drained and water storage for fire protection or animal preservation against drought is improved. Again, any designer worth his salt would seek to harmonize the golf course into the wetland environment by leaving many large untouched areas and not try to change the character of the wetland.

Stream channelization can dramatically and adversely affect a delicate environment. However, if no such unique or delicate habitats exists, stream channelization when properly done has many beneficial effects.

- 1) Straightening out a meandering stream may allow better use efficiency with minimum construction, best land utilization, and least development costs.
- 2) Allows more efficient stream bank maintenance and better access.
- 3) Increased flow may increase oxygen content of water thus combating purification.

I feel certain that there are other objections to golf course construction but in all instances I know of, the benefits of properly building the course outweigh the detrimental effects.

Objections to **golf courses' maintenance practices** usually center on the use of fertilizers and pesticides. Most of the early discussion was based on intuitive calculations about pollution and contamination resulting from surface and sub-surface runoff. When such allegations were first made, there was no basis in fact to counter them, simply because no one thought of it before and no one really cared. However, in the last five years, extensive research has shown no significant runoff of chemicals of any kind if properly applied. This phrase "properly applied" is not a cop-out for only a very small fraction of a percentage is not properly applied. The golf course superintendent of today is usually college trained in a program that is geared to pesticide safety. He is, in most cases, licensed as a commercial applicator, and to

Continues on page 80

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INTERIOR PLANTSCAPE CONTRACTORS SEEK RECOGNITION IN LIGHT OF GROWTH

By Bruce F. Shank, Editor

Now an \$80 million market, interior plantscaping needs special consideration from architects, researchers, and growers



The interior plant design, installation and maintenance business is possibly the greatest beneficiary of changing standards within the professional landscape horticulture industry in the last decade. Furthermore, it is likely to be one of the fastest growing Green Industry businesses in the 1980's.

So it is no surprise that interior plantscape firms want to be recognized as a unique and important part of our professional plant care world.

Currently estimated at \$80 million in installation and maintenance, the interior plantscape business has three major needs; to educate the landscape architect about the differences between interior and exterior plant materials, to develop technical support from extension and foundation research, and to find trained and self-disciplined maintenance people. These three needs are the reasons why interior plantscape businessmen want a specific identity that will make an impact on landscape architects, tropical plant growers, and educational institutions.

Three associations currently serve this type of business; the Associated Landscape Contractors of America (ALCA), the Interior Plantscape Association (IPA), and the Society of American Florists (SAF). Many interior plantscape firms belong to all three. Most of the original organizational work was in SAF and through an annual tropical plant workshop held each January at the Agricultural Research Center in Apopka, FL. ALCA and IPA appear to be making a greater effort to serve the interior plantscape businessman than SAF at the moment. Both are in the process of establishing standards and technical guidance to counteract any bad reputation caused by fly-by-night operators taking advantage of a healthy market.

One major weakness in the interior plantscape industry could be that many people in the business have backgrounds totally unrelated to horticulture. They have learned by trial and error and may lack some of the knowledge important when problems arise. It also gives the market that 'anyone else can do it' appearance, which is no longer the case. When you consider the risk of guaranteeing large interior plantscapes, a small, undercapitalized business could get wiped out by one technical flaw in a maintenance program.

The interior plantscape business has become sophisticated big business. In many cities landscape architects recognize the expertise of the interior plantscape firm and consequently consult or subcontract interior tropical plant design to them.

The business has already withstood one invasion by good intentioned but unskilled 'flower children' in the 70's. It has grown out of the tropical plant store, the florist shop, and the nursery into a service business, often outgrowing the business that originally launched it. Any idea of interior plantscaping being a passing fad can be refuted by the healthy and continued success of firms started in the early 60's.

Jerry Leider and his Tropical Plant Rentals in Chicago are cases in point. Leider, who started his business in 1963, now runs the biggest interior plantscape operation in the U.S. He talks about the first 17 years;



Tall ficus trees tower over diners
in the Colony Square Hotel, Atlanta, GA
(Photo courtesy IPA).

"We started in the midst of a building boom in the early 60's. Lady Bird Johnson traveled the country urging protection and beautification of our environment. Architects began designing buildings with atriums and lobbies for tropical plants. Hyatt Regency Hotels are one example of interior landscaping that received tremendous exposure and publicity. In the early 70's, the small tropical plant store grew by leaps and bounds posing a temporary problem as they attempted maintenance work. By the mid-70's this business leveled off and we settled down to concentrate on improving the technology of interior plantscaping."

Don Mastick, president of Foliage Plant Systems in Clifton, N.J., traces interior plantscaping back to 1869 and a German immigrant named Brers who started an exotic plant nursery in New Jersey. Key factors in the growth and sophistication of the market were, according to Mastick, educating the landscape architect that specifications for outdoor plant material did not match those needed for interior material; the development of commercial species specifically for interior plantscaping, and more sophisticated accounting practices by the interior plantscaper to insure himself against losses to guaranteed plants.

Mastick has used computers to keep track of costs for more than three years. He uses the computer to control loss rates, plant lists and costs from growers, and perform inventory.

"The attractiveness of the business is that it is not capital intensive," Mastick said. "However, when

the new company grows to the point that a second and third person are hired and can't be supervised all the time, and one of these individuals is taking care of \$20,000 worth of plants and for one reason or another loses a fourth of them, then the small business does not have the cash to handle the guarantee. It's the management of people that is so difficult. The technician has to be out there on an honor basis because the small firm can't afford the overhead of job foremen."

Harry Belin, president of Indoor Gardens in Alexandria, VA, and president of IPA, has been involved with interior plantscaping for about five years. In this time, he has noticed too many architects and designers associate the interiors with the exteriors. He has spent many hours trying to have specifications altered to practical levels. "We have seen bid specifications for interior work containing magnolia grandiflora, azaleas, gardenias and jasmine," said Belin. There was too much confusion, and not enough of a specific identity to make an impact to let people know there were some major differences between interior and exterior plantscapes."

Until recently, it was the grower and production specialists who gave the most advise to interior plantscapers. The short course in Apopka, FL, each January still remains the essential course for the field. The three-way relationship between grower, extension, and plantscape firm helped achieve changes such as acclimatization by shading, artificial soils, and larger material. But the grower's interest is still using his greenhouses as efficiently as possible and the extension service in Florida is there to serve primarily the grower. Research from the position of the interior plantscape firm is needed. Some is underway, at universities such as Ohio State, California Polytechnic Institute, Rutgers, and North Carolina State. Support for this research could speed up such possible improvements as low light tolerant hybrids, more labelled insecticides for interior use, and precise nutrient needs under indoor conditions. Efficient lighting in the needed red and blue wavelengths for plants needs to be pushed on a display rather than a greenhouse level. Temperature and humidity reac-

tions by specific plants need to be studied more precisely. Hardiness in general needs to be estimated for each commonly used tropical or semitropical plant.

Meantime, ALCA and IPA are working on maintenance and design standards. IPA is considering a certification program, based on a manual it is now developing. ALCA is holding regional and national sessions on interior plantscaping and IPA is planning a major meeting in September in Dallas and full support of the Apopka program this coming January. State florist associations are strengthening their programs in the area of interior plantscaping.

If industry data were tabulated, universities and technical schools might offer programs to train technicians. Specific informational needs should be spelled out by the associations, developed by qualified individuals, and made available. All this is very likely in the next three years.

So far it appears that energy considerations have had no effect on the market. Reduced energy for heat and lighting only further strengthens the need for research. Offering affordable conversions to older buildings not originally designed for plants will perhaps create a renovation specialty within the field. The demand for residential plantscapes may be the niche for small or new firms.

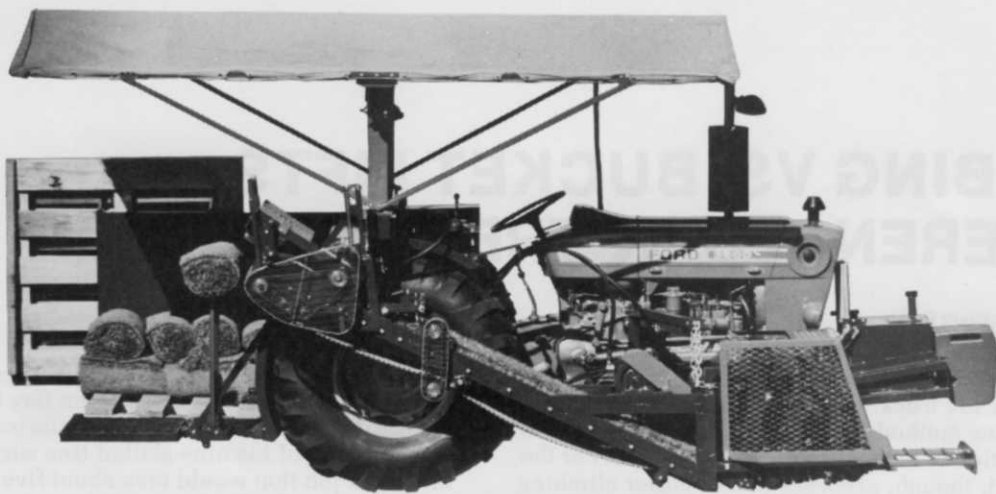
Even though the market grew out of the floral business, it resembles in many ways the services offered by the landscape contractor (exterior); installation, maintenance, and sometimes design. However, the plant material is more aligned to the floral industry. Being in the middle, members of this field should participate in both. The management aspects of landscape contracting are important to know and the special care knowledge of the florist is equally valuable. Neglect either side and you may get in trouble.

So far, interior plantscape professionals seem to realize this and hold memberships in both ALCA and SAF. Whether IPA can consolidate both specialties into one organization is yet to be seen, but certainly its efforts are worthy of support. Perhaps membership in all three is the best answer for now.

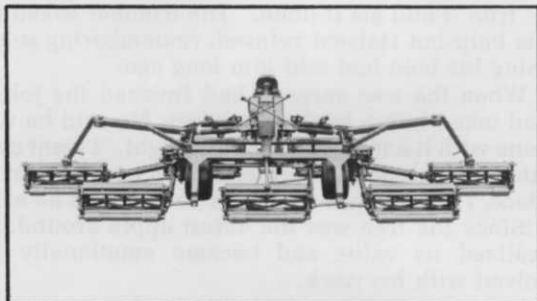
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Plants create relaxed atmosphere at a cocktail area in the Colony Square Hotel. (Photo courtesy IPA)





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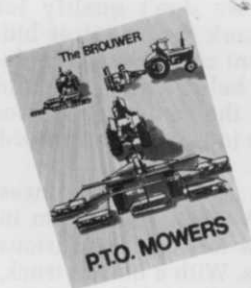
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CLIMBING VS. BUCKET LIFTS: PREFERENCES IN TREE TRIMMING

By John Kerr, Assistant Editor

There are two ways to trim a tree—climb it or use an aerial lift truck. Certain circumstances clearly call for one method over the other and sometimes a combination of both ways does the best job. For the most part, though, arborists prefer either climbing or lifts and resist compromise.

David Halsted, founder of the Oregon Arboriculture Co., in Portland, OR, has been called "violently opposed" to using bucket lifts. A born and bred climber, Halsted laughs at the severity of this description, but truly thinks proper trimming is only done through the eyes of the climber. After 18 years in the business, 12 on his own, his words cannot fully say why.

"I know there is a good explanation and I know the results of my work compared to other tree surgery companies," says Halsted. After preparing a talk for six months on his reasons for climbing, most of his audience said they understood and that he had no other choice but climb the huge trees of the Pacific Northwest. There are Douglas firs 20 feet through and 300 feet high and Sitka spruce that extend 40 feet around and oaks that carry 300-foot spreads but all these do not prove his reasoning.

"Tree surgery is a type of pruning that you have to be extremely sensitive to what you're doing," Halsted says. "The only way you can do that is from working within the tree. You can't be isolated from it, and even if you're sticking up through it and try to design the tree the way you want it, it's like cutting blackberries or brush from a distance."

"I could find more character, more design, and more creativity from working within the tree," he says. And the fact exists that some of the trees are just too tall for a lift, or if in a back yard, too inaccessible. "You add all these things together and the love for my work and that's all I can do to total it."

"I find more character,
more design, and creativity
from working within the tree."
Halsted

"I've seen my boys go into work in the morning and they'll knock off at noon because they just don't feel right or can't get into it. They'll stop because they're not performing the way they should be. I think our quality is better than anyone in a lift bucket unless he has the same moral attitude, and if he did that he'd be doing it by hand because it would be too expensive to use a bucket. If he was taking the time to do the tree the way he should it would take longer or as long as a bucket."

One day Halsted had the job of taking care of a pioneer apple tree that the Hudson Bay Co. planted in 1826. Because of its immense historical value, he sent the best of his nine skilled tree surgeons to do the job, a job that would take about five hours. The surgeon came back after a while and told Halsted he was having trouble with the tree and couldn't get it to come out. "I told him it's just an apple tree — trim it and get it done." The trimmer asked for his help but Halsted refused, remembering something his boss had told him long ago.

When the tree surgeon had finished the job, it had taken him a total of 14 hours. He said he was done with it and hoped it was all right. "I went over later to look at it and there wasn't a leaf out of place. I asked him why it took so long and he said " "Since the tree was the oldest apple around, he realized its value and became emotionally involved with his work.

"A man should know how
to climb and the basics
of pruning before operating
a lift." Hawthorne

"These are the kind of people I have and this is the type of thing we do. It's what makes us number one. We haven't reached the peak yet and still have a ways to go," says Halsted.

Some of his customers include major architectural firms in the Northwest, eight or nine out of the 14 spraying companies in the Portland area and public and private owners of several national and state champion trees. He charges \$35 an hour and is loaded with work.

Without trying to sound arrogant but with a tone that is set through experience, Halsted says, "Our customers qualify for us; we don't qualify for them." He doesn't do any work that requires bidding, except some government contracts which demand it, because he doesn't believe money should be the main determinant in the contract. He does little advertising. Most of his jobs come from word of mouth and his reputation.

Halsted won't argue that some circumstances justify using a bucket lift. A vicious ice storm in January 1979 forced his crew to work at a furious pace for the next five months. With a bucket truck, the men were able to pull broken and torn trees away from the Portland Art Museum to reopen it to the public. The crew worked seven days a week but was split in two so they still had two days off.

In one-on-one competition, Halsted thinks a man in a bucket truck could do an equivalent job to a



climber, if both had the same amount of time and money was no factor. "But time after time after time that man in the bucket is going to get careless because he's not part of what he's doing," Halsted says. "He can not be sensitive to that tree because he's not touching it, not feeling it."

The city forester in Portland once complimented Halsted on doing the best with what he had to work with on each tree. Halsted thinks some operations will usually do a good job, but not always consistently. "Ours is the same all the time. When our guy goes out, he doesn't know how many hours he has to spend on the job and he doesn't know how much the price is. He goes out and does that tree. When he gets done, he puts the time down and turns it in. That means he can do the same identical job each time. The only deviation from that is his own personal hangups which don't deter too much from the work."

Halsted says, "You start putting up a bucket through a tree and you can be careful and delicate but one of the things the truck is for is speed. You start pushing yourself and get careless and can

break a branch. Instead of getting out of a bucket and into a tree on a branch you can't reach, you say 'the hell with it' and cut it off from there."

"Another thing I don't care for with the bucket trucks is that you're working from the outside in. Pruning should be done toward the tree because the branch grows out and when you make a flush cut, you make a flush cut toward the tree."

Working from within the tree is also important, Halsted thinks, because a tree surgeon can see how much light to let through the tree. "Our work is a lot of structure and growth control," he says. "There are little things like trimming to the north. You make your cuts so a branch turns to the north and down because everything around here grows up and toward the south."

Halsted's crew has used a lift truck on some trees, such as large elms, for 60 days and has done its usual expert job. But at the end of that time, Halsted thinks, a trimmer will start to become careless. Also, a man can easily go from climbing to a lift, but not vice versa. "You ask a man to come

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