

## Handle **hidden** installation **surprises**

**Buried drywall, lumber, pipe and carpet. Soil saturated with paint thinner and concrete wash. You're faced with more and more debris. What to do?**

BY MIKE PERRAULT

**D**uring the 12 years that Denise and Dave Losey have lived in Detroit, they've heard persistent rumors from neighbors that something was buried in their backyard. On Memorial Day 1999, while digging for an in-ground pool, they unearthed a 1953 Chevy.

While most landscape professionals would be surprised by a buried car, many are increasingly faced with an array of debris that makes their jobs difficult. Part of the problem stems from a booming economy in which construction contractors — often under tight deadlines — rush to com-

plete jobs and move on, sometimes failing to pick up after themselves. Or, to avoid trips to the landfill or cut corners, some bury everything from drywall to concrete, pipe and shingles.

"It's definitely a problem, and I'd say it's gotten worse over the years," says Kurt Kluznik, president of Painesville, OH-based Yardmaster Inc. He believes the debris problem is the result of a combination of factors: Contractors are hurried, they're trying to do more with less and, for some, their habits have gotten sloppier.

"And there aren't as many people supervising," Kluznik notes. "It used to be that an excavator came on site and he'd not only be there with a bulldozer to grade



Debris like this is becoming an increasingly common problem at job sites.

the property, but he'd also have a laborer to pick up debris, backfill sidewalks or clean up around the base of the foundation. It's rare to see a laborer nowadays."

To cope with unexpected obstacles,

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## What's in this dirt?

Common problems you may find on a site or in the ground include:

- ▶ Buried lumber and tree stumps, which can cause problems as materials decompose and become "a great spot for fungi to thrive," causing turf diseases such as fairy ring, says Jim Baird, Ph.D., turfgrass specialist at Michigan State.

- ▶ Broken glass, cutting blades and electrical wires — a safety problem.

- ▶ Petroleum-based chemicals and everything from epoxy and roofing tar paper to latex- and liquid solvent-based paints and paint thinners. "These might create some volatilization problems," says Frank Rossi, Ph.D., turfgrass specialist at Cornell University. "If it's very concentrated, that's going to severely restrict the root system."

- ▶ Even harsher liquids — tars, sludges, oils and cyanide compounds, for example — can seep into topsoil and subsurface soils and may require heating or washing with solvents to clean the soil, agronomists say.

- ▶ Other objects can severely restrict root systems, while such elements as lime in concrete can significantly alter soil pH levels. "This is not as big an issue with grasses as it might be with more deep-rooted plants — trees and perennials," Rossi says.

- ▶ Items impeding the normal function of grasses, from plastic sheeting that deters drainage to vinyl siding, can prevent plants from taking up water and interfere with proper drainage, adds Pete Landschoot, Penn State associate professor of turfgrass science.

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you need to think ahead, recognize potential problems and solutions, and know when to negotiate for additional charges.

### Expect some trouble

Veteran landscape installers expect obstacles. Typically the last contractors onto a site, they've learned to staff up and make up for lost time in the wake of other subcontractors who have fallen behind schedule. They've learned to monitor job sites before sending crews out so they don't waste time and manpower.

"Five or six years ago, we went when the contractor told us to get there," recalls Nathan Dirksen, production coordinator for Portland-based Dennis' Seven Dees Landscaping Inc. But now, to control expenses, improve efficiency and turn a profit, the company sends out a crew only when it's sure the site is *really* ready, adds David Snodgrass, company president. "If we're there too soon, a lot of times we're just spinning our wheels," Snodgrass says. "It's a battle, because they (contractors) want you there."

Weather is another obstacle, but one for which landscape installers can prepare. It may take creative thinking to use flotation tires on trenchers or tracked skid-steer loaders in the

mud. Trees can be pre-dug in the spring in anticipation of hot summer projects.

To adjust to the constantly fluctuating schedules of fellow tradesmen, Dirksen holds preconstruction meetings where he juggles schedules. He communicates with crews, notifying them that they'll need to be ready to scarify and put down amendments and compost to overcome heavy clays at a job site.

But what can throw off and unnerve even the most prepared landscape installers are the unexpected obstacles — everything from buried chunks of concrete and asphalt to mounds of crumpled drywall sheets, septic tanks and more.

### Where's the property line?

They come in all shapes and sizes, and many aren't even tangible. One of the most common problems that Charlie Bowers, president of Garden Gate Landscaping Inc. in Silver Springs, MD, faces in his area is locating property lines. "Even the surveyors sometimes have trouble finding the corners," Bowers says.

Homeowners unknowingly build fences and walls 2 or 3 feet beyond their rightful property lines, an obstacle that can make obtaining building permits difficult. He also unexpectedly encounters decades-old foundations and stairways in historic areas. "We run into all sorts of items in the ground," concedes Bruce Bachand, vice president of operations for Carol King Landscaping, a residential, commercial and industrial landscaping company in Orlando. "On the commercial side, drywall is a famous one; and concrete wash, where they've emp-





... tied the concrete trucks. You're always going to run into something in the ground."

Bachand's company has a policy to deal with the incidents. "We ask for a change order on anything below the ground that we don't know about, within reason," he says, noting that their contract states his company isn't responsible for anything underground that's not identified on site or engineering plans. "If it's a matter of extra time having to be taken, we usually photograph it."

Carol King employees carry Polaroid cameras in their trucks, snapping photographs of obstacles so construction site supervisors can see problems for themselves. "We tell them we're going to need a little extra money to excavate the area and put in proper fill for planting," Bachand explains.

Likewise, to head off potential problems and disputes, Garden Gate Landscaping sends employees to monitor sites and verify that post-construction cleanup is adequate, Bowers says. Snodgrass has employees write field memos outlining what needs to be done.

### Put it in writing

Notifying clients or general contractors that they'll have to pay more because of unexpected obstacles is not always well accepted, the contractors admit. That's why addressing these problems in contracts serves as an excellent vehicle to substantiate work order changes, says Ron Price, senior landscape architect at Greenscape Inc., NC.

A "hidden contingency clause" ensures that Garden Gate Landscaping is protected and can tack on necessary expenses, Bowers agrees. And Yardmaster's "concealed contingency clause" is one of 14 important clauses on the back of its contracts — it outlines when the company can charge extra to deal with hidden or unexpected surprises. Such clauses protect landscape companies, Bachand insists.

"We have run into cases where the fire department came in and installed underground piping for their fire hydrants," Bachand says. "It was an after-the-fact deal, so it wasn't in the plans. If you don't have some protection, a general contractor won't want to pay for those kinds of problems. Sometimes it's as simple as moving an item, or you may have to excavate."

Although it's critical to have such clauses in a contract, it's just as important to be on the lookout for onerous clauses in a client's or general contractor's contract, landscapers warn. Find ambiguous words and have them clarified. If possible, discuss them at a pre-construction conference. Identify representatives with authority to make changes in the field. If you expect cleanup problems, factor more charges in the bid.

### Don't be a victim

It may be human nature for construction contractors to eke out maximum profits on a job, but the corners they cut could end up costing you, warns Saeed Assadzandi, a Penn State turfgrass program graduate and certified golf course superintendent at Whistling Straits Golf Course in Sheboygan, WI.

In a 1999 presentation at the Future Turf Managers Seminar sponsored by Textron Turf Care And Specialty Products in Racine, WI, Assadzandi showed slides of golf course grow-in and installation projects gone bad — due to contractors who cut corners on drainage and erosion measures.

Landscape professionals like Assadzandi agree that spotting potential obstacles to installation early helps prevent toe-to-toe battles that can permanently damage relationships with other contractors or clients.

Failure to take the time for a detailed site investigation can kill profits, they add. In



## Tools for negotiating

Maybe more important to good on-site relations is keeping lines of communication open between contracting parties and management, particularly when it comes to change orders. Kurt Kluznik of Yardmaster Inc., Painesville, OH, says pre-job walk-throughs with clients often clear up any potential misunderstandings or assumptions, and such discussions can lead to intervention.

Often, ironing out problems comes down to negotiations, landscape professionals say. To be a successful negotiator, don't underestimate your opponent. Good negotiators also say it takes a combination of:

- ▶ planning skills,
- ▶ verbal grace,
- ▶ patience,
- ▶ self-confidence and
- ▶ calm.

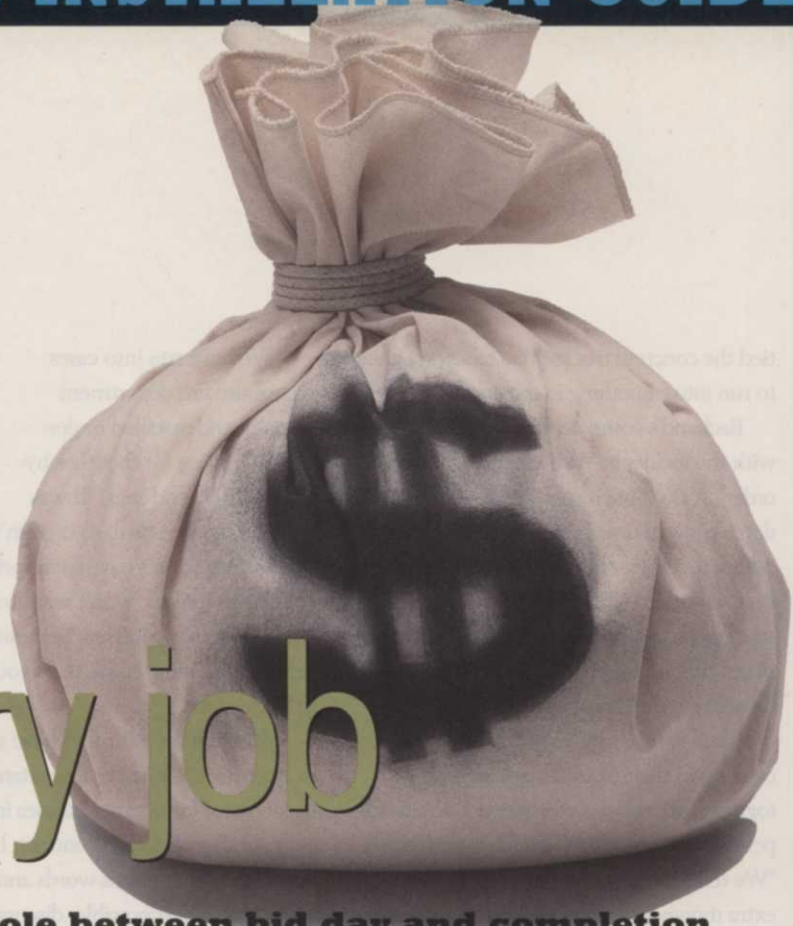
... some cases, if you haven't done your homework and negotiated up front, you may be barred from recovery of additional costs associated with differing site conditions.

"Contractors by nature are used to negotiating," Kluznik says. "They're used to disputes. Sometimes we're the ones who are inconveniencing other contractors. If we can trade some things off, work with them, that's the win-win situation."

— *The author is a former associate editor of Landscape Management now living in the Denver, CO area.*



# Make money on every job



**Profits can fall into a black hole between bid day and completion. These seven steps can help you stay profitable**

BY ED, TODD AND AARON WANDTKE

**A**lthough making money is why many Green Industry company owners start their own business, are you really making money on all of your work? Let's look at some operations that are working 100+% daily, are paying employees for eight hours or more each day and often don't know how much money their company is making. Let's also focus on several steps that will identify the profitability or lack of profitability of each job, which will lead to higher profits for your firm.

## **Making money on each job**

### **1. Take a picture of the property**

Whether a landscape designer, company owner or maintenance sales person visits a property, take a picture for the file. That will help the salesperson back at his

or her desk identify the work on the picture, avoid confusion and offer a visual image for the crew chief and the salesperson. The photo also helps you or your staff avoid needless trips to a property to start the job and allows a crew to head out to a property confident about what work needs to be done.

### **2. Define the job**

Whether a job is maintenance or installation, define it completely. Do not use terms like "usual," "standard" and "eyeball." Rather, be specific about the tasks to be performed. For instance:

- ▶ Provide a drawing of the property and indicate what work will be performed in each area.
- ▶ Identify one-time and weekly tasks.
- ▶ Specify measurements as much as possible (for instance, the number of inches of mulch, etc.). The more detailed

the instructions, the easier it is to perform the work.

### **3. Organize the work**

Inefficiencies add up quickly when installation, mowing and maintenance crews hit the road. A simple 10-minute delay on a three-man crew amounts to 30 minutes of paid time during which the crew isn't working. Scheduling or sequencing jobs can be a critical factor in lowering non-productive time.

One landscape maintenance firm discovered that its practice of routing a mowing crew across a four-lane street without a signal light caused the crew to increase its daily work time more than 30 minutes. By resequencing the order of the mowing jobs, the company was able to perform one more job during the day and decrease the time the crew was working.

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#### 4. Make logical work sequences

Ask yourself: What is the sequence of tasks needed to be performed on each job? Mowing crews need to have established duties for each crew member, depending on the crew size and experience of the employee. When tasks vary on a property from week to week, as is the case in some areas with mowing and maintenance customers, you may need to give specific instructions as to the extra tasks to be performed on the work order each week.

In addition, one of the crew members should be responsible for performing the additional task when it does occur. We frequently see mowing companies having a standard schedule of properties to be done each week with little notice or indication that additional tasks need to be performed on an individual property that week. Power edging, vegetation control, mulch touch up, weeding, fencerow trimming and other tasks are inserted at different weeks. Standardize these tasks for the company on a weekly basis by having someone do the same extra task once a month for all properties on the same week of the month. This may also help reduce the incidences of missed work.

On a recent renovation project we visited, the landscape designer, landscape crew chief and irrigation crew chief were all on site. As the landscape employees worked, the designer was trying to anticipate issues like where to place removed plant material, where to dump new soil and what to do if it rained, as debris would only be removed every other day. At the same time, the irrigation crew chief stood around waiting for the area to be cleared to

place sleeves and downspout new runs, because the old lines were being torn out as part of the renovation work. We saw two or three people waiting to do their work during the hour we were on site. Apparently, the job was being planned as the work progressed. Since this was a job that would run for a projected five days, the designer wasn't concerned that the crew would bring the job in on time. We figured that one job could have been performed with a 45-hour savings from the budget!

#### 5. Have only ONE leader on a job!

Crew chiefs like to be in charge of performing the work on landscape jobs, and often will appear to take control of everything. All your employees need to understand who is the leader of different types of work. While all employees need to be trained and competent, and while decision-making needs to be placed at the lowest level of competency in an organization, have a clear leader on site.

#### 6. Communicate the budget

Providing a crew chief with the hourly budget for a job can help the project come in within the budget limitations. When people know the number of days or hours to work on a property before starting the work, they have time to plan for efficiencies. Crew chiefs manage employees on a job much better once they know the scope of the project and the total budgeted time for the job. Many companies are finding that a great incentive is to pay a crew for part of the budgeted time for a job when they can finish the job under budget.

#### 7. Evaluate the completed job

When a job is completed, it's important to evaluate its profitability. Daily and weekly analysis and monthly highlights can

be revealing. It also helps to have all your employees concerned with the profitability of jobs.

During the quarterly meeting at one contracting firm, the employees and managers got into a fruitful discussion of the profitability of landscape and mowing jobs. It was amazing to hear the ideas the employees came up with to improve job profitability in the future. The mowing crews' ideas were especially insightful, as the suggestions resulted in savings each week.

#### Solving the information gap

It is time consuming to watch each of your firm's jobs to determine the costs associated with the completion of the work. In this era of improved cost accounting systems, you need to be able to isolate your profitable jobs from the unprofitable ones. But how can you be sure? Two landscapers had similar questions. We devised solutions to their information gaps.

One owner had two crews doing landscape installation work. The average job lasted 1 to 1.5 days. Each week, the owner had to make payroll and regularly needed to borrow from the line of credit. After analyzing his jobs and the costs of the jobs, based on his quotes to the customers, he realized several problems:

► The plant material that was specified and delivered was different.

► Looking closer, he found that the cost estimate sheet for plant material did not reflect what the local supplier had in stock. Consequently, his jobs used higher priced materials on a regular basis. These two situations alone are problematic. He was less profitable from the get-go.

Next, he examined the labor hours for





all of the jobs during the month. He discovered that the time needed to perform the work was longer for the crew when the owner was not present. When he studied this in more detail, he realized he needed to charge a 25% premium for jobs where he wasn't present because of the longer hours needed.

Like others, this owner assumed his job would be profitable when the jobs were bid. And, like others, he found that this profit would not be realized when the jobs were completed.

This is especially true when bids are

placed and jobs are signed one month or more before the start of the work. Likewise, long-term jobs such as mowing and maintenance need to be monitored closely to make sure that the annual hourly budget is what is truly needed to perform all the work involved in a bid.

**What's your score?**

As you look back on the past year, how faithful have you been in evaluating the profitability of your jobs? Did you review each job's profit or loss? Do you know why you had a profit or a loss?

What did you do with the information? All company owners have great plans and ideas to make each year more profitable than the last, but they seem to get involved with the day-to-day issues. Often, the day-to-day work keeps you from analyzing how and why you're either making money or losing it. If this happened to you in 1999, get some help with job profitability analysis.

— The authors provide Green Industry consulting services for Wandtke & Associates Inc., 614/891-3111.

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Circle 126



# Getting it together

## Landscape construction and installation contractors explain how to become a lean, mean efficiency machine

BY JASON STAHL /  
MANAGING EDITOR

**L**andscape construction and installation projects can be complicated, but let's face it: you don't have to be a rocket scientist to make sure they go smoothly.

Most contractors would say a project went "smoothly" if it was completed on time, a quality job was done, a profit was made and the customer was pleased.

But that's easier said than done, right? In these booming times, you're busier than a one-armed backhoe operator, and the least bit of inefficiency could send your project tumbling down. You've got to make the most of your time because you've got a tight schedule and there are no laborers to be found anywhere.

There are answers, and they come from the guys with dirt under their fingernails who know that an auger isn't the nickname of a Texas football team.

### Integration and the machine

Roger Braswell knows what efficiency (or lack of it) can mean to an operation. Back in the late 1970s, when he founded Southern Tree & Landscape Co., he saw lots of headaches being caused by the landscape and irrigation process being a two-contract operation.

"There were a lot of coordination issues and a lot of responsibility issues on things like plant livability," Braswell recalls. "Each contract pointed to the other."

By the late 1980s and early 1990s, it became standard to have both landscape and irrigation jobs bundled to one landscape contractor, and that contractor would then subcontract the irrigation. Eventually, landscapers went into the irrigation installation business and did all of the work in-house. Still, the productivity was not there.

"First, you needed to grade everything, then rough in your irrigation and set your sprinkler heads, then plant shrubs and mulch the beds, then clean up the landscape, then energize the whole irrigation system," Braswell explained. "The going back and forth was a timing nightmare because one guy was always waiting on the other."

What Braswell decided to do at Southern Tree was integrate the process to improve productivity — equip a crew to do the whole job without having to mobilize and re-mobilize.

A lot of contractors have followed Braswell's lead on integrating the landscape and irrigation process, and

what makes their job easier is the Toro Dingo digging system. He imported this system from Australia in July 1995, and sold the exclusive rights to manufacture the Dingo to Toro in 1997.

The Dingo allows contractors to accomplish tasks faster with fewer workers. Described as a mobile hydraulic power plant, it has over 35 attachments, including augers, buckets, backhoes and tillers. Braswell has recently started a new company called Powerhouse Equipment, Fort Mills, SC, dedicated to dealers who sell the Dingo and its attachments and teaching contractors how to increase their productivity.

Productivity aside, Braswell believes landscape companies have bigger challenges facing them in the future. "It's going to be interesting to see how nimble companies can be at turning from new construction to renovation and understanding how to market that," Braswell says. "Also, companies should be thinking about how to prepare for a downturn in the economy."

Roger Braswell started a new firm.





"The idea is to keep everyone happy. If your customers are happy, you'll get paid and you can move on to the next one."

— Chris Aldarelli, president, Aldarelli Enterprises

### Communication equals efficiency

At Aldarelli Enterprises, Ocean, NJ, communication is the name of the game. "Our foremen are out there communicating with homeowners and those in charge of commercial sites all the time," Chris Aldarelli, president, says. "They touch base on a daily basis, step by step, so there's no going back after a job is complete. We're using a vast variety of people who speak to customers to keep everyone on the same wavelength and keep everyone happy. If your customers are happy, you'll get paid and you can move on to the next one."

Communication also occurs within the crews. Aldarelli schedules meetings every day to go over the next day's activities, and most duties are scheduled two to three days in advance. He needs to know what drivers are picking up, whether or not there are orders in for materials and how long it will take to get those materials. Every Thursday, he crunches numbers to make sure the company is doing okay financially. Wasted time, he says, is costly.

"If I lost an hour a day, I would lose \$1,400 a day and \$250,000 in a year," Aldarelli says.

One thing he has done to save time is install fuel tanks on company property, which he says saves about 20 minutes per crew per day. At the end of each day, the crews can gas up all of the vehicles so they are ready to go the next morning.

### Extending the workability of sites

Tim Korte, vice president of operations for The DiSanto Companies, Cleveland, OH, says that properly matching equipment with tasks maximizes productivity. He really likes

equipment that can be used in soggy conditions, especially since the ground in Ohio can be wet through May.

"Four-wheel drive tractors, Pettibone forklifts, concrete buggies and soil slingers all are really useful to us because they extend the



Tim Korte says that a landscape firm can improve profits if it can work on wet sites.

workability of a site," Korte says. "Access to a site is what keeps us productive in spring, so any time we can get gravel or top soil to areas that ordinarily wouldn't be workable or do our work with machines that can extend out from sidewalks, we're grateful."

As far as scheduling is concerned, Korte says there's never an empty hole. "We have a job site for the guys to go to no matter what the weather's like. If one site is closed, we can go to another."

### Get with the program

Pete Estournes, operations director of Gardenworks, Inc., Healdsburg, CA, has

turned to the Jim Houston Estimating Program as a way of getting organized and becoming more efficient. A business program designed specifically for landscape companies, it shows how to set up a budget overhead recovery system and budget estimating system, breaking it out among different field operations. "If you dig a 100-ft. trench, it says how long it will take and how you can track production rates," Estournes explains.

Gardenworks has also signed on to the Pro Challenge Training Program, which locks the company into a year-long commitment to employee training. "Some of the things we have to come up with are job descriptions to use for performance reviews, criteria and goals for our employees to follow so they can get to the next level, and Spanish-English classes," Estournes says.

As if two programs aren't enough, Estournes and his partner also subscribe to a Project Manager program that allows them to be more proactive in scheduling and gives them timelines to organize and dispatch crews.

### Contracting out saves time, too

Terry Culver, director of operations, ILT Vignocchi Landscape Architects & Contractors, Wauconda, IL, has learned enough lessons to know how important it is to have the right equipment for a job.

"So many times in the past we would look at a job and say we could do it because we had the equipment," Culver says. "But afterward we see that if we had had a

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"If things aren't done at the job site, we'll give the general contractor a list of things to be done before we go out there again."

— David Snodgrass, president, Dennis' Seven Dees Landscaping

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piece of equipment that was more suited to the job, we could have completed the project in half the time. Now, we contract out those projects."

Culver's current equipment includes a John Deere skid steer ("It's more efficient because it has a greater lift capacity," he says), articulated front end loader ("Fabulous for yardwork and snowplowing") and crawler, and Ford backhoes and tractors.

to make operations even more efficient.

Communication is a big issue, too, which is why Peabody's uses Nextel radio communication. "Supervisors have to report in at midday to the production managers about what they are going to need and what's going on," Peabody says.

### Crunching numbers

Like Gardenworks, Realty Landscaping, NJ, manages its projects with an estimating program. "We realized that, in the past, we were telling our guys to just go out there and

find good labor, but one of the company's biggest problems is getting its clients to make commitments to projects quick enough so that plant material can be obtained in a timely manner.

"The owners of our company anticipated the problem of getting plant material, so they bought blocks of it early on," Plechtner says. "Still, it's hard to get things like red maples, and costs are incredibly high."

### Preparation is key

David Snodgrass, president of Dennis' Seven Dees Landscaping, Portland, OR, is all for preparation. Just ask his employees, who every morning find themselves standing in a circle looking at each other.

"We do stretching exercises," Snodgrass explains. "It brings us together and helps us bond and establish our culture. Even though it may not be efficient to have everybody report to the home office as opposed to the job site first, I think it pays off huge."

Snodgrass also prepares his troops for each project with preconstruction conferences. Whether it be a small project or large project, the salesperson, supervisors, foreman and estimator all gather in the same room to fully understand the project before going on site.

"In the past, we would go to a job site that wasn't ready, or we weren't ready, and we would end up wasting a couple of days," Snodgrass says.

With commercial sites, Snodgrass' staff will ask the general contractor if certain things have been done in preparation for their work. Even if the contractor says yes, his staff will go out and check on it themselves. "If things aren't done, we'll give the general contractor a list of things to be done before we go out there again," Snodgrass says.

## Keys to an efficient operation

1. Know the project inside and out before arriving at the site
2. Make sure all materials are ordered and equipment is obtained
3. Make sure the general contractor has prepared the site for you
4. Have workers report directly to site to save time
5. Expect weather problems and prepare accordingly
6. Keep in constant communication with workers, managers and customers

### No punching in at this office

Some time back, it became obvious to David Peabody, president, Peabody Landscape Construction, Columbus, OH, what he needed to do to make his employees' work day the most efficient it could be: direct job site reporting.

"We get them straight out to the work site instead of bringing them here to the office first," Peabody says.

The other part of that time-saving maneuver is preparation. Peabody makes sure that all supervisors have their full hours and full job costing reports ready, and that they have in hand what they need to get the job done. Managers are located in different areas to expedite the flow of materials to job sites. He is considering opening up a satellite office on the city's East Side

get the job done without giving them any goals to shoot for," says David Plechtner, regional manager for Realty Landscaping.

Realty's estimating program will tell the company how many labor hours will be spent on any exterior work project conceivable. Then, the job is estimated on a factor system, and finally on a cost/plus basis.

"What we're left with is a list of materials and total amount of man hours needed," Plechtner says. "Our foremen fill out their time sheets, those get loaded into a computer, and we can then track our productivity."

As far as making sure no time is wasted during the work day, Plechtner says that his company will often set up a satellite office on a project site where crew members can report directly every day.

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First Products' Seeda-vator can handle primary seeding and overseeding, and uses a patented swivel hitch which allows the



unit to turn around plant beds and other obstacles without tearing the turf.

Call 800/363-8780 or [www.1stproducts.com](http://www.1stproducts.com) / circle no. 282

## Crawler carrier

The upper structure of Komatsu's new crawler carrier can rotate 360 degrees, allowing forward-facing operations and eliminating the need for u-turns. Hand levers and joysticks are used to control



forward/reverse direction and the rotation of the upper structure. Driven by a 135-hp Komatsu engine, it has an operating capacity of 13,200 lbs., ground clearance of 19 in. and 3 psi ground pressure.

Call 847/837-2447 / circle no. 283

## On the edge

Lightweight and compact, the Scag edger features a 10-in. milled-edge blade for deeper edging and longer life.



It has no moveable parts near the drive head, no springs to break, and no sliding booms or tilt quadrant to wear out. The industrial/commercial 3.5-hp Briggs engine powers this baby up nicely.

Call 920/387-0100 / circle no. 284

## Entry-level backhoe

JCB has come out with a backhoe loader (214Se Series 4) to meet the needs of 14-ft. class, entry level customers. It has 4-



wheel drive, 4-wheel steer, four equal-size tires, 86 net hp JCB diesel turbo engine and SynchroShuttle transmission.

Call 888/742-5522 or [www.jcbna.com](http://www.jcbna.com) / circle no. 285

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## ▲ A real swinger

The 4-wheel drive Swinger 3000 is a versatile, utility size articulated tool carrier/loader. A 25 gpm auxiliary hydraulic circuit and 80-hp John Deere Powertech diesel are standard, and a universal tool carrier plate accepts most skid steer attachments. An oscillating rear axle provides frame stability.

Call 715/835-3151 or [www.nmc-wolard.com](http://www.nmc-wolard.com) / circle no. 286

## Spreading 'n spraying'

C & S Turf Care Equipment's SS8030 Turf Tracker spreads and sprays one acre in 11 minutes. It features a zero turning radius, 3-speed, 150-lb. capacity hopper, and 12-ft. breakaway spray boom.

Call 800/872-7050 / circle no. 287

## Double trailer

J & J Truck Bodies and Trailers' new double dump trailer can carry a gross vehicle weight of 158,000 lbs. It has two lightweight aluminum bodies with hydraulic systems that allow drivers to easily discharge loads of construction materials, gravel, asphalt, sludge and sand.

Call 814/443-2671 or [www.jjbodies.com](http://www.jjbodies.com) / circle no. 288

## John Deere tractors

John Deere has several tractor models to choose from: 5105/5205 (Powertech® diesel engine, SyncReverser™ transmission, independent PTO, optional four-wheel drive, 22.4-gal. fuel tank), 4700 (48-



hp Yanmar diesel engine, PowrReverser™ transmission, four-wheel drive, independent PTO, lateral float rear hitch arms, planetary final drives), 790 (30-hp diesel engine, sliding gear transmission, optional four-wheel drive, optional selectable PTO), and 990 (40-hp Yanmar diesel engine, standard collar shift transmission, optional four-wheel drive, planetary final drive).

Contact the John Deere Inquiry Department, P.O. Box 12217, Research Triangle Park, NC 27709 / circle no. 289

## Tough skid steers

Case Corp.'s eight 1800 Series and XT Series skid steers offer horsepowers of 30 to 85, rated operating loads of 885 to 3,150

lbs. and operating weights of 3,107 to 8,800 lbs. All XT Series models have ergonomically designed excavator-style controls, push-button parking brake, superior operator sight lines and a suspension seat with lumbar support.

Call 414/636-6011 or [www.casecorp.com](http://www.casecorp.com) / circle no. 290

## Reinforcement

Versa-Lok Retaining Wall Systems now has the Versa-Grid™ for soil reinforcement for



segmental retaining walls. It provides additional soil reinforcement necessary for structural wall stability.

Call 800/770-4225 or [www.versalok.com](http://www.versalok.com) / circle no. 291

## Rollin' sod

Ricard's big roll installer handles a variety of big roll applications. There are two varieties: 3-pt. hitch mounted and skid steer loader quick attach. They come in 24-, 30-, 42- and 48-in. widths. The operator does everything from the seat. Hydraulic cylinders open and close the tapered cones that grab the rolls by the plastic tubing.

Call 218/281-2120 / circle no. 292

## Borderscapes

Borderscapes has three useful products for the landscape constructor and installer. Borderpathr holds pavers to create flowing curves or straight borders. Wallpins inter-



locking retaining wall units are designed to achieve consistent alignment. Brickholdr is a versatile brick/paver edge restraint system that combines fast and easy installation with the latest in technology.

Call 800/282-4226 or [www.border-scapes.com](http://www.border-scapes.com) / circle no. 293

### This plow is the boss

The Boss Skid Steer Power-V Plow offers year-round use, from snowplowing in winter to pushing dirt in summer. It



adapts to V, scoop, and straight positions, plus it has a natural side-to-side tilt which can be converted to a hydraulic power tilt by adding an optional hydraulic cylinder. It mounts on all skid steers with a universal tool carrier.

Call 800/286-4155 or [www.bossplow.com](http://www.bossplow.com) / circle no. 294

### Mulch like crazy

Goosen Industries' LawnMaker hydro mulching machine provides a one-step efficient method for seeding, mulching and fertilizing. It features a full length mechanical rotor shaft for thorough mixing of ingredients. Material is disbursed with a slurry pump which minimizes clogging and allows course materials to be easily distributed.

Call 800/228-6542 / circle no. 295

### Layin' line

The Line-Ward L-2 line layer is perfect for the installation of underground sprinkler lines with a simple blade change. It features rubber tracks for traction and blade drive system that minimizes lawn disturbance. At

26-in. wide, it can reach tight spots.

Call 800/816-9621 or [www.lineward.com](http://www.lineward.com) / circle no. 296

### High horsepower

Caterpillar's new 228 and 248 skid steer



loaders feature high hydraulic horsepower to handle tools such as cold planers and stump grinders. The 228's and 248's operating capacities are 1,500 lbs. and 2,000 lbs., respectively. Each model has a Cat 3034 direct-injection, 4-cyl. diesel engine. Other features include pilot-operated joystick controls, more than 30 types of Cat work tools, and hydrostatic transmission that optimizes the hydraulic/rim-pull match for greater productivity.

Contact Caterpillar Inc., P.O. Box 10097, Peoria, IL 61612-0097 / circle no. 297

### The Extractor

The Extractor™ is a mechanized fork lever that can extract entire established tree and shrub root systems for transplanting. The manufacturer of the Extractor says it has lower overhead cost than the "ball and burlap" method, leaves root systems intact for higher survival rate, and is versatile enough to be able to remove stumps, light rocks, con-

crete and asphalt. With the Extractor, there is little or no need for hand labor, and speed and efficiency enhance plant survival and eliminate human error.

Call 800/950-6186 / circle no. 298

### Claw at composting

Brown Bear Corp.'s attachments fit skid steer loaders, farm tractors from 35 to 150 hp, articulated and crawler loaders and dozers. They're perfect for composting grass and leaves (yard waste), chipped wood waste or manures into odor-free, dry organic fertilizer and humus.

Call 515/322-4220 or [www.brownbearcorp.com](http://www.brownbearcorp.com) / circle no. 299

### Optimal Tree Spade

Billed by Bennett & Bennett Enterprises as "the world's most compact and technically advanced tree spade," the Optimal Tree Spade is 30 to 50% more compact than other tree spades. It comes in sizes ranging from 16-in. to 120-in. in diameter.

Call 865/436-2008 or [www.optimal-treespades.com](http://www.optimal-treespades.com) / circle no. 300

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## Do-it-all power unit

Mertz, Inc.'s TrackMaster can do most everything a skid steer can do but also



squeeze into hard-to-reach places. Its width can be reduced to 30 in., and ground pressure is dispersed evenly to minimize lawn damage.

Call 800/654-6433 or [www.mertzok.com](http://www.mertzok.com) / circle no. 301

## So much at stake

Arborlock Staking Systems introduces Arborstakes and ArborAnchors to its professional tree staking line, products that suit any tree up to 5 in. in caliper. Both use the tree-friendly Arbor-Tie strap combined with tensioning buckles and ground-gripping anchors for both hard and soft soils.

Call 305/378-6153 or [www.arborlock.com](http://www.arborlock.com) / circle no. 302

## Soil blender/mixer

The Royer model 466 soil shredder is ideal for large scale topsoil blending and mixing applications. The shredder belt churns and aerates soil while incorporating a combination of peat, compost, sand or loam. All unwanted debris fill is automatically separated from the mix and removed.

Call 717/866-2357 or [www.royerind.com](http://www.royerind.com) / circle no. 303

## Precise seeding

The Greenseeder from Redexim Charter-

house can plant all seed types from rye to bent. Using interchangeable gears, the machine can be set to give a precise seed dosage. All seeds are buried at a pre-set depth for maximum germination rates. In addition, the Greenseeder plants at a close and uniform spacing of 1.5 in., at speeds of up to 6 mph. For maximum flexibility, it can be mounted on a three-point linkage or trailed behind any prime mover; no PTO is required. An optional two-wheel hydraulic lift transport frame allows the Greenseeder to be converted to a "Tow-N-Seed" for pull-behind use.

Call 800/597-5664 / circle no. 304

## A cut above

Classen Mfg.'s Model SC-18 self-propelled 18-in. sod cutter is powered by either a 5.5- or 8.0-hp Honda OHV engine and will



cut sod up to 2 1/2-in. deep. It can easily change from an 18-in. cutting unit to a 20-in. or 12-in. cut with optional conversion kits. Other features include drive wheels with a knobby tread design to eliminate dirt build up and ensure better traction and a twist grip throttle which goes to idle and stops machine movement when released.

Call 402/371-2294 / circle no. 305

## Compact skid steer

Finn Corporation's Eagle 250 compact skid steer has a lifting capacity of 650 lbs. and a maximum operating height of 97.5 in. It features full hydraulic power to all functions simultaneously. The unit is self leveling, and a quick-change feature al-

lows for quick attachment changes. Dual fuel tanks allow a full day's work without refueling.

Call 800/543-7166 or [www.finncorp.com](http://www.finncorp.com) / circle no. 306

## DownUnder loader

The Kanga mini skid steer loader is a compact, multi-purpose machine capable of laying turf, trenching for drainage, planting trees, digging/leveling/transporting soil, fencing post holes, laying irrigation systems, horizontal boring and snow plowing.

Call 918/459-2137 or [www.kanga-loader.com](http://www.kanga-loader.com) / circle no. 307

## Awesome add-ons

Ammbusher's new LOBO post-guard rail puller is built to fit any skid steer, has 17,000 lbs. of breakout pull force, can be operated by one person, and pulls wood or steel posts in seconds. Also for skid steers, Ammbusher's rotary cutter mulches tall grass and brush and cuts material up to 3 in. in diameter.

Call 800/432-5955 or [www.amm-busher.com](http://www.amm-busher.com) / circle no. 308

## Mini-loaders

Coyote articulated loaders are powered by water-cooled diesel engines from 22- to 50-hp and can access almost any area. Its Z-bar linkage offers leverage for high breakout force and faster lifting speed. A hydraulic locking system secures attachments without the driver having to get out of his seat.

Call 330/650-5101 or [www.coyoteloaders.com](http://www.coyoteloaders.com) / circle no. 309