CONSTRUCTION LASERS: Lighting the way
More contractors turn to lasers as cost-savers
In wall and ceiling applications

A lot of wall and ceiling contractors have seen the light.
And that means they’re putting aside such traditional industry standbys as the plumb bob, the chalk line, and the water level in favor of a more modern way to handle straight line and elevation problems.

The new way is the laser beam.
It is estimated that there are some 20,000 lasers in use in the construction industry today and the numbers are increasing as additional contractors learn of the instrument’s benefits and versatility.

“Any application by a wall and ceiling contractor where a straight line or an elevation control is needed can be served by a laser,” explains Glen Blount, whose Construction Laser Division of Blount Industries, Inc., North Little Rock, Ark., manufacturers and sells the Tru-Site.

“Instead of the older methods, the laser is a time saver—around a one-third savings—because a lot of checking and re-checking are eliminated with the laser,” says Roland Jandron, marketing manager for Construction Laser System, Inc., of Los Angeles, whose AccuSweep is well known to industry contractors.

“Your productivity gains in acoustical ceiling work generally run from at least 10 per cent to as high as the 40 per cent that some contractors claim,” states Michael Kahn, product manager and laser specialist for Spectra-Physics, Mountain View, Calif. “It takes only a few minutes to set up a laser and once a target is set on the grid the installer is free of any external connections.

No Re-setting
““This means he can tell immediately whether the grid is level and simply proceed from there without ever having to reset anything again.”

What is so magical about a laser?
Most engineering experts contend that while the technology is high the laser is in fact a simple device. Basically, it consists of light bouncing back and forth between the mirrored ends of a tube, one end of which has

What makes the laser so valuable for wall and ceiling application is the ability to set the unit once as shown in the top photo, and then proceed to install a complete wall or ceiling grid merely by aligning the work installed with a target (bottom photo) which is struck by the straight, pencil-thin laser beam.
less reflecting strength than the other.

As the light elements continue to bounce back and forth they line up in a single direction until attaining escape velocity and then come pouring out of the weak end where a lens system focuses the single frequency single direction light into a pencil-thin beam capable of holding its parallel integrity for great distances.

Such a beam offers enormous opportunities for straight line applications and it was this virtue which led Glen Blount and a colleague, J. C. George, to manufacture a laser in the spring of 1964 for the purpose of laying sewer pipe lines.

The experiment was successful and pipeline work is today a significant application but it was not until the late 60's that the laser began to penetrate the construction industry in significant numbers. Then about five years ago Laser Alignment, Inc., of Grand Rapids, Mich., originated and developed a technique of using the laser beam to install acoustical grid ceilings.

Acoustical ceiling contractors were quick to observe the speed, ease and accuracy advantages of the laser over the traditional water level technique and this accounts for the fact that more acoustical contractors utilize lasers than almost any other kind of contractor.

“The advantages are strictly in the time and material savings,” explains Ned Everett, sales manager for Laser Alignment. “You need at least two men to operate the water level, but one man can set up the laser in a few minutes and a crew can go ahead with the ceiling work.”

Other Uses

While the efficiencies of the laser in ceiling work have been validated many times, contractors are increasingly using the instrument in access floors, drywall work, steel studding, decking elevations, column and curtain wall plumbing, and even sprinkler systems.

“Right now,” says Blount, “its recognized advantages are in ceiling and access floors because elevation control must be done so many times.

“But, in my estimation, it is equally useful in any application where a straight line or elevation precision is important because the laser can do it better and faster.”

This accounts for its expanded use among drywall contractors who find the laser a convenient instrument for laying both the bottom and upper tracks.

“The laser’s advantages,” says Everett, “become apparent in a commercial application where the distances are longer. You can eyeball a small house, but when it comes to commercial layout work, tracks, and really long walls the economies are there.”

For a wall and ceiling contractor interested in considering the use of a laser, there is always the problem of a cost trade-off. Plumb bobs don’t cost much and at a price of between $2,000 and $8,000 per unit, a laser is no cheap instrument.

And there is always the other problem of introducing the instrument to journeymen who are quite satisfied with the present way of doing things.

As for the price of lasers, plumb bobs may not be expensive but the journeymen who use them are. So, when a journeyman can learn to set up a laser in minutes and then, without the need to reset or level, put in a

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As it is with any new and sophisticated technological instrument the laser has spawned a number of misapprehensions about its safe use, especially its effects on the human eye.

The laser is really little more than a light instrument with the unique capability of projecting a straight beam in only one direction with the sides of the beam remaining virtually parallel over long distances.

All laser manufacturers agree that the beam’s intensity and density is the only legitimate danger and this can usually be avoided by simply avoiding to look directly into the beam—just as one avoids staring at the brilliant light of an arc welding operation.

Most lasers in use in construction also are very low power units, ranging from one to three milliwatts. All construction lasers are powered by a 12v battery, pulling 2-3 amps per hour. And the lens system used to focus the beam is designed so that light danger is minimized.

Still, the Occupational Safety and Health Administration, which is now preparing new regulations on laser use, does require essentially that the later be turned off when not in use, that a standard later warning placard be posted when it is in use, and that the people using the laser carry operators’ cards.

Some state requirements are stiffer than the federal regulations but here again they usually involve eye protection and registering the instrument and/or sites where being used.

Even where eye protection requirements are not mandatory and employees are concerned about eye safety filter glasses are available which reduce the light some 40-50%.

The best advice that manufacturers offer is to check with them for power output specifications and act accordingly. At its worst, a 3 milliwatt beam of one-half inch diameter is only a potential danger—and can be avoided as easily as avoiding the dangers of arc weld flashing.

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ceiling, a wall, or a floor merely by having the beam hit a target in the desired vertical or horizontal plane—the savings mount up.

Develop Liking

And journeymen, once they become accustomed to working with a laser, quickly develop a liking for it.

“Admittedly, it’s not for the small contractor doing small residential jobs yet,” admitted Jandron. “because there is the need to justify the cost of a unit or a rental-purchase program.

“But contractors who do use the laser tend to become multiple users, so the benefits are evident.”

While the laser has only a 10-year history in the construction industry, it has enjoyed a rapid increase in use and recognition. Some city and county governments are now writing the use of lasers into their specifications.

A more widespread use within the industry is expected to bring the price within the budget reach of more contractors while research and development should lead to smaller, lighter, and even more sophisticated units engineered specifically for contractor applications.

For the contractor looking for the light, the laser might have something to offer.