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Concrete Contractors

Not too many years ago, the contractor himself set up to prepare the concrete required for a given job. Today there are very few areas in which the contractor cannot find a ready-mix plant available to furnish the concrete required for any job. This means a lot to the contractor and owner of a structure, in that the contractor does not have to order, stockpile and handle the materials needed. But the responsibilities for a concrete job do not lie entirely with the ready mixed concrete producer who supplies a job. Some responsibilities are those of the purchaser-contractor, particularly if there is a specification involved. The contractor's three main responsibilities are: (1) the contractor should discuss the specification, if any, with the ready-mix producer. (2) He should alert the producer of his plans for the week. And (3) he should plan the access and approaches to the job for the producer's trucks, with ample time for leveling grading, backfilling of trenches and removal of stockpiled materials. He should also provide access to the jobsite and notify the producer's representative in time to permit inspection. When orders are placed for delivery, both the contractor and the producer's dispatcher should be honest and specific in their respective statements to each other. The contractor should also alert the producer in the morning with an approximate idea of the next day's schedule, subject to confirmation or cancellation later in the day. It is the contractor's responsibility to see that the orders are placed not later than 3:00 pm the day before and that they give a definite quantity and approximate rate of unloading time required. He should also make accurate computations of the quantities involved in each order. Finally, he should see that the producer be given information about the mix, color and type of cement desired, type of truck best suited, job telephone, whether it is "weather permitting" or "rain or shine" placement, height and width of access, the best route of travel, and the exact street address.

Be a Concrete Paving Contractor

What steps should I take to become a concrete paving contractor?

Step 1: Earn a Bachelor's Degree

Civil engineering degree programs offer a strong technical background for those interested in becoming concrete paving contractors. They provide courses in chemistry, physics, calculus, materials, fluid mechanics, and engineering related to soils, structures, and materials. Specific courses for prospective concrete paving contractors cover concrete design, project management for pavements, distress identification, structural evaluation, and rehabilitation alternatives. Students who aspire to concrete contracting can take business electives to provide the basic accounting and writing skills required to keep a knowledgeable eye on business operations. A

critical aspect of a contractor's job is preparing and submitting bids on jobs, and these degree programs also offer courses that include cost analysis methods and laws related to government contracting.

It's a good idea to do some work as a concrete paving laborer. The engineering student can gain valuable hands-on experience in concrete paving by working as a laborer on concrete paving projects during the summer months. Working on job sites will help anyone learn more aspects of the business and be a more knowledgeable contractor.

Step 2: Obtain Experience

If an aspiring concrete paving contractor does not complete a bachelor's degree program, the training and experience required for such a career can be obtained through formal apprenticeship programs or by starting at the bottom as a laborer and working one's way up through the ranks. Unions and technical schools offer apprenticeship programs that cover some aspects of this career field. There are programs for heavy equipment operation, concrete work or laborer apprenticeships.

Apprenticeship programs generally take 3-4 years to complete, involving classroom training and extensive practical experience on job sites. Some apprenticeships will result in an associate's degree upon completion of coursework and experience requirements.

Step 3: Obtain Contractor's License

All states require independent paving contractors to be licensed by the state. Generally, the requirements to be a licensed contractor include proving that the contractor's business is financially solvent, which is done by submitting detailed financial statements with the licensing application. The contractor must have at least four years of experience in concrete paving, and some states require the contractor to have a bachelor's degree.

Applicants may have to pass a written examination, submit fingerprints, pass a criminal background check, and post a bond. Most states require contractors to have adequate liability insurance as well as worker's compensation insurance for employees. Licenses must generally be renewed annually.

Step 4: Join a Professional Organization

Organizations such as the American Concrete Paving Association (ACPA) or the National Pavement Contractors Association give concrete paving contractors a resource to network with other professionals. Professional organizations also provide on-site and online training programs for contractors who want to stay up to date on new trends in the field. Networking with other contractors, government agencies, materials suppliers and academics can help a business expand its base by developing new opportunities and providing improved products.

Concrete paving contractors hire and manage the crews and subcontractors who build highways and roads using concrete. They have college degrees, along with knowledge of concrete and project management. They handle relevant software and equipment, and they earn a median annual salary of $43,000.

You've heard the phrase "time is money," and that arguably couldn't be truer among concrete contractors. For instance, contractors bid jobs very competitively, so profit margins tend to be low. This forces contractors to assess other ways that they can increase job profits, which makes on-the-job (and even in-office) productivity so vital to success.

Productivity isn't so much defined by dollars as it is by hours, which makes efficiency so crucial. If a crew can complete certain job hours–perhaps even days–ahead of what was initially projected, that's more money back into their pockets when it's all said and done. But at the same time, it's important not to cut corners for the sake of finishing ahead of schedule.

Each year, World of Concrete gathers the leading companies and disruptors to discuss and showcase how to improve efficiency, and in turn profits, in the sector. Jim Adrian, a Bradley University professor in civil engineering and construction, and a regular speaker on productivity at World of Concrete says that a concrete contractor's profits and losses are made in the field. "The difference between a good job and a bad job when it comes to concrete is still a field operation," he told Concrete Construction.

So just how can contractors increase profits in a traditional low-margin field of work?

This year, World of Concrete takes place January 22-25 in Las Vegas. The event promises to once again bring together the latest innovations in the concrete space to help builders increase their returns. If you're attending and looking to make the most of your time at the show, below, we've identified six tools and strategies you should keep an eye out to maximize your profits. But whether you're attending World of Concrete or not, keeping the below tactics in mind will help all concrete specialty contractors increase productivity where it matters the most–the field.

1. Fix the Root of Rework With Improved Communication

A streamlined, efficient workflow is ideal for concrete contractors, but it's not always the reality. Rework, for instance, is commonplace due to a lack of communication and collaboration among subcontractors, general contractors and design teams. Some estimates state that rework costs can add up to as much as 5% of the total contract value on a project. Obviously minimizing–or eliminating–rework will help concrete contractors make more money. Even for the rework that does occur, communication still needs to be effective, clear and concise. Few tools that can help streamline such communication to reduce and minimize the impact of expensive rework:

Mobile (and cloud-based) document management

It's common for contractors, general contractors and designers to go back and forth on plan changes. When these documents and communications are paper-based or rely on outdated systems like Excel and email exclusively, missed information and mistakes are likely to occur.

Today, concrete contractors need the support of mobile and cloud-based document management to help streamline changes and design updates. Cloud tools are also ideal during requests for information, or RFIs. The big value of making sure such tools and devices are mobile-friendly is that they allow the respective parties to make their markups and changes from the field on their phones or tablets. In turn, this will enable alterations to be made faster and keeps field teams abreast on the latest project changes in real time.

Collaboration software

To improve profits, rework communication needs to be done effectively and efficiently. That's where software tools that help provide a central location to collaborate can come in handy. Whether it's the office, trailer or another location, software tools like PlanGrid allow general contractors, concrete contractors, designers and all other project stakeholders the ability to come together and manage the project. When software tools provide a central location to collaborate–it reduces both the amount of time spent on inefficient communications and the risk of installing concrete work to outdated specifications.

2. Improve Productivity Through Transparency

One of the major debilitating factors on concrete jobs is lost time. The "hurry up and wait" game directly translates to lost productivity, with jobs being put behind schedule. It often involves a lack of information, a lack of documents, waiting for answers from engineers or concrete workers being shifted or moved to new areas.

The answer: Empower field workers to access complete and detailed plans and information, which thereby leads to faster decision making and less time spent waiting. Many tools can help facilitate better transparency. Such tools allow contractors to better document key pour locations, sequences and foundation details by simply pinning photos and marking up plans.

One tool that can pay big dividends in the field is building information modeling (BIM). Such modeling software helps increase productivity by improving the ability to prepare accurate lift drawings. Specifically, rather than the foreman and supers manually making lift drawings, a BIM technician can easily divide these responsibilities into parts by field crew. In fact, a study detailed in Concrete Construction found that forming productivity on BIM jobs was up to 15% higher.

3. Plan for the Unexpected

There's always the high likelihood for Mother Nature to throw a concrete job. As we know, concrete is a material that is particularly affected by elements like heat, cold and moisture. Basically, any small weather abnormality can put a job behind schedule while workers wait out for the right working conditions.

While it's important to pay attention to the weather forecast so that you have a general idea of the daily conditions that will be unsuitable for work (and plan accordingly, which may include buffering in extra job time), it's also critical to have a backup plan you can refer to.

Another significant benefit of BIM software is that cement contractors can adjust on-the-fly to accommodate scheduling for the intangibles, like the weather. With BIM software, you don't have to worry about drawing new lift drawings, as the input can be easily adjusted in the model and then redistributed.

4. Invest in Hiring and Training

As we noted above, Jim Adrian believes that losses and profits in concrete construction are made in the field. And the key to performing this field work is none other than the workers themselves.

That said, to increase your profits on concrete jobs, you need to work with high-quality people. Working with cement is complicated–way more than it seems. Austin Gary, Project Engineer for TAS Commercial Concrete, explains, "It's not just pouring what we call mud in the industry and watching it dry." He continues, "There's a lot that goes into concrete; specifications, mix designs and reinforcement needs. Now, we're even adding fiber into concrete mixes instead of mesh reinforcement. There are just so many possibilities, and you can even get into the chemistry of concrete."

That's why hiring–and retaining–good workers is so essential in cement contracting. And once you hire them, it's crucial to continue investing in them so that it's a mutually beneficial relationship. Invest in your employees' growth and happiness, provide opportunities for ongoing training and always be in the know with technologies that can make their work better and more efficient. We encourage you to keep an open door policy with your workers, as you can increase productivity through transparency too–just as we detailed a few sections earlier.

Additionally, consider technology to be an investment to aid your staff. It's essential that your workers know what you expect for them, not just on a per-project basis, but on a daily basis. Mobile technology allows staff to do more with less and can keep field teams up to date with the office and allow for making streamlined, up-to-the-second changes in a seamless fashion. It will enable the entire team to view standardized reports in real-time, thereby allowing for a more thorough understanding of factors like performance, schedule and other things that need to be addressed moving forward.

5. Update Your Materials Tracking

Do you know when you're receiving materials? Material timing can be essential to the overall success of a concrete job, and lack of accurate tracking is a common frustration among cement contractors. This is especially true if laydown space is limited, as poorly timed deliveries can

lead to major headaches if there isn't even room to adequately and safely store the necessary materials.

To improve material tracking in concrete construction, one solution to consider incorporating sensors connected to the Internet of Things (IoT) into your operations. Data from such sensors have the potential to track fleets, concrete supplier trucks and more so that you have a specific idea of when materials are set to arrive and can plan accordingly, thereby minimizing profit-killing downtime. Proper planning is especially vital if pre-cast concrete is being used on a job. That's because pre-cast concrete requires extensive pre-planning so that installation is timed properly. If there's confusion around when this delivery is coming, the timing can be thrown off entirely, dipping into job profitability.

6. Stay Current with the Latest Innovations in Concrete

Finally, concrete contractors should always be in the know about current and emerging trends in the cement field of work. With the rate at which technology is changing, cement specialty contractors should always have a finger on the pulse of the industry. A lot is happening in the concrete construction space right now that has the potential of improving profit margins, and some examples of promising technology poised to disrupt things (in a good way) include:

- Concrete 3D printers
- Super-hydrophobic concrete
- Bio-concrete
- Rapid-drying concrete
- Thermal insulation

While many of these innovations mentioned above are still in their infancy and too new (and expensive) to use on a widespread basis, the potential of such cannot be overlooked. Keep an eye on these emerging materials and technologies as they continue to improve and become more widely used.