


TOP 5 CHALLENGES FACING THE CONSTRUCTION INDUSTRY

AND HOW TO SOLVE THEM

 NEW YORK
24 Woodbine Avenue
Suite 19
Northport, New York 11768

 ATLANTA
2400 Lakeview Parkway
Suite 275
Alpharetta, Georgia 30009

CONTACT
Joshua M. Rogove, CRIS
President, Principal
Direct: 646.483.1199
joshua.rogove@c-r-solutions.com

TABLE OF CONTENTS

#1 CONTROLLING COSTS	03
#2 AVOIDING LOSSES, PREVENTING ACCIDENTS	06
#3 STAYING ON TOP OF TECHNOLOGY	10
#4 FINDING SKILLED WORKERS AND RELIABLE	13
#5 SUBCONTRACTORS NEW RULES AND COMPLEXITIES, OSHA STANDARDS	16
CONCLUSION	18



#1 CONTROLLING COSTS

"One thing that is often overlooked is to staff up sufficiently so that people are not rushed and stressed and prone to making mistakes. Particularly on large complex projects putting a bit more into good management and supervision can save many times the cost." - Matthew Lohden, BIM Integrator at Gafcon, Inc.

INTRODUCTION

From the smallest independent construction company to the largest contractors and owners, all construction industry professionals have one thing in common. To do their jobs more effectively they must recognize the challenges they face and develop plans to solve them. So let's dive into a comprehensive list of five challenges the construction industry faces and strategies to solve them.

CAUSES OF COST OVERRUNS

In a broad sense there are three explanations for why cost overruns exist: technical, psychological, and political-economic.

Technical explanations account for cost overrun in terms of imperfect forecasting techniques and inadequate data.

Psychological explanations account for overrun in terms of optimism bias with forecasters. Scope creep, where the requirements or targets rise during the project, is common.

Finally, political-economic explanations see overrun as the result of strategic misrepresentation of scope or budgets. In the United States, the architectural firm Home Architects has attributed this to a human trait they call "Psychology of Construction Cost Denial," regarding the cost inflation of custom homes.

Practical examples of cost overruns are caused by:

- **Time delays** as a result of weather, site conditions, delivery of materials, community involvement, civic groups, NIMBY (Not in My Backyard!) syndrome, codes and permits, changes to design, inspections, and the implementation of changes to safety laws all lead to cash flow problems.
- **Rising costs** of labor, insurance, and materials due to inflation, poor productivity and project performance, environmental discoveries and abatement costs (toxic waste, asbestos abatement, mold) lead to increased overhead costs.
- **Legal** claims, incidents, mitigation, government regulation, permit approvals, and cost of fines.

3 TIPS ON HOW TO CONTROL COSTS

1. Getting a Good Estimate

When millions of dollars are on the line getting an accurate estimate from a professional cost estimator is vital. It is not likely that an estimator's initial projections will match the final project costs – however the estimate will guide the project's budget and financing, and will determine whether a project may be financially viable or profitable. An estimate report is necessary to secure financing and get your project started.

Why get an estimate?

Estimates help keep the project budget on track. Keeping an eye on initial estimates helps to control costs and maintain schedule.

What project elements are considered in an estimate?

Equipment, material, labor, subcontractors, and schedules.

2. Communication is Critical

Communication breakdown could effectively disrupt the entire construction process. Good communication improves team morale, and fosters ideas and feedback sharing. Project managers and their superintendents play a key role in collaborating with the various trade contractor foremen, who in turn play an equally vital role communicating with their respective individual trade members. Insufficient communication often leaves employees with incomplete instructions regarding a task. Lacking information, employees may not recognize an existing or potential hazard and become exposed.

Technology to Improve Communication

The key to reducing construction injuries and fatalities is communication. According to [Pew Research Center](#), the vast majority of Americans – 95 percent – now own a mobile phone of some kind. The share of Americans that own smartphones is now 77 percent, up from just 35 percent in Pew Research Center's first survey of smartphone ownership conducted in 2011. [Apps like Haz-Trac](#) facilitate the communication of safety threats – thereby reducing accidents, claims and controlling costs. Technology solves many communication problems by enabling management to get safety messages to onsite workers rapidly and in a manner prevents costly and tragic accidents. With site safety apps like Haz-Trac every worker on the job site has the opportunity to conduct a site inspection. Every time a worker steps onto the job site, they have the chance to make it better through their observations and actions. Instead of walking by a hazard and assuming someone else will notice it or fix it, the workforce is empowered to intervene, isolate or repair the problem, and report it via the app.

Here are some other ways to improve communication on a construction job site:

- **Seek feedback and listen.** It is important that the workforce know their input is valuable.
- **Watch.** Observe and make sure your audience is listening.
- **Automate messages as much as possible.** Set it and forget it. Automate weather updates, job schedules, material delivery notifications.
- **Know your audience.** Limit recipients to those who need to know to avoid message overload. Too many messages tend to dilute what is really important.
- **Don't ramble.** Say what is important right away and preface it by saying, "Pay attention this is really important."

3. Use Agile Project Management

A less explored possible cause of cost overruns on construction projects is the escalation of commitment to a course of action. This theory, grounded in social psychology and organizational behavior, suggests the tendency of people and organizations to become locked-in and trapped in a particular course of action and thereby "throw good money after bad" to make the venture succeed.

Traditional or Waterfall project management requires that each phase must be complete prior to beginning any work on the next. The waterfall method limits customer feedback and agility because each phase has been planned out already and is on a rigid course to completion. Traditional project management locks in plans and limits changes when plans fail.

Agile Construction is a way of doing business adapted to construction job sites and overall project delivery, born from Agile manufacturing and project management, mostly used in manufacturing production, automotive, and software developing teams.

Regular check-ups are built into the project cycle to address relevant issues while they are fresh. This results in continuous improvement and a better project outcome. Using Agile, teams can be better prepared for typical challenges like changes of schedules, unknown conditions, and availability of materials.

In Agile, first you build, measure how the projects respond, and learn whether to pivot or stay on course with same development. Agile developers don't use statements of work with a list of all potential plans because you need to gather feedback constantly and then incorporate – it should not be pre-planned.

Agile Construction improves the contractor's ability to rapidly adapt to job site changes, minimizing the time between when a risk is detected and corrected. This requires a better mechanism to capture these changes and a better infrastructure for addressing them. Agile project management applied for construction can also make gains in pre-design and design phases of construction, and with a more highly trained and motivated workforce deliver a better consumer value.

#2 AVOIDING LOSSES, PREVENTING ACCIDENTS

“Nearly 6.5 million people work at approximately 252,000 construction sites across the nation on any given day. The fatal injury rate for the construction industry is higher than the national average in this category for all industries.” – OSHA

The reality is that the actual and social costs of construction accidents that cause injury and death are astronomical. These costs do not discriminate; they impact general contractors, developers, and subcontractors, alike. The good news is that many of these risks can be mitigated with a solid behavioral, cultural, and technological strategy.

The leading causes of worker deaths on construction sites were falls, followed by electrocution, struck by object, and caught-in/between. These “Fatal Four” were responsible for more than half (58.1 percent) the construction worker deaths in 2014. Eliminating the Fatal Four would save 508 workers’ lives in America every year.

“There is a real problem with construction safety.” – Mark G. Peters, Commissioner, New York City Department of Investigations

Seven Reasons for High Occupational Fatality Rates in One of the Largest Markets in the United States:

NYCOSH attributes construction’s disproportionately high occupational fatality rate to seven predominant findings. These findings consist of:

1. Nature of the Work. Construction work is hazardous work where workers often “take extreme risks to do their everyday jobs.”
2. Refusing to Obey Rules. The presence of “recalcitrant employers... committing willful, repeat or failure-to-abate violations.”
3. High Violation Rates. Contractors with “extraordinarily high violation rates” continue to be utilized.
4. OSHA Safety Violations. “Construction employers in New York routinely violate OSHA safety standards.”
5. Safety Violations. Safety violations tend to exist on sites with worker fatalities.
6. Untrained Workers. Untrained workers affected by language barriers are especially at risk. Communication barriers leave warnings unheeded.
7. Puny Penalties. Finally, seventh, that “construction worker fatalities (often) result in puny penalties for unsafe contractors.” OSHA cites that, in New York in 2012, “the average penalty in fatal height-related construction accidents ... was only \$7,620.” OSHA argues that the small costs associated with violation citations are not significant enough to deter unsafe work practices.

4 TIPS FOR PREVENTING ACCIDENTS IN CONSTRUCTION SITES

1. **Communicating with workers**

Schedule regular meetings with crews working in all areas of the construction project to discuss proper safety protocol. Focus on the equipment they'll be working with during that week. Keep in mind, risks change as the construction project goes through different stages. Having safety meetings every day benefits the workers by keeping them updated. They should also be reminded that their safety is valued.

2. **Wearing proper gear**

"We don't work in a dangerous environment. We work in a hazardous environment that we make dangerous by not following safe work procedures and wearing our PPE." – Brad Miles, Environmental Health and Safety Expert, EHS Today

Everyone on the job site, especially visitors, should be required to wear high visibility gear, hardhat, and safety glasses. Following this simple tip could prevent those on site getting hit by machinery.

3. **Training the employees**

Workers should be trained on how to properly use the equipment/machinery they'll be working with. Only employees who have been educated on how specific machines function should be the ones operating the respective machinery.

4. **Use signs to warn employees**

At the construction site, employees are exposed to a variety of hazards. For example, displaying signs around areas where there are cables or wires that have high levels of voltage would help prevent workers from being electrocuted.

MAINTAINING A GOOD REPUTATION

“One mistake can undo thousands of hours of hard work. That error may be caused by you or one of your employees. Incidents that can affect a company’s reputation include poor quality, ill-disciplined staff, aggressive behavior when settling claims and variations, safety incidents, environmental accidents and not delivering a project on time. Even incidents that you consider trivial can be problematic for some clients, since they may view things differently, and have different priorities and agendas.” – Paul Netscher, Construction Management Consultant and Writer.

There are a variety of factors that can influence your company’s reputation. If you are asked about the worst experience you’ve ever had with a company the name will come up quickly. We tend to never forget bad experiences. Now think about a good experience – it may take a few minutes before naming a few.

5 Ways to Maintain a Good Reputation

In Paul Netscher’s [article](#), “Why construction companies should be concerned about their reputation,” we learn that there are ways to maintain a good reputation.

Be Quick to Respond

If a client needs to get in touch with you, be responsive. Clients often try to reach you to reschedule meetings. Be sure to make room for your client’s demands. This is probably the only time you’ll have direct contact/communication with them to make sure to provide a good impression.

Professionalism

This doesn’t only apply to the way you act/ behave, but also applies to how you present yourself. Dress appropriately and be well mannered and considerate at all times. It takes one bad reaction to negatively impact to the future of your company.

Trustworthiness and Reliability

When it comes to invoicing, make sure your numbers reflect the amount of work completed. Honesty must be your main priority when it comes to keeping a good reputation. This reliability shouldn’t just apply to your company and client relationship, but should also be exercised when dealing with your suppliers, subcontractors, and employees. Be sure to give your client a detailed explanation if invoicing for unexpected charges.

Safety Management

Safety should always be your main concern and top priority when it comes to dealing with projects. If past performance reflects that you take safety management seriously, it will open more doors for your company. Accidents can happen, but most are preventable if your company follows proper safety protocol. If an accident happens during a very important project, the bad publicity that comes with it could damage your company's reputation.

Quality of the Materials

Ever hear the phrase "cheap is expensive?" Clients are looking for top quality materials to bring their projects to life. This is beneficial for both the company and the client because the company will avoid spending more money in the future. Following this tip strengthens your company's reputation because the finished project is a reflection of a top quality project. Shoddy workmanship is a reputation that is difficult to shake.



#3 STAYING ON TOP OF TRENDS AND TECHNOLOGY

“The construction industry has been slow to adapt to technology. There are a lot of parties involved in a construction project and they simply do not trust one another. Actually, they trust each other so little that they still send documents via certified mail to protect themselves. Communication moves at a snail’s pace.”
— Aproplan co-founder and CEO Thomas Goubau

Apps, sensors, cameras, wearables, drones, big data — if you are responsible for construction operations staying on top of technology can be a daunting task.

Here is a quick overview of some new tech trends you may want to consider at your project:



Apps

Construction site apps are designed to empower workforce members in identifying and correcting hazards to improve incident and cost reductions. This technology solves communication problems by enabling management to get safety messages to onsite workers rapidly and in a manner that prevents accidents. Construction site apps also reduce the amount of paperwork and create a more efficient workflow. In many cases, safety representatives are drowning in paperwork and are unable to focus on the people. In addition, job sites have too many claims that are hitting max coverage and hazard reports are not timely.

With new and advanced technology, information like hazard reports can be delivered in real-time to those that can review them and take action to save lives and avoid claims. In addition, safety apps provide management with real-time access to project/hazard photos and construction site performance.

Big Data

Sharing collected data and making sense of it allows companies to identify early indicators and better predict trends to avoid accidents. Additionally, the data collected from apps used on smart phones, tablets, and wearable devices on-site offer transparency and accountability.

The real-time information can be used to report hazards before they become incidents. The purpose is to drive increased accountability to improve job site safe behavior. Real-time reporting provides management with immediate remote access to job site issues so they can provide direct feedback to drive improvements.

Wearable Tech

Wearable tech like the Apple Watch presents many possibilities for improving communications and safety on construction sites. Today, sensors are even found in boots and hard hats.

How to Use Sensors on Job Sites

1. Wristbands. Sensors worn on the wrist help foremen monitor temperatures to help crew avoid heat stroke.
2. Hard Hats. Sensors worn on hard hats can alert foreman of impacts.
3. Boots. Boot sensors can monitor how long workers have been on their feet and measure time between breaks.
4. Harnesses. Can monitor the number of workers on a structure and alert foreman if a sudden drop in height takes place.



Site Inspector Drones and Cameras

Using drones on construction sites reduces site dangers for workers and those around them.

Remote monitoring systems like this have the potential to mitigate problematic issues before they turn into incidents. They can offer projects increased efficiency by monitoring activity using a continuous, live feed. Drones and cameras on-site result in lives being saved and problems detected early on.

Watch drones monitoring construction work. [\[video\]](#)

We are living in a critical time when construction projects are projected to increase as a result of worldwide population growth and the development of new cities. These projects will face obstacles. One of the most challenging obstacles will be the dearth of workers with the skills and safety training these projects demand.

#4 FINDING SKILLED WORKERS AND RELIABLE SUBCONTRACTORS

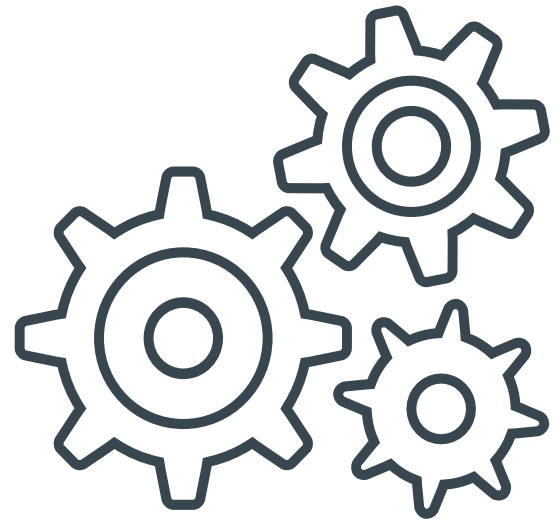
“While a number of issues face the booming construction industry, one concern that has been discussed throughout the IRMI Construction Risk Conference here is the shortage of skilled workers. Projects are larger than ever, with technology and the global supply chain only adding to their complexity, making it even more difficult to find talent.” [Caroline McDonald](#), senior editor of the Risk Management Monitor and Risk Management Magazine

According to [Industry Intelligence from First Research](#), during the late-2000s recession, many construction workers either retired or left the industry. As building activity increases, the construction industry is having a hard time finding skilled workers to meet the rising demand.

A recent [BATC Daily post](#) points out how apprenticeship programs, designed to address this issue by attracting young talented workers, haven't drawn the level of interest their creators had hoped.

Construction work is perceived as unstable and dangerous, and lacking in opportunities for growth.

“The number of skilled professionals operating in the industry dropped dramatically during the recession and now around 22% of the workforce are in their 50s or 60s. Quite simply, there are too many people retiring and not enough entering construction to replace them.” — Managing Director of One Way, Paul Payne



TIPS TO FINDING AND KEEPING SKILLED WORKERS

A recent article published by [ForConstructionPros.com](https://www.forconstructionpros.com) looked at the most-common hiring mistakes contractors make and how to avoid them.

More Working Hours: Workers are very willing to work overtime if they're asked to do so. You should be ready to offer them extra hours and compensate them fairly.

Incorporating New Technology: The latest crop of skilled workers are likely to be millennials. Millennials are more comfortable with technology. This can benefit both you and your team — even technophobes.

Ask for References: To uncover the most talented workers, you must ask for references and call their previous employers. One easily assumes that they're going to hear positive things, but that's not always the case. By doing this, you could be saving your company time and money.

Specific Job Descriptions: Job descriptions and skill requirements should be as detailed as possible to attract what your company needs. There are different areas and positions for skilled workers. They don't all fall under the same job description. You want be sure you're hiring the right candidate for the job. This way you'll save time and work for the company.

Communication: Talk to your employees. Make yourself available so they can reach out to you if they have questions or concerns. Be open to suggestions and creative thinking from your crew. Employees like to know that their opinions are valued. Place a feedback box in a main location. Communication plays a major role in the construction industry. Make sure expectations are clear and offer milestones as a path to climb the corporate ladder.

Offer Attractive Perks: Millennials have come to expect perks like incentives, bonuses, flexible schedules, team building events, paid leave, and free drinks and snacks.

Competitive Wages: Don't expect to attract top talent and skilled workers with below market wages. Offering a competitive wage saves money in the long run — it not only ensures the future of your company's workforce but also that you're hiring qualified workers. Quality workers with low turnover leads to less administration and a more productive project.

Better Training: Improving training programs and advocating for federal and state funding for career and technical training programs is critical to improving workers' skills. Leadership and mentorship programs help attract quality applicants and increase retention rates.

FINDING RELIABLE SUBCONTRACTORS

"If you're on the job site and you know you won't be able to finish the job on time, you likely need to hire a subcontractor to help you get the work done. How do you go about finding the perfect subcontractor? Hiring a subcontractor takes time and energy you don't have to spare." —Jaime Cue, Armstrong Steel Network

Tips for Finding a Reliable Subcontractor

An article in [The Balance](#) stated a few solid methods to identify a subcontractor in construction:

- **Ask Suppliers**

Suppliers provide you with construction materials but they can also help you find the right subcontractor. Suppliers are likely to know subcontractors because they interact with them on a daily basis.

- **Talk to Subcontractors You've Worked With**

Subcontractors know other subcontractors from the same area and can always recommend someone who is trustworthy and dependable. You can also ask the workers, too.

- **Ask the Client**

Talk to your client, maybe they have preferred subcontractors. This will help you save time and make the process easier.

- **Run a Background Check**

Even if your subcontractors have good references, you must check that licenses and insurance are up to date. By doing this, you're saving yourself money.

#5 NEW RULES AND COMPLEXITIES

"Nowadays, you can't go on a construction site without seeing people wearing hard hats," says H. Berrien Zettler, deputy construction director for OSHA, who has worked for OSHA since 1975. "It's become a symbol of the trade. In the pre-OSHA days, that was not the case. The culture of the industry was that anyone who wore safety equipment was viewed as a wimp."

"Construction employers across all trades are finding compliance extremely difficult if not impossible for many job tasks," [noted the CISC in a letter sent to then-acting Labor Secretary Edward Hugler .] "...These challenges are compounded by OSHA's failure to issue meaningful guidance..." The Construction Industry Safety Coalition (CISC), [reported in Equipment World](#)

How do ever-changing rules and complexities impact construction projects?

The administrative functions of a safety representative often get in the way of actually improving the safety of the workplace. Paperwork obligations have become the enemy of effective job site safety performance. The paperwork and reporting actually keep the safety representatives from the field, where they should be.

OSHA asserts injuries and fatalities on construction sites are most often caused by employers who choose to "tally fines with the cost of doing business instead of prioritizing workers' safety and health on the job."

Why would owners choose the fines rather than tackle the task of staying compliant? Is it too time-consuming to master OSHA rules as well as those issued by other agencies like the EPA and the DOT? Perhaps the rules and standards are too difficult to keep up with and to communicate on the job.

OSHA Critics

The most frequent complaint against OSHA is that the regulations are burdensome on businesses.

OSHA has been criticized by businesses and industry groups throughout its history. OSHA has also been criticized by unions for doing too little to protect workers. According to [Inc. Magazine](#), OSHA has been criticized for “issuing too few new standards, for failing to protect workers who report violations, for failing to adequately protect workers involved in the cleanup of toxic-waste sites, and for failing to enforce existing standards.”

The latter charge has been a particularly frustrating one for OSHA. Funding for enforcement has dwindled in recent years, and over the last 20 years, both Congress and various presidential administrations have publicly supported efforts to keep OSHA and other agencies “off the backs” of business.

3 WAYS TO STAY ON TOP OF NEW RULES

Each year, OSHA releases new rules and modifies its safety standards. While it can be overwhelming to stay informed, here are some ways your safety management staff can keep up with the rules:

1. **Keep up to date on latest industry news**

Two newsletters are all you need to keep informed: 1) EHS Daily Advisor offers free resources like whitepapers, tools and tips, and research. [Sign up](#) for their daily email to get compliance updates delivered daily to your inbox. 2) The OSHA QuickTakes Newsletter is delivered twice monthly, [sign up here](#).

2. **Go to the source, OSHA.com**

There is a lot of information on OSHA’s website — perhaps too much — but of particular interest is the section on [OSHA’s Compliance Assistance](#). There, you will find fact sheets, booklets, expert advisors, videos, and safety and health topics pages. Additionally, familiarize yourself with the most [frequently cited OSHA standards](#).

3. **Make smart hiring decisions**

Rules and regulations are made to keep workers safe. Hire safety professionals that value safety with a track record to prove it. Additionally, seek staff that enthusiastically support the rules rather than complain about them. OSHA rules are a part of the job, keep workers safe, and save companies money when they are compliant. During an interview, if you detect negative attitudes - those attitudes will infect your job site.

CONCLUSION

This Ebook has provided those in the construction industry with the top challenges they face and a lot of detail on how to solve them. Not every point will be relevant for everyone and every project. This is a starting point to help you devise your plans to overcome these obstacles.

And remember — planning takes effort. No question. But you'll find that the return on the time invested, both literally and figuratively, can be immense.

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ABOUT THE AUTHOR



Josh Rogove serves as a President of CR Solutions working from our Northport, NY office. Josh is responsible for business production for wrap-ups and assists in overall operations.

Josh Rogove joined the CR Solutions team in 2008 from AIG Construction, where he served as the New York Regional Manager, managing a book of Construction wrap-up programs and Contractor practice programs in excess of \$300M in premium. With Josh comes the experience of underwriting and managing large construction projects throughout the United States.

The types of wrap-ups he handled include, but are not limited to: commercial office buildings (both core-and-shell & interior fit-out), residential buildings (both core-and-shell & interior fit-out), tunneling projects (both cut-and-cover and use of tunnel boring machines), street/road projects (including bridges & overpasses), rail projects (including subways & subway stations), transit hubs (including ferry terminals), water treatment plants, schools, universities, hospitals, stadiums, shopping malls & outlets, casinos, military housing, hotels, timeshares, amusement parks, and data centers. Beginning his career as an underwriter, has led to his strong understanding of relevant construction project exposures, as well as, insurance rates that are related to contractors performing their work.

Josh has earned a Bachelor's Degree in Business Administration from the Warrington College of Business at the University of Florida and a Master of Business Administration in Finance from the Peter J. Tobin College of Business at St. John's University. He also holds the professional designation of CRIS, Construction Risk and Insurance Specialist, and is a licensed Property and Casualty broker.

ABOUT CR SOLUTIONS

Consolidated Risk Solutions specializes exclusively in wrap-up administration services.

Consolidated Risk Solutions--an independent company--has the expertise and technology to ensure effective wrap-up management for large-scale construction projects. All we handle are wrap-ups, allowing us to cultivate an expertise within our company beyond compare.

We've served the construction risk management industry since 2002. Our wrap-up programs provide dedicated project coverage with adequate limits, consistent coverage, more control, no cross litigation, efficiency, consistent services, and decreased markups. The result is an efficient, cost-effective risk management program covering your project.

