

The Construction Executive's Guide to Protecting Margins

How 6 industry leaders are managing profits, projects, and people in 2023



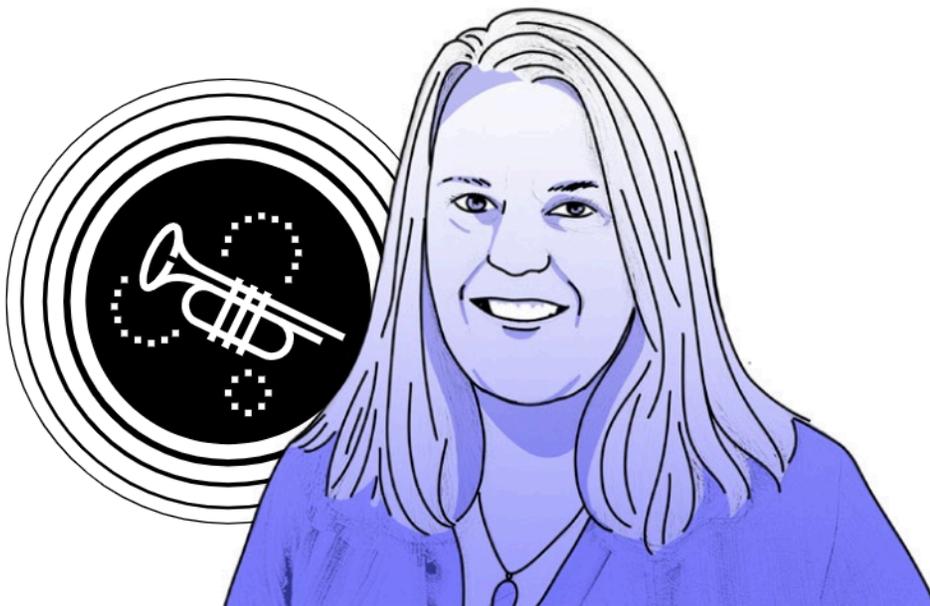
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Check out how these top firms are protecting profits in volatile times:



Contributors



Nancy Novak

Chief Innovation Officer, Compass Datacenters
Fairfax, Virginia, United States

- 30+ years of experience in the construction industry
- Extensive expertise managing profit and loss function for global firms
- Advocate of technology and Lean practices that add value, improve ROI, and disrupt the construction industry
- Board of Directors' Vice Chair on the National Institute of Building Sciences BIM Council
- Played the trumpet in her high school marching band with her twin sister, where they were first and second chair

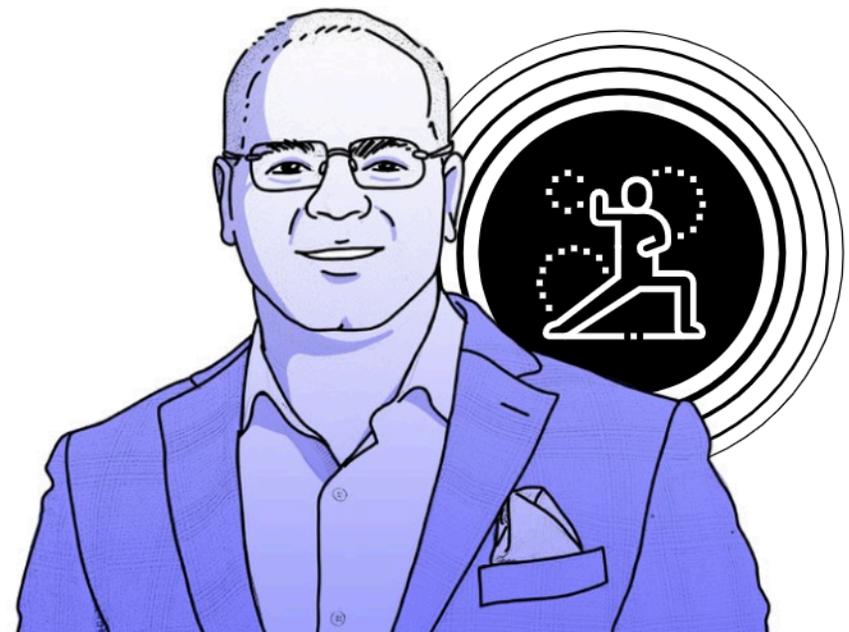
[Learn more about Nancy](#) | [Learn more about Compass](#)

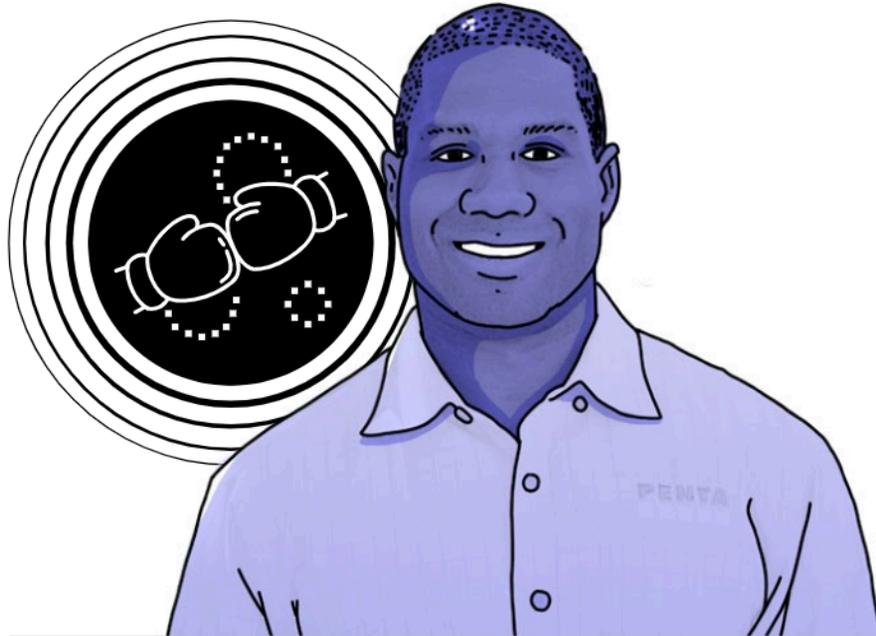
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Chief Innovation Officer, Windover Construction
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- 20+ years of experience in architecture, engineering, and construction
- Leads Windover's VDC and IDEA™ (Innovations for Design, Engineering, and Automation) teams
- Champion of pioneering construction technologies to streamline project procurement
- Innovator of the Year at the 2019 Autodesk AEC Excellence Awards
- Earned his black belt in karate at 16 years old

[Learn more about Amr](#) | [Learn more about Windover](#)





Cliff Cole

Director of Virtual Design and Construction, The PENTA Building Group
Las Vegas, Nevada, United States

- 15+ years of experience in virtual design and construction
- Leads all implementation and management of construction technology and building information modeling
- Responsible for PENTA's strategic technology initiatives for the operations, corporate Lean, and preconstruction groups
- Recognized as one of the 2019 Autodesk Champions of Construction
- Fought in two amateur boxing fights

[Learn more about Cliff](#) | [Learn more about PENTA](#)

Luis Berumen

VP of Strategy and Innovation, Bartlett Cocke General Contractors
San Antonio, Texas, United States

- 15+ years of experience in engineering and construction, including estimating, BIM, preconstruction, and project management
- Oversees Integrated Construction (VDC, planning and scheduling, and construction technology) and Analytics & Technology (ERP, analytics, and IT)
- Has held increasingly responsible roles on 60+ projects with combined project volumes of over \$2.5 billion
- Recipient of the 40 Under 40 award by the San Antonio Business Journal (Jan. 2014)
- Plays the trumpet (mostly jazz and Spanish music) and enjoys singing karaoke in both English and Spanish

[Learn more about Luis](#) | [Learn more about Bartlett Cocke](#)





Todd Mercer

Senior Vice President, Webcor Builders
Orinda, California, United States

- 25+ years of experience in construction and preconstruction, with a focus on the commercial sector
- Leads Webcor's Strategic Innovation efforts and has held roles of increasing responsibility across complex, high-profile design and build projects
- Chairs the company's Strategic Technology Committee, which reviews and enables emerging technologies and builds strategic partnerships with AEC technology companies
- Serves as a member of the Board of Directors for Silicon Valley Ventures & Laboratory (SVVL)
- Avid car racing fan

[Learn more about Todd](#) | [Learn more about Webcor](#)

Tim Mumford

Business Director - Digital and Innovation, Beca
Victoria, Australia

- 15+ years of engineering experience for both public and private sector capital projects
- Focused on increasing Australia's productivity in infrastructure through innovative digital solutions, such as: DE, Digital Asset Management, BIM, AI/ML, and IoT
- Successfully led government policy like the Victorian Digital Asset Strategy (VDAS)
- Recognized as a 2020 Young Engineer of the Year Award finalist
- Secretly wishes he was good at coding

[Learn more about Tim](#) | [Learn more about Beca](#)



Introduction

Focusing on profit is a priority shared by executives across all industries. But this responsibility becomes even more crucial for leaders in the construction sector—known for its notoriously tight margins.

Construction executives are feeling the pressure to perform: [Associated Builders and Contractors](#) found that less than half of American construction professionals (40%) expect no change in profit margins. In comparison, 36.8% expect them to increase slightly.

Keeping a close eye on project costs is crucial to construction success, especially in today's economic climate. It's a tough landscape, and to stay ahead, construction executives must successfully navigate three major economic pressures:

- Higher inflation and interest rates
- Supply chain disruption
- Workforce and talent gap

In this eBook, we asked six construction leaders (and close collaborators in engineering) how they're protecting their profit margins amidst these economic challenges. On the following pages, we'll cover these challenges in more detail, and share exclusive insights on how to address them from your industry peers.





Challenge 1: Higher inflation and interest rates

[The International Monetary Fund \(IMF\)](#) forecasts slow global economic growth—just 3% in 2024—alongside an elevated inflation rate of 7% this year. Although governments and financial institutions want to ease the pressure on consumers and businesses, inflation will likely remain elevated through next year. As such, we can expect prices to continue rising, although at a slower rate, in the coming years.

So what does this mean for construction?

For starters, waning demand for construction projects like office buildings can throw a wrench in go-to-market planning for general and specialty contractors. If general and specialty contractors have completed work but haven't been paid by a client that paused a project, they have less capital to invest in new projects (and less money in the bank to gain interest).

Owners have also become more cautious, as borrowing money to finance new builds comes with higher interest rates. This has resulted in some pullbacks, including office buildings, which declined following the COVID-19 pandemic.

In addition, inflation can lead to disputes or more complicated agreements between contractors and clients. If a project spans a long period, the initial pricing agreed upon may not account for inflationary pressures. Contractors may need to negotiate with clients to revise contracts, seeking compensation for increased costs due to inflation.

Challenge 2: Supply chain disruption

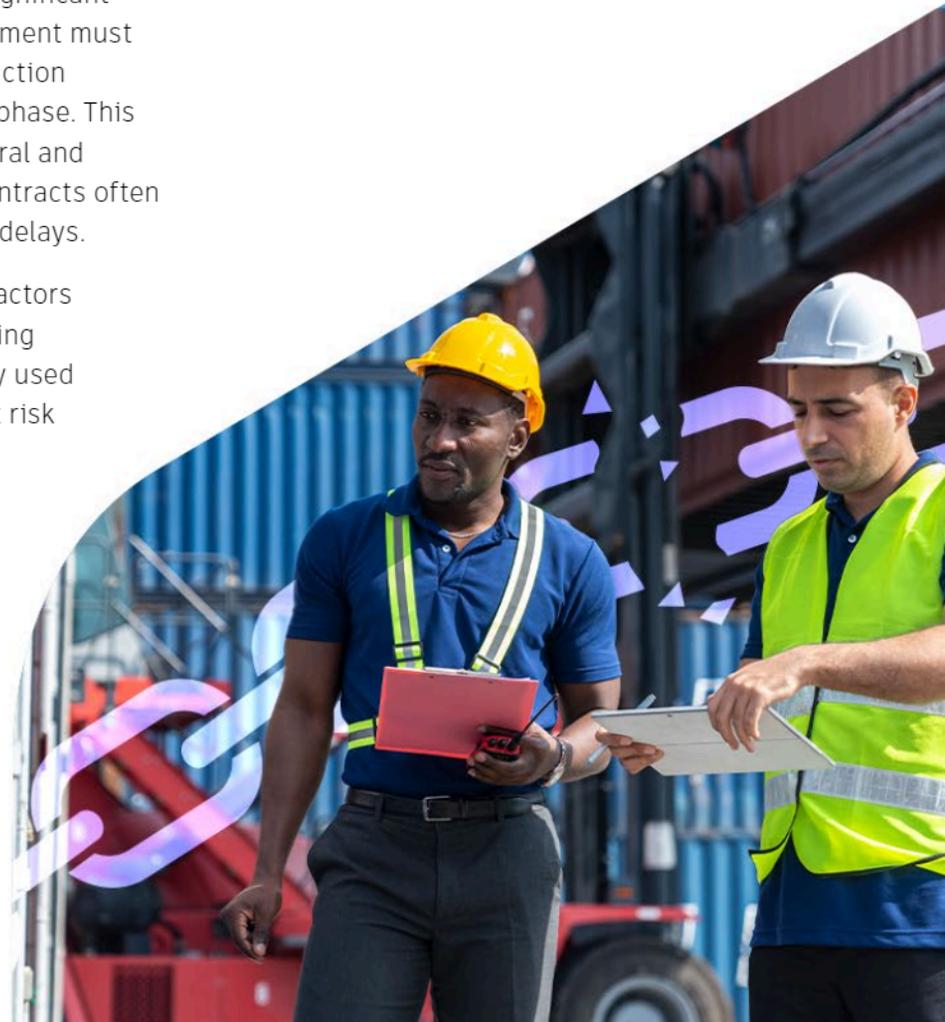
While the COVID-19 pandemic has subsided, its supply chain impact still persists.

Some construction companies are still struggling to get their hands on necessary building elements, with [equipment like generators](#) delayed by almost two years. And while prices have gone down (for now) for [materials like lumber](#), there's no telling what expenses will look like six to 12 months from now.

Meanwhile, paying for materials before receiving payment has become especially problematic for specialty contractors, as some might have to take out loans to cover the costs. And general contractors can face the dual dilemma of delaying payment to specialty contractors if they haven't been paid by the client.

Delays in materials and equipment are also causing issues on the jobsite. Uncertainty around whether an item will be delivered on time creates significant issues—especially if that equipment must be installed before the construction team can move on to the next phase. This problem is even worse on federal and public projects because the contracts often include penalties for schedule delays.

That's why more general contractors are considering buying or renting warehouses to store commonly used long-lead items or materials at risk of becoming more expensive.



Challenge 3: Workforce and talent gap

Unlike the tech industry, which has experienced massive layoffs, the construction sector is grappling with the opposite issue: labor shortages.

The lack of workers can cripple construction companies. Without enough labor to complete jobs, and with more workers approaching retirement, firms can't complete the work in their backlog as quickly, nor can they bid on new projects if they don't have enough talent to complete the work.

However, the current construction workforce may lack essential skills employers require. According to an [Autodesk Construction Cloud report](#) covering the skills gap in the Nordics, "32% of [construction firms] are concerned by a general lack of skilled labor

in the market, [believing] both traditional (20%) and digital (23%) skills will be in short supply during the next decade. Education is a key factor, with professionals stating colleges aren't teaching necessary construction skills (20%)."

One way to address the labor shortage is to increase employee wages, benefits, and training opportunities. Doing so can help firms grow their topline revenue since they can take on more work. Of course, these actions must be balanced with the increased delivery costs. So, while increasing work capacity is good, construction must ensure that bids remain competitive and profitable.

These are all tough challenges, and if you're a construction leader today, you may be asking yourself: *How can I protect margins while dealing with pressures like higher inflation, supply chain disruption, and the workforce and talent gap?*

To shed light on potential solutions, we asked construction leaders and their partners outside the industry to share how they're handling these challenges.

How are construction firms protecting margins in 2023?

After spending time with these industry leaders, we asked the question on the minds of executives everywhere: *How are construction firms managing tight schedules and budgets on projects right now?* Read their highlights below, and dive into the challenges of **controlling costs, managing materials, and sustaining the workforce.**

Nancy Novak

"The rapid adoption and use of technical innovations and less site-intensive modes of construction, like **off-site manufacturing**, makes the construction industry more competitive than ever because firms can accurately forecast job requirements like materials and personnel."

Tim Mumford

"In Asia-Pacific and specifically for Australia, we're missing a lot of our workforce. Digitization plays a big part in this because it's a big driver to **being able to do more with the same or more with less.**"

Cliff Cole

"**Improving the preconstruction process** can help increase a construction company's profit. Estimating is essential to the preconstruction process because it allows firms to determine a project's cost accurately."

Luis Berumen

"In today's construction landscape and economy, **the key to safeguarding a contractor's bottom line is strategic selectivity.** We're currently faced with numerous opportunities, yet our workforce is notably constrained. Thus, we must be highly discerning in the projects we undertake."

Todd Mercer

"**Diversity in product and client type** is a big part of protecting profit margins. As we know, construction is very cyclical. Diversity in product types and customers helps us limit those swings."

Amr Raafat

"The earlier we can perform onsite investigations through reality capture and BIM coordination—even during early stages for constructability review—**the more we can mitigate risks and develop comprehensive cost planning** throughout the project lifecycle."

Solution 1: Controlling costs



NANCY

Plan ahead for the unexpected.

The ability to see potential issues early in a project is the best “hedge” against unforeseen delays and/or cost overruns. If you look at successful companies in the construction industry, you’ll find similarities in how they bring a higher degree of certainty to their forecasting and job-costing efforts. This includes things like tighter supply chain integration and developing new processes and procedures that can help to quickly adapt to changes in component availability and delivery schedules. Developing these capabilities starts with a predisposition to innovation and adaptability.



AMR

Leverage BIM data for competitive bids.

Implementing model-based 2D and 3D quantity takeoffs can help deliver competitive bids with accurate data and pricing and build a comprehensive database for each building type. This empowers estimating teams to develop a realistic budget for each project every time, including the profit margin.



CLIFF

Mind your cash flow.

Managing cash flow is essential for any business because it ensures enough money is available for expenses such as materials, labor, and subcontractors. To improve cash flow, construction firms should focus on collecting payments from clients promptly, negotiating favorable payment terms with suppliers, and optimizing their billing and invoicing processes. PENTA has used technology to support cash flow by creating an in-house application to streamline our closeout and warranty process, allowing us to submit final payment sooner.



TIM

Identify potential pain points early using data.

Ask yourself, “How can I use data to bolster my business’s strengths and protect against current weaknesses?” While the answer would be different for every organization, digital can help reduce unknowns at an earlier phase of the project lifecycle and to bring parties in in a federated way to make decisions that benefit individuals in their own role in the project lifecycle, but also the wider asset and what’s best long term. A simple example of this might be to ask yourself, “How many times do I write the name of the project? Do I need to send out someone to inspect something, or could I use a novel solution, such as CCTV or spatial imagery?”



LUIS

Be selective about which projects to work on.

In today’s construction landscape and economy, the key to safeguarding a contractor’s bottom line is strategic selectivity. We’re currently faced with numerous opportunities, yet our workforce is notably constrained. Thus, we must be highly discerning in the projects we undertake. It often involves the difficult task of saying “no.”

A project needs to be primed for success, meaning it requires alignment with our top-tier internal team, the right client, a capable designer, and reliable subcontractors. Even a single poor choice in this mix can yield unsatisfactory results—a reality that shouldn’t surprise us. So, strive to set the stage for success to the highest degree possible. This requires proactive measures, particularly at the project’s inception, encompassing the pursuit, contract review, and overall alignment with your firm’s core values.



TODD

Make sure what you work on is as diverse as who you work with.

Diversity in product and client type is a big part of protecting profit margins. As we know, construction is very cyclical. Diversity in product types and customers helps us limit those swings. We’ve all heard the adage, “We need to do more with less.” Leveraging technology is one of the key ways we can get more efficient and actually do more with less and protect our profit margins.

Solution 2: Managing materials

**NANCY**

Build on what you know works.

At Compass, all our data centers are built using a standard set of components and pre-configured increments. By identifying our critical components upfront, we can ensure we understand our alternatives if we were to run into a supply issue with one of our partners and adjust accordingly. We couldn't do this if we didn't consciously make flexibility a requirement in designing and building our facilities.

Trust and motivation are factors in allowing for transparency that drives this behavior. Contract delivery vehicles are the starting point for managing all stakeholders' expectations throughout the project. Using technology, processes, and tools to administer the scope by sharing risks and working together makes all the difference. It's all about motivation and risk management. Using empathy by understanding everyone's perspective and how their businesses can succeed is also crucial.

**AMR**

Use prefabrication to save time and money on projects.

Utilizing prefab, additive manufacturing, and other industrialized construction methods minimizes errors, delays, and rework on site, saving material waste. Prefab also enhances safety on site and reduces the chance of safety incidents. That helps eliminate the direct and indirect costs of safety issues that affect the bottom line.

**CLIFF**

Dial in your preconstruction process with accurate estimates.

Inaccurate estimates can result in cost overruns, which can eat into profits quickly. To improve estimating practices, construction firms should invest in technology such as building information modeling (BIM), use historical data to inform estimates, and involve all stakeholders in estimating.

**AMR**

Manage quality assurance and quality control in real time.

Real-time overlays between what's built on site and the design can help detect discrepancies earlier, offering substantial cost savings in materials and schedule delays. For example, a best practice in underground plumbing workflows is using laser scanning for QA-QC.

Laser scanning makes it easy to overlay the as-built progress over the floor plans to make necessary adjustments in real time before pouring the concrete. This is a valuable best practice to avoid the delays and costs of fixing each conflict after pouring the concrete, which is a much harder and more time-consuming process.

Solution 3: Engaging the workforce

**NANCY****Get every department aligned to the same goal.**

Protecting and more ideally, increasing profit margins requires a corporate-wide commitment to effectively integrating all the internal organizations involved with a project, coupled with an environment that respects and encourages members to bring their diverse experiences to the table. If we're honest, we all can be guilty of creating our internal silos where we sacrifice the openness that contributes to effective problem-solving and continual improvement. Overcoming this mindset and not lapsing into "this is the way we always do it" mode is hard but necessary.

At Compass, we're constantly looking inward to ensure we are continually working in an "open environment," enabling us to work transparently and collaboratively across all project-related groups to improve how we do things, whether during a bidding process or commissioning a new site.

Let humans do what they do best.

The strong suit of humans is not to pull in thousands of data points and consider things in their entirety. We struggle to remember four or five things in a list, let alone thousands of elements or inputs.

Data, digital, and tools/processes (such as BIM or DE), and federated environments enable people to do this with ease. It's good to think about every problem across two dimensions: which problem (or part of the problem) should be left to computers and which should be left to humans.

Humans are very good at making decisions once presented with that eloquent information, but we're not good at presenting that information and making a balanced consideration at the same time. With the labor shortage and doing more with the same or more with less, there is an opportunity to leverage the scarce resources that we currently have to be able to do more, or to focus on more high-value activities.

**TIM****Qualify subs, mitigate risk.**

If our trade contractor fails to complete their work on time or to the required standard, it can lead to delays and additional costs. To mitigate trade contractor risk, general contractors should conduct due diligence on potential trade partners, ensure adequate insurance coverage, and establish clear contracts that outline expectations and responsibilities. Recently we implemented a new comprehensive financial analysis solution that qualifies every subcontractor to meet our performance standards.

**CLIFF**



TIM

Look beyond the “four walls” of your job description.

Everyone's got a role and responsibility to think about digital, not within their own four walls, but also the walls that are slightly beyond us. For instance, engineers should be thinking more about constructors, planning, and end-of-life. Simultaneously, constructors need to be thinking more about the front end of projects, but also about how does the steel fabricator take their information and how does the concreter consume information to make their decisions?

The truth is everyone has a role the industry recognises and that they're “paid for.” However, to make a wholesale difference and make this thing work to have the biggest impact, we owe it to ourselves to think beyond that role and about others once in a while.



LUIS

Get everyone on the same page.

I firmly believe that we will witness a growing adoption of more collaborative delivery models in the construction sector—it's an absolute necessity. These days, project timelines are increasingly compressed and budgets are often established too early, sometimes without thorough consideration or current information, particularly within many public institutions.

The complexity of these projects extends beyond the control of any single stakeholder. Thus, uniting all key players—the project owner, designers, general contractor/CM, and prime subcontractors—forms an optimal team for predicting and achieving desired project outcomes. This cohesive approach presents the greatest opportunity to steer the course of events effectively, especially when fortified by a solid partnership with a technology solution provider such as Autodesk.



TODD

Recruit robots for the right jobs.

We're already seeing robots as an extension of people [on jobsites]. They're not necessarily replacing people, but we're using robotics to extend the capabilities of our people, which is important. And even more important is getting our people out of harm's way, making the tasks we have to do less risky.

Conclusion

It's clear there's no silver bullet solution for construction executives tasked with safeguarding profits. But it's also clear that leaders are proactively implementing a combination of tactical and technological solutions on their project to protect margins—and even increase profits. And this is all while facing the macroeconomic hurdles of inflation, supply chain issues, and a smaller workforce.

We hope that you return to this guide whenever you're in need of cost management support on projects or in general. By drawing from the experiences and expertise of your peers, you'll gain valuable insights and ideas on how to stay profitable in today's complex and competitive construction landscape.

And if you're looking for ready-made construction management software that can help you protect your margins, Autodesk Construction Cloud has your back.

[Learn more](#)



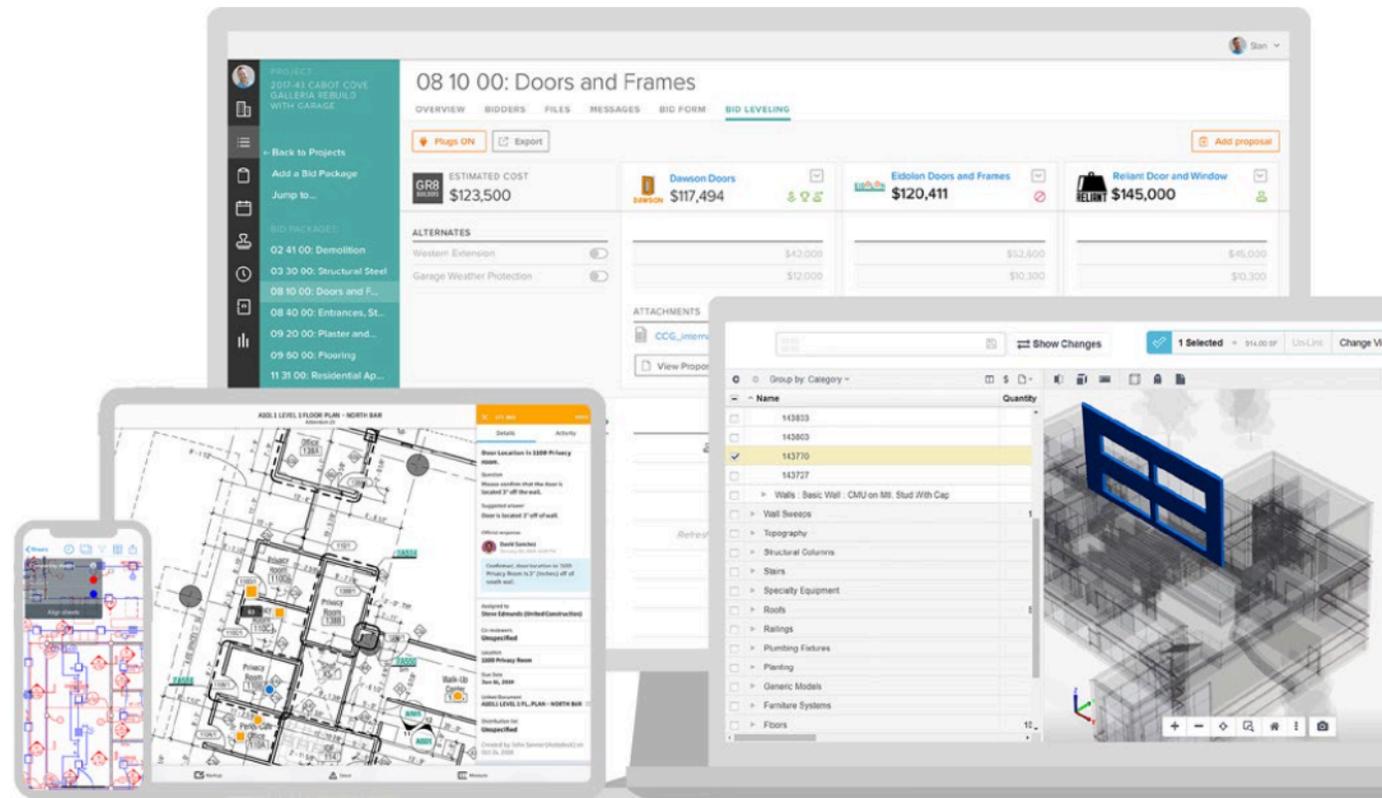
See the Future of Connected Construction

construction.autodesk.com

Our industry requires solutions that connect their information, teams, and technology –breaking down data silos and disconnected processes that hinder true transformation. As we navigate the ever-present push to do more with less, we need to uncover new ways of working, enhance connected digital workflows, and incorporate advanced analytics. To support us on this journey of transformation, we must lean into tools that connect construction – from design to plan, build, handover, and operations.

Built on a unified platform and common data environment, Autodesk Construction Cloud is a powerful and complete portfolio of construction management products that empowers general contractors, specialty trades, designers and owners to drive better business outcomes. Autodesk Construction Cloud combines advanced technology, a unique builders network and predictive insights to connect teams, workflows and data across the entire building lifecycle.

While the industry experiences unprecedented transformation, our mission remains the same: to help construction teams meet the world's rapidly expanding building and infrastructure needs while making construction more predictable, safe, and sustainable. And we've remained steadfast in our promise to deliver the industry's most compelling solutions, connecting data, teams and workflows from the field. This is our commitment to connected construction.





Autodesk is changing how the world is designed and made. Our technology spans architecture, engineering, construction, product design, manufacturing, media, and entertainment, empowering innovators everywhere to solve challenges big and small. From greener buildings to smarter products to more mesmerizing blockbusters, Autodesk software helps our customers to design and make a better world for all. For more information visit autodesk.com/construction.

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