AUTODESK CONSTRUCTION CLOUD®

The Guide:

5 Steps to Construction Cost Control

ARKANCE

AUTODESK Platinum Partner

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Introduction

Sick of low margins and high risk? Get better control of your project costs with improved visibility into real-time information. Improving your cost control can transform your projects, lowering risk, and increasing profitability.

Looking for that definitive how-to guide that will lay the foundation for a successful cost management transition?

Here is a ground-up guide to the 5 steps of data-driven, cloud-based cost control. Use this guide as your blueprint for visualizing and guiding your construction cost management strategy and plan.

Step 1 Lay the foundation: How to successfully control construction costs

Step 2 Identify common overruns: The most common causes of cost overruns in construction projects

Step 3 Upgrade from spreadsheets: Manage construction costs in the cloud and ditch the spreadsheet

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Straight-forward and informative, this actionable guide will provide you with a blueprint for your cost management game plan.

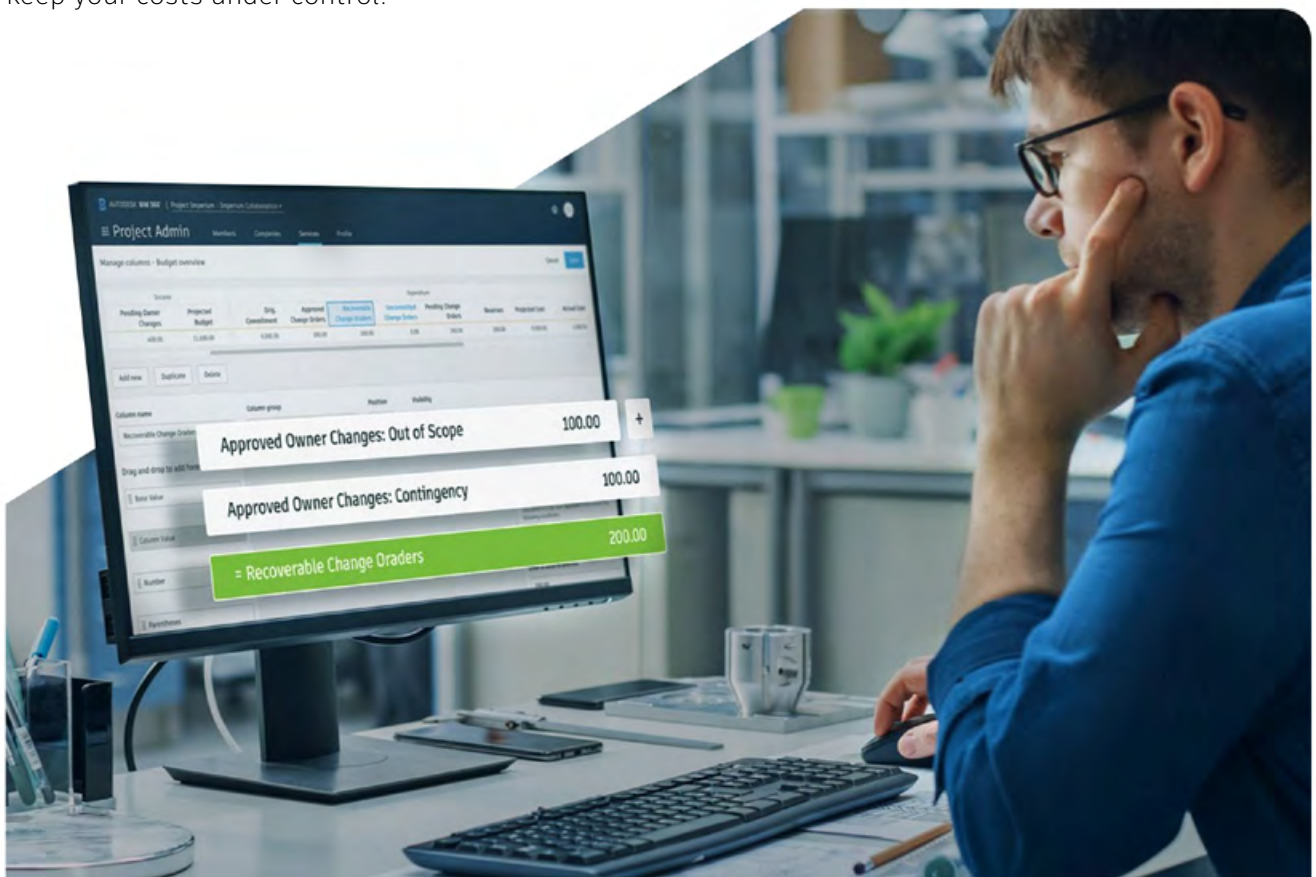
Lay the foundation: How to successfully control construction costs

Construction cost control is critical to ensuring that projects are successful. The better handle you have on your costs, the higher the likelihood that a project will be delivered on time, within scope, and on budget – a win for everyone involved.

Budget control is even more important in today's uncertain environment, as construction pros face new pressures, including labor shortages and rising material costs.

Unfortunately, managing your project finances is a major challenge for most organizations, and industry data shows that just 31% of projects come within 10% of the original budget. The issue is even more pronounced in larger projects; according to McKinsey, 95% of megaprojects become delayed or over budget.

Managing construction budgets clearly presents a number of challenges to organizations, but the good news is that there are ways to keep your costs under control.



The Top Challenges with Construction Cost Control

Why exactly do so many projects go over budget? Below are some of the top challenges that come with managing construction costs.

Lack of Integration Between Systems

The lack of integrations between systems is one of top factors that cause problems in construction cost management.

Too often, teams handle budgets using separate Excel documents and financial ERP systems – neither of which are built for construction professionals. Stakeholders then have to deal with multiple documents and different systems, which makes cost control even more difficult and tedious.

Not having a central system for cost management also results in teams working in silos, so there's poor communication between stakeholders.

All that results in unreliable response times and convoluted processes involving a variety of vendors, systems, and products.

Using Inflexible or "One Size Fits All" Solutions

Every construction project is different. There's always a unique blend of participants – owners, architects, engineers, general contractors, subcontractors, suppliers – who bring their own costs and schedules to the table. Because of this, cost is often the lowest common denominator for everything that occurs on a project – from design, quality, schedule, materials, etc.

Problems arise when you don't have a cost management system that's flexible enough to handle the various participants and components in a project. In other words, while you need repeatable systems and procedures, make sure your system has enough room for customization.

Frequent Changes to the Project

Construction projects are never static; changes that impact costs can happen on a daily basis. Overruns occur when teams fail to forecast, react, and adjust to these changes.

These cost control issues are often rooted in ineffective management during the early stages of a project – i.e., design and preconstruction. A study published in the International Journal of Innovation, Management and Technology identified "frequent design change" as one of the top causes of overruns. Not having clearly defined objectives and scope leads to an increase in change orders, which results in overruns.

As such, it's critical to get teams, costs, and expectations aligned early on in your projects. If you don't get the design and preconstruction phases right, you'll likely run into cost issues as the project progresses.

How to Gain Control of Construction Costs

Now that we've discussed the challenges with cost management, let's look at how you can overcome them.

The best way to gain control over your construction finances is to have a central cost management system that provides flexibility and customization to meet changing and unique project needs. Here are the key attributes of a solid construction cost management system that keeps your projects running on time and within budget.

Connected and Centralized Cost Management

A tightly integrated cost management system is essential if you want to get your budget under control. It's critical that the system that you're using to record, calculate, and forecast costs is connected to the other related applications that you're using. Doing so keeps multiple moving parts in sync, eliminates the need for double-entry, and helps teams be more efficient.

When you centralize the management of all cost activities, you ensure that your construction data is connected and auto-updates across the platform to offer an accurate view of the project's financial health.

A centralized system also provides a single source of truth, so stakeholders can have one reliable hub for data.

Finally, a tightly connected cost management system can offer a real-time view of your project's financial health, so you can make better decisions and forecast costs more accurately.

All in all, having a cost control system that's centralized and connects with other construction platforms helps teams achieve more predictability when it comes to cash flow and profitability projections. This, in turn, leads to more efficient projects and a healthier bottom line.

Customizable Structures and Terminology

You want a construction cost management solution that adjusts to your unique processes. So, equip your team with a solution that lets you customize structures and terminology used throughout the system to suit your needs and preferences.

A robust cost management tool will allow you to rename the tabs to reflect the terminology you use, set up custom budget structures that work with any accounting system and work breakdown structure, and create custom calculated budget columns.

Ideally, you should be able to create multiple project-level markup configurations to apply during the change order process and build a document template library to generate contractors that populate with information directly from the system.

Automated Workflows

Finding ways to increase productivity is critical in construction. Ideally, you want a cost management solution that can help automate manual tasks like elevating an RFI to a potential change order, moving change orders through the approval process, generating contracts, and payment applications with a few clicks of a button.

It is even better if the solution allows you to improve consistency and transparency of company-defined processes across projects by creating custom approval workflows. Utilizing a decision-based workflow engine, teams can automate the routing of internal approvals for Owner Change Orders, Supplier Change Orders, and Contracts based on specific conditions.

It's important to make sure the cost management solution you select not only allows you to automate processes but keeps a detailed log of the items activity for future reference.

Collaborative but Configurable Controls

Collaboration is important in construction. But in order for teams to effectively work together, stakeholders should be given enough visibility into the project's costs and progress.

That said, you don't want to give everyone the *same* view and level control. Giving people unnecessary information or too much control can cause confusion or wreak havoc onto your workflows.

For this reason, you need to adopt tools that can help you manage users and their permissions. See to it that your system enables you to grant or restrict access based on each person's role. Having the ability to provide "read only" access or features that allow you to hide certain information comes in handy.

Certain tools can even allow you to configure and optimize each view based on the information most relevant to the stakeholders. For example, executives can view cross-project cost information in a dashboard format to quickly and visually see areas of risk, concern, and general project health.

By having these capabilities in place, you'll not only be able to bring teammates into the system, but you'll have the ability to invite owners and suppliers to collaborate, which further streamlines your projects.

Gain Control of Your Costs with Autodesk Build

Getting teams on board a robust cost management system is the first step to improving your budgets and forecasts. Autodesk Build gives you all the tools you need to achieve better cost control. It helps you stay on top of your costs throughout the entire project lifecycle – including tracking change orders, managing supplier contracts and more.

With Autodesk Build, you get a centralized and flexible solution that paves the way for more accurate data visibility and better collaboration. This enables project participants to achieve higher levels of transparency and accountability, ultimately helping keep your projects on track.

Identify common overruns: The most common causes of cost overruns in construction projects

How Proper Planning Can Help Keep Your Project on Budget

It's safe to say that cost overruns in construction projects have become an industry-wide status quo. In fact, according to a study from KPMG, just 31% of all projects came within 10% of the budget in the past 3 years. However, with project budgets being scrutinised more so than ever and overall industry productivity remaining a constant concern, construction professionals can't really afford to accept the new normal.

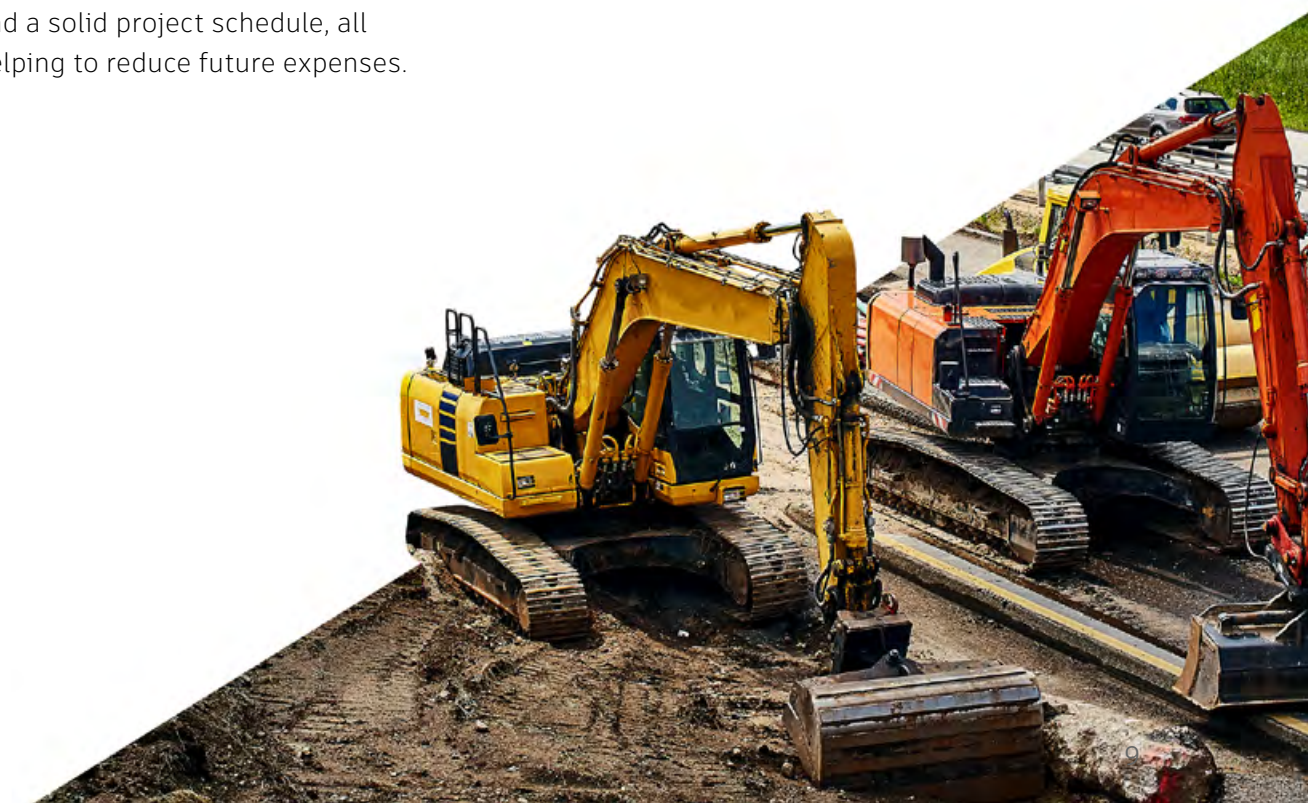
To know how to address cost overruns in construction projects, it's important to understand the root of the problem. Oftentimes, overruns hint at deeper issues in project management and from schedules and budgets being set improperly from the very beginning of the project. Although extreme weather or forces beyond human control can impact budgets, in most cases, a project's overrun is a result of inaccurate analysis or planning before building even starts. In parallel with better planning, technology can also help to reduce the common problems or elements that contribute to cost overruns, ensuring you can maximise efficiency and profits.

To help you keep overruns at a minimum, below, we highlight some of the most common cost overruns in construction projects to be mindful of and provide some useful strategies and implementations you can take today to keep your project within budget.

1. Inaccurate project estimates

While many of a project's stakeholders are eager to get the project's building started, if you have faulty schedules and budgets to begin with, your project is headed for an overrun from day one. Due to the competitive nature of the tendering process, estimates may suffer from wrongful expectations of the scope of work included in the project. In many cases, some projects will also be estimated on a one size fits all basis, with chances of exceeding that initial estimate high. Therefore, it's vital to your project's success to do your diligence in the preconstruction phase and be accurate and realistic about project deadlines and costs from architects and contractors. Estimating the project accurately can even be started in the RFP process. This is the opportunity where architects, contractors and owners can express their concerns over budget and timelines of the project. If either of the parties appears to be unrealistic about timing or budget, this should be an immediate red flag that the project is heading straight for an overrun.

Even though preconstruction and design services may contribute up to as much as 15% of your budget if this process can successfully identify potential issues before construction actually begins, that 15% will be nothing compared to the money saved on the process down the line. Because of the opportunity for cost savings, preconstruction is considered just as important as the building phase as it truly lays the groundwork for a complex project. A solid planning phase before groundbreaking ensures that you will have a better process of documentation, less confusion between administrators, and a solid project schedule, all helping to reduce future expenses.



2. Serious Project Design Errors

On the other hand, even if you allocate proper time and resources for accurate budget and schedule estimates in the preconstruction planning stage, if your design plans are defective, you'll inevitably be destined for cost overruns in construction projects. A design deficiency is a poorly designed, inaccurate or incomplete plan. Deficiencies are so common and a pain point for owners and designers alike that a study from Engineers Daily estimated that design errors accounted for 38% of construction disputes. At the same time, incomplete or incorrect plans almost always result in substandard work from the contractors completing the work, which can result in legal battles down the line.

Fortunately, these kinds of disagreements are completely avoidable in many situations. In the design phase itself, construction software can help reduce the risk of errors or incomplete designs by ensuring everyone is on the same page. Project management is much better served with software that can incorporate real time changes into account. If the project experiences an unexpected change in its scope or one of its process, it is much easier to plug those design changes into a dynamic digital model of the landscape than to redraw models on paper.

Alternatively, to enable contractors and subcontractors to build according to the design specifications, owners and contractors should agree on the specific Scope of Work and performance duties in the contract phase. This documentation should include clear references to all project specifications on design documents, warranties of the exact work to be completed by contractors, a risk allocation chart or definition and a process for unforeseen issues. Most importantly, this contract should define the dispute resolution and/or mediation process, if disagreements happen during construction so hefty legal fees aren't added in addition to other overruns that could occur.

By adding an extra level of security to ensure designs are correct and expectations are clear, projects won't have to suffer from overruns due to corrective work in the construction phase.

3. Not Planning for Change Orders

Often in conjunction with design errors, change orders are another very common reason for cost overruns in construction projects. A change order occurs when an owner or contractor realises that a design isn't working or might try to introduce new specs, fixes or requirements after initial models and budgets have been completed. Additional requirements will generally result in higher costs, which will obviously negate the original project budget. The additional time, manpower and materials required to complete a new initiative may also have to be classified as a cost overrun if the improvements affect other aspects of the project.

Consequently, changes can usually be best addressed in the contract phase, when a Change Order Provision can be added to specify procedures and budget needed, should a change occur. If it isn't addressed ahead of time, contractors might increase their total cost of a contract up front in anticipation of changes or disputes could arise if they didn't adequately plan for the overrun to begin with.

If you use certain construction software, you may have the ability to simulate different solutions for scope changes and budget accordingly in the preconstruction phase. Calculating different solutions ahead of time will be a much easier process, and you may be able to find a new level of functionality while reducing the number of extra resources used. Although scope changes may be necessary, they should be managed proactively and considered ahead of time to reduce the likelihood of cost overruns in construction projects.

4. Administration Errors

Even with solid designs and no project changes, your project could still experience overruns if project administrators aren't up to speed with your project's progress. When even small errors occur between the administration team, the results can be catastrophic. Furthermore, if lines of communication between administrators are limited, problems that occur on one aspect of a project may not even become known to other project managers until it is too late. Many contractors and owners believe that the best solution for bad administration is to simply increase the size of the administration team. The logic goes, with more people on the job, administrators will be able to focus specifically on their area of the project. However, this might not be the best solution in the long run as increasing the number of people in administration could lead to collaboration failures that will almost certainly involve a cost overrun.

Instead of adding more to your admin team, equip them with the right tools. Project management software can help play the role of multiple administrators. Unlike traditional administration, software gives a skeleton crew the ability to view the project from multiple angles, keeping up with many possible scenarios at once. Concepts can be changed digitally and compared side by side to previous iterations of the project. When it comes to human errors in invoicing, accounting and delivery monitoring that could contribute to overruns, software can also help to reduce this risk. Administrative errors are rather easy to avoid with a software system that guarantees the accuracy of all project documents and gives alarms for deliveries. With the full extra support digitally, administrators will have full visibility and flexibility into a project to keep operations and logistics running smoothly.

5. Poor Site Management

Design integrity, equipment condition and quality control are just a few of the many aspects of a project that need to be kept on track during construction. Unfortunately, this does not always go as planned leading to severe cost overruns in construction projects. Personalities clash just as often as a project's site changes unexpectedly. An inherent trust gap between owners and contractors may already exist because of the natural conflict of interest between the two parties and it can have devastating impacts on a project's momentum. That being said, even if both sides maintain a professional relationship, some projects are just too large to keep up with every site change and news may travel too slowly across departments.

Improving on-site communication with construction software can reduce some of the issues with site management. With software, calculations and designs can be referred to digitally for a more accurate reading and different scenarios can be tested side by side to see which will bring the better outcome. Because digital calculations are assured to be precise (based on accurate inputs, of course) and software designs can be trusted to accurately depict on-site descriptions, decisions can be made quickly based on solid information, not office politics.

The right software also provides more opportunity for collaboration. Online access to designs and scenarios allows for greater communication from remote locations. Decisions can be made while project leaders are on-site, looking at an issue directly. Faster communication also leads to better decisions, as real-time insight can address a situation before it snowballs into a bigger issue and implicates the budget.

6. Not Hiring the Right Team

Let's say that everything has been estimated correctly, the project plans are flawless and scope change is being managed effectively. Outside of all of that, overruns are still likely to occur if the team executing the work is not up to a certain level of standards. Poor and less experienced subcontractors can cause costly mistakes, delays and errors, even with the most impeccable designs and plans.

Unfortunately, when hiring subcontractors, many general contractors do not adequately qualify their project teams. Whether they are trying to work with the lowest tender or are just leveraging existing relationships, using the wrong team opens contractors up to massive risk.

Contractors who go through the extra steps to ensure subcontractor qualification will reduce the probability of experiencing significant cost overruns in construction. Today, fast and easy-to-use digital solutions are available to streamline qualifications.

Fixing Cost Overruns in Construction Projects Once and For All

Systematically reducing cost overruns should be a priority in your planning, if it is not already. Taking the time to evaluate the reasons for your own cost overruns and incorporating the right solutions will bolster your ability to execute complex projects with greater control. You also take home a bigger piece of the pie for your planning efforts, so why leave money just sitting on the table? Through proper planning and with the assistance of construction productivity software, you'll start to significantly reduce overruns in your projects and bring in more profits. Don't just accept the new normal of cost overrun in your construction projects – make sure that you have the right planning solutions and software to help complete your next project within budget.

Upgrade from spreadsheets: Manage construction costs in the cloud and ditch the spreadsheet

Why Excel Could Be Hurting Your Construction Company

Raise your hand if you have ever felt personally victimized by an Excel budget template, schedule planner or another form of construction management sheet hell? Are you starting to see red at every #REF! and #N/A you see? Do you grit your teeth every time you have to enter the same data in multiple sheets? Are your formulas spewing numbers that just don't make sense? Take a deep breath and consider this quick thought; a construction company without Excel.

You might be thinking, "Wait, you mean I don't have to use Excel?" Yes–and it's easier to do than you think.

In the past, Excel was a game changer–at one time, that is. In fact, released originally in 1985, Excel is nearly 33 years old, and the time has come for your company to push this software millennial into early retirement.

Similar to how accounting paper ledgers served a purpose before the dawn of digital, they are no longer effective and relevant to modern accountants with sophisticated and easy-to-use software like Quickbooks. The days of tracking, management and accountability with pure Excel in construction companies are ending–and with mobile and cloud-based construction software stepping in to take its place.

If you're continuing to use an Excel budget template or other spreadsheets in your construction company, your project could be suffering from serious and avoidable inefficiencies. Excel and spreadsheets should no longer be a part of your construction tech suite. Instead, make the switch to mobile construction software to increase your project productivity. Below, we'll explain some of the major flaws of having Excel in your organization, as well as how and why you should make the switch to construction productivity software (CPS) instead.

The Achilles Heel of Excel

At one point or another, we're betting you had to "learn" to use Excel. Some of us learned it as early as high school, some of us took a class in college and others were just tutored by Professor Google and the school of trial and error. No matter how in-depth your studies into Excel took you, it most likely gives you a feeling of dread when someone mentions the next big Excel "killer" to you. "You mean I need to learn how to use something like Excel–all over again?"

We get it. You most likely invested time to even achieve a basic level of proficiency in Excel and you probably feel at least somewhat comfortable with and perhaps protective of the tool. Nonetheless, there are some serious flaws with the program that you're overlooking in lieu of your software loyalty.

Human Errors: Manual Mistakes

Mistakes happen, and as humans, we're far from perfect. However, when human error occurs in business documents, they can have a monstrous effect. In just one instance from 2012, a single keystroke error in Excel caused the organizers of the London 2012 Olympics to oversell 10,000 extra tickets for swimming events. If you think this is just one freak incident, think again. Other companies like JP Morgan and Fannie Mae, have lost billions due to Excel mistakes. Chances are if you have a spreadsheet, you have at least one mistake. The issue is so common that according to a study from Carnegie Mellon, approximately 94% of spreadsheets have errors.

In a large construction project, one small data entry could end up easily costing your company millions, and maybe even billions, of dollars. Just a slip of a finger could cause you to incorrectly quote materials, underestimate labor costs or create massive scheduling confusions–none of which will help you achieve optimum efficiency in the long-term. Alternatively, construction software can provide the essential system of checks and balances that your current Excel spreadsheets and budget templates cannot ensure. With easy-to-use systems and templates, already tailor-made with construction projects in mind, you don't have to worry if you've forgotten a critical step in one of your functions.

Those Who Are Excel Experts… And the Rest of Us: Usability Gap

Ok, real talk. Who doesn't have to start a Google search every time they want to create a Pivot Table or even a somewhat complicated function? Generally, Excel users can be clearly divided into two groups of users: Excel experts and everyone else. The rift between these two groups proves that Excel has a major usability gap. Some know the program like the back of their hand and can create a construction budget template with Excel in their sleep, while others feel like they're asleep behind the wheel when they need to add in any function that's not basic.

If you're one of the many people who just doesn't feel like they completely know the Microsoft software, don't feel embarrassed. Excel is a powerful tool, but it's not for everyone, and it's far from intuitive. On the other hand, the right construction productivity software helps to level the usability playing field. With clean and user-friendly interfaces, construction productivity software like PlanGrid makes it easy for all team members to access and use, from owner to field worker. When everyone can use and easily view information from the same software, both technology adoption and productivity will increase on your projects.

What Are These Submittal Things Anyways?: Lack of Industry Knowledge

Although a powerful program, Excel is only a general tool. The software is not tailored for builders' unique needs, and it depends entirely on the user to make it work. For technology to truly help the construction industry, it has to understand what information builders use. Construction productivity software works for builders because it's made specifically with the construction industry mind.

Even if you can squeeze some of the information you need for projects out of Excel, if anything goes wrong, who are you going to call? Hint: *not* Excel-busters. It's highly doubtful that even the best Excel support specialist is going to be able to provide you with valuable instructions if they don't truly understand your needs in the construction business. Alternatively, if you have the right construction software, you'll have the right training and support team behind it to help you when you most need it.

Enter and Repeat: Manual Entry

Are you able to count the hours you have wasted in manual data entry in Excel? Depending on your job role, it could even add up to hours a week. Many construction administrators often need to update multiple spreadsheets with the same information because of the software's failure to communicate–even with itself. The manual intensity opens your project to massive inconsistencies and problems if you're relying on spreadsheets only in project, personnel or budget tracking.

The lack of automation from Excel can be particularly draining in the construction industry. As just one example, the amount of time it takes to compile submittals manually in Excel can take days, even weeks. However, with certain construction software, you can start to automate some of these previously daunting manual tasks–with a high degree of accuracy and consistency. For instance, PlanGrid's Automatic Submittal Log helps project teams create a submittals log in minutes. Imagine the time you could save and how much risk would be reduced if you were able to safely automate certain processes with minimal effort? Basically, all projects can benefit from certain automation features that CPS can only provide.

Who Updated Cell B3?: No Room for Collaboration

Although you might have access to a shared drive with all your important spreadsheets available for your multiple individuals to access in your company, an Excel doc is

really not made for more than one person to use. The platform seriously lacks the ability for project stakeholders to communicate and collaborate. Even if team members are both doing their diligence to update cells together, there's no way to know what has changed in real-time. Furthermore, unless you're saving multiple versions of a spreadsheet (another huge headache on its own), users can only see one version and have no reference to new changes. Unless you explicitly tell them, it's a shot in the dark for your team members to know you made an update to the project tracking sheet.

On another note, say you're in the field and notice something that needs to be changed or noted. How are you going to get this information in your Excel sheet? We're guessing you will most likely have to wait till you're back in the office or trailer, open your computer and hope you made enough mental notes to make the change correctly. Lack of mobility in Excel also makes it an inefficient program for projects that need constant monitoring of progress and changes. With mobile construction software, changes are not only easy to make in the field, but teams can be alerted on project changes critical to their individual job duties in real-time, ensuring the project moves along productively.

Hackers ♥ Excel: Poor Security

Where do your Excel files live? Most likely, they're directly on your computer's hard drive or company-wide shared drive. Even if you're the only one accessing your computer's files or it's password protected, your documents are far from secure. Consider how easily Excel sheets can be copied and distributed. If you have critical or confidential company or project data, in hackers minds, you're practically wearing a flashing sign saying, "hey, come steal my data." Even beyond the risk of theft, Excel is not secure just due to the fact that you could easily lose all your data in a second from a hard drive crash or oblivious coworker hitting the delete button.

If it's not already, security should be a major concern for your construction company. The right construction software offers enhanced security for your most critical project data. If you're making the switch to construction software, make sure you go for mobile software with cloud-based project management for enhanced security. Another consideration is SSO integration, a feature your IT department will be thanking you for later.

When Is It Time to Switch Your Excel Budget Template?

If you weren't aware already, you now know a few of the many downfalls of Excel. However, you still might be thinking, "but I like Excel–do I really need to make the switch?" Well, how about you answer this question first: would you ever revert back to writing handwritten notes, memos and frequent calls to coworkers after you've been using the well-known communication technology called email? We're guessing that's a resounding "no."

If you're still not convinced, here's an easy quiz to know if it's time to switch you Excel budget template, scheduler, project tracker spreadsheets or more to construction productivity software:

- Your company has data, lots of it
- You need user controls–or in other words, you only want certain people to view and edit certain data
- Your project success depends on real-time field updates
- Your systems and software to "talk," or share and analyze data
- Your company is growing–either in employees or you're taking on more projects

If you checked off one or more of the above, and we're guessing you did, it's time to make the switch. Excel can no longer handle all the complexities of construction. The time has come to adopt construction software, but where to begin?

Tech Swap: How to Get Started Making the Switch to CPS

Making the shift from your Excel budget template to modern construction software doesn't happen overnight. Nonetheless, with the right goals, team and plan, the switch doesn't have to be a massive undertaking. Here are a few things you should be considering when making the transition:

Choices, Choices…Choices: Finding the Right Software

The way your company operates and how projects are managed is probably slightly if not dramatically different from your competitors. As a result, your needs might require a different construction software solution from the next company.

Start by identifying your company's individual needs and figuring who exactly needs to view and edit project data. Starting here will help you identify and narrow down the key features your CPS should have. If you're down to two or three options, opt-in for any trials and demos the software company is offering–even better if you can consult with a real sales representative. Also, don't forget to ask for the opinions of a variety of team members who will actually be using the software on a day-to-day basis. You'll want to shop for software that benefits your entire team–not just the field and not just the trailer.

Out With the Old, In With the New: Making the Transition to CPS

Once you've chosen the right software for your company, the real fun begins–depending on how you look at it. Before you throw caution to the wind and just make the leap to an entirely new system, start to create a project plan. Get leadership and staff buy-in, gather a dedicated project team to help facilitate the shift and schedule trainings. All of these factors will contribute to your workers' adoption of the technology–key element in successfully seeing an ROI from your software. When it comes to transitioning your actual data, make sure you know exactly what needs to be transferred from your spreadsheets to CPS. Finally, hold your staff accountable for their own data transfers and give them key deliverable dates to meet.

Keep in mind that making the switch from your construction Excel budget template, schedule tracker or other project sheet doesn't have to be completely overwhelming. With the right plan and system, the transition will be relatively painless.

Need more tips to successfully implement new technology? Check out: Experts Share Tips for Successful Construction Technology Implementation

Say Goodbye to Your Excel Budget Template for Good

Take a moment of silence and say your goodbyes to Excel, at least for your business. We promise you'll never look back. But in all seriousness, it's time to manage out Excel in your company for good. If you're looking to excel in construction, it's time to get rid of your Excel budget template and project management tracking spreadsheets for good. So, get rid of your spreadsheets and adopt software that will actually improve how you work.

Understand and leverage the benefits of technology: Managing construction costs can lower insurance premiums

Reducing Project Risk with the Right Tech

Construction is a high-risk industry. In addition to workplace safety concerns, construction firms must also grapple with client disputes and miscommunications. The global average value of construction disputes was $30.7 million, according to Arcadis' 2020 Global Construction Disputes Report.

Disputes cause a number of disruptions during construction projects. Depending on the nature of the dispute and how it is handled, the result might be project delays, broken contracts and even litigation.

Good construction insurance can protect firms from the dire consequences of client disputes, but sometimes premiums can be prohibitively expensive. For smaller construction companies working on tight margins, high premiums can stand in the way of company growth.

A typical insurance premium may cost between 1 and 4% of the total cost of construction for a project. In a tight market, where contractors are competitive with one another, the higher-cost premiums can put some firms out of business or force others to make poor decisions about using lower quality insurance.

Premium costs are based, in part, on claim history. Therefore, reducing the number of claims made on the insurance policy helps keep the premiums low and puts more money back in the hands of the contractor. Contractors seeking lower premiums must systematically reduce their risk and back up their actions with the right documentation. To do this, it's essential to have the right technology. With the right systems and software, construction firm owners create a safer culture for workers on projects.

Software can also be used to create more effective communication processes between workers and management. Fewer miscommunications and accidents can lead to a reduction in construction insurance claims.

So, how can the right technology have such a big impact on a contractor's insurance premium?Let's explore six major risks that construction software helps to reduce.

6 Risks Mitigated with Construction Software

What are the significant risks that can be alleviated with the right technology? Here are six that can be mitigated today with the help of the right mobile construction software.

1. Defect

A construction defect can be a costly claim that could require additional work and money to fix. In some cases, defects can even cause harm to a contractor or a member of the general public.

Some defects occur because of a problem with the manufacturer's product, while other defects arise because of failure to perform a repair or remodel properly. Defects also happen as a result of mistakes or errors in the planning and design stages.

Technology reduces the risk of a defect happening due to a failure to perform a repair or remodel properly. By arming contractors with better data and access to the information they need, construction teams are able to avoid the mistakes that would lead to injuries and claims.

Technology can also reduce the time it takes to resolve or litigate defects, by providing the right documentation.For instance, tools like Autodesk Build and BIM 360 helps teams better track all asset related information organized in a central location. Teams can quickly access relevant documents, flag and respond to defects, and initiate faster inspections and testing.

2. Subcontractor Default

When subcontractors are unable to perform on a project, contractors are sometimes held responsible for the resulting loss of time or materials–known as subcontractor default.

Subcontractors default when they take on too much work or payments from other projects have been delayed. Vetting and hiring quality subcontractors with prequalification tools like TradeTapp is essential for reducing subcontractor default. Both brokers and carriers in the construction insurance industry, such as McGriff Seibels & Williams and AXA XL, have endorsed TradeTapp and its ability to minimize risk by subsidising access to the application for their Subcontractor Default Insurance customers.

3. Claims Discovery Delay

Contractors are responsible for their work, even long after the project wraps up. If a defect is discovered months after the contractor last sets foot on the jobsite, that contractor is still liable for the damage the error caused.

In the past, contractors found it difficult to defend themselves or clarify their actions when a problem occurred. Software that improves documentation and provides all information accurately could help the contractor avoid litigation.

For contractors, the Assets module in Autodesk Build and BIM 360 offers the ability to align project assets to the model, ensuring all teams have up-to-date information, and also provides a digital trail of what issues have been resolved during installation. These new capabilities also help minimize future risk and litigation by tying a historical record to each asset.

4. Property Damage

Occasionally, contractors cause damage to the property they are remodeling or improving. Once again, thorough documentation through construction software can help reduce this risk.

If the damage is not the contractor's fault, documentation can sometimes prove this to those who would turn to the contractor for answers. Alternatively, software can sometimes help ensure that damage is not created in the first place.

By giving teams the correct information when building begins, cloud-based software can prevent contractors from making the mistakes that would lead to this property damage.

5. Contract Compliance

Due to rework and coordination issues, the majority of projects experience some degree of schedule and cost overrun. With the enormous scope of work and level of detail necessary on projects, it's easy for one small thing to slip through the cracks—especially with scope creep from change orders and spec updates. The resulting ballooning schedules and costs can cause disputes and litigation between property owners and their contractors.

Insurance leader Aon recommends Pype to help address contract compliance by ensuring accuracy and fostering clarity of scope throughout the entire project lifecycle. For instance, Pype AI, included in AutoSpecs, applies the experience from millions of projects to search your specs for missing requirements.

These flagged requirements provide you with the information you need to discuss their impact on the budget, scope, or timeline with your client before it turns to litigation.

Connected construction software that bridges the office and field teams also can ensure contract compliance. By creating a collaborative environment and enabling information sharing between all project stakeholders, software ensures that rework and coordination issues are much less likely to arise. Overall, the right solution helps mitigate job costs and helps ensure the smooth completion of each project.

6. Safety Risks

Safety issues and incidents can raise your insurance costs. Insurance firm's use your experience modification rating (EMR) to calculate your premium for workers comp coverage. With a good safety record and lower EMR, your firm will pay less in premiums.

A strong safety culture and qualified subcontractors are foundational for reducing overall safety risks and issues. Technology can further solidify the success of safety programs and new innovations can even proactively reduce risk. For instance, machine learning technology, like Construction IQ in the Autodesk Construction Cloud platform, is an emerging way that firms are identifying and managing risks. Construction IQ scans project data and identifies high-risk areas that impact design, quality, safety, or project controls.

The machine learning capabilities in Construction IQ can be used with partner integrations like Smartvid.io to identify safety risks. This data can be sorted and viewed by location, and help contractors gain valuable insights into subcontractor safety practices, target recurring hazards, and prioritize projects or business units that need particular attention.

Reduce Insurance Costs with the Right Software

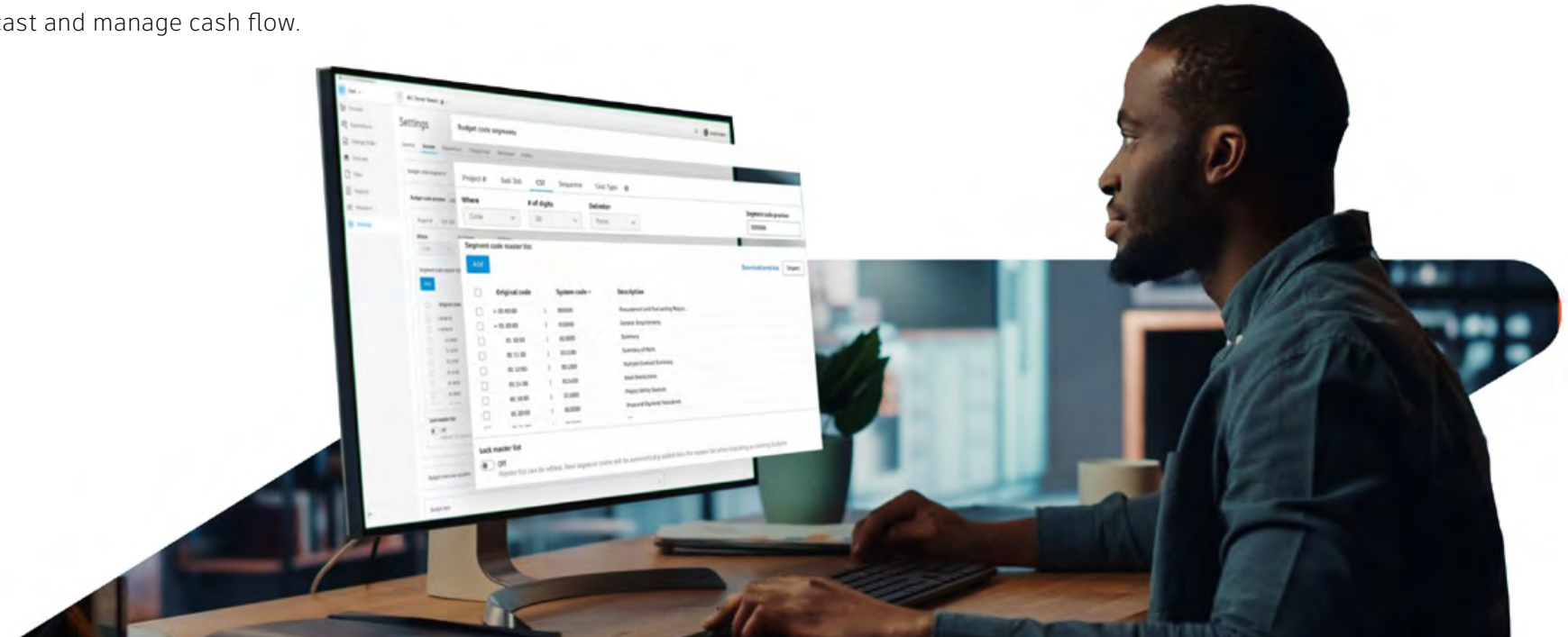
Many different types of construction software can help reduce project risk. Often, the best software can reduce your firm's chances for an accident or a miscommunication by enhancing collaboration and documentation.

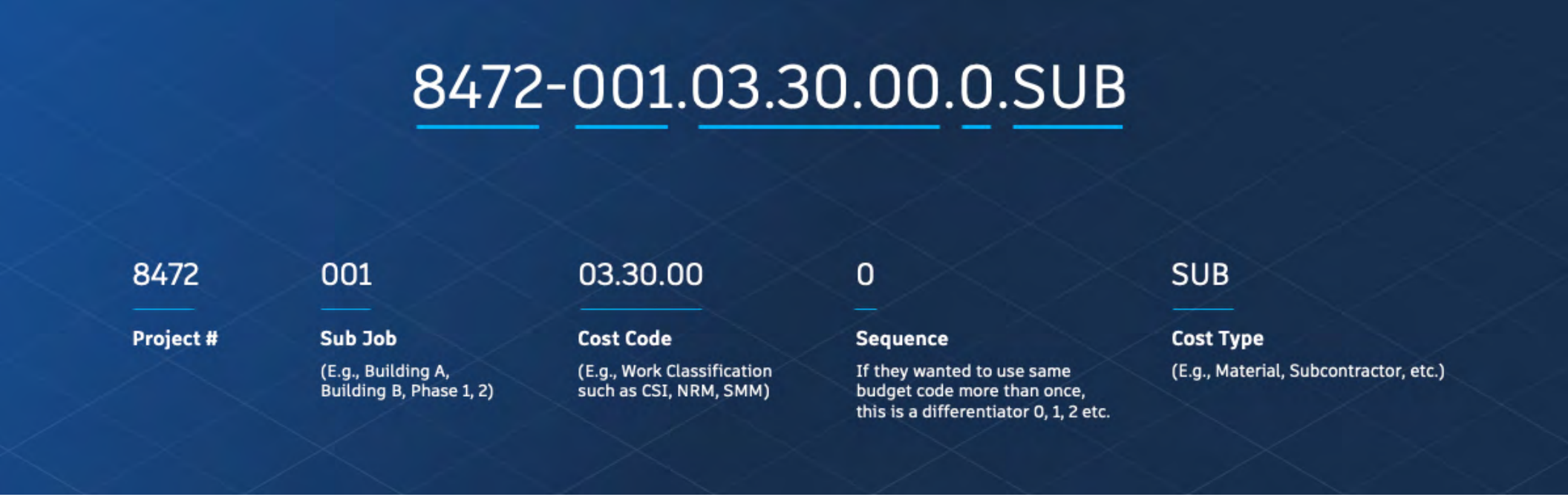
Autodesk Construction Cloud allows contractors to mitigate their risk and improve project outcomes through reduced defects, enhanced digital documentation, and improved access to data from construction to operations.

Cost code pro tips: Get started on the right track with the right tools

In 2020, the value of commercial construction amounted to approximately $5.8 trillion globally. Given the continually changing nature of construction projects, accurately managing and executing construction costs is critical to the project's financial outcome. A key piece is having the ability to see and compare how much specific items or tasks cost so you can correctly forecast and manage cash flow.

This is where construction cost codes come into play. Construction firms can use cost codes to document, categorize, and analyze costs efficiently. How do cost codes work, and what do you need to know about creating a code list in your organization? Keep reading to find out.





Construction cost codes example.

The Basics of Construction Cost Codes

Construction firms use cost codes to divide costs into specific categories. These codes are typically represented by numeric or alphanumeric values and often form part of an overall budget code and a key piece of a work breakdown structure (WBS). A good WBS may utilize multiple classifications and information to inform what task is being done (e.g., cost code structure such as CSI), to what (e.g., elemental breakdown such as Uniformat), where (location breakdown structure (LBS)), and by whom.

Using cost codes to organize and categorize costs provides better visibility into the costs associated with specific projects, jobs, and tasks.

Firms can analyze these costs to improve future estimating, budgeting, and forecasting on similar projects.

The format of cost codes often varies across firms and geographies. For example, in the US, they are often based on the Construction Specifications Institute (CSI) codes, and in the UK, the New Rules of Measurement (NRM) and then often customized to some extent to suit the particular company.

Using industry standard codes helps ensure that outside organizations can easily interpret them. However, firms may prefer to generate a completely custom list that suits their individual project and departmental needs in some instances.

The RICS has created the ICMS, which is a great initiative aiming to bring a worldwide standard to construction.

Below is an example of a full budget code used by accounting and the cost management system which are generally made up of smaller segments of information. Some companies have many segments, and some only one or two, but typically, cost code and cost type are common.

The Benefits of Using Construction Cost Codes to Plan, Budget, and Analyze

With cost codes, firms can efficiently account for all costs associated with projects. These cost structures offer insights into where and how expenses are generated and the ability to compare. While there are many benefits to using cost codes, the majority of them lie in standardization, cost control, analysis, and profitability.

Standardization

Of course, cost codes aren't the only way to divide costs into categories. However, standardization is important. For example, using descriptive phrases rather than codes leaves room for error. Someone inputting the costs may use a slightly different phrase than the next person searching for the data. As you can imagine, this makes for a confusing experience for anyone on the hunt for necessary data.

With cost codes, there's no room for misinterpretation. The codes are based on a series of standard classifications, which makes it simple for the construction management software to identify the desired firms and data. This simplicity keeps things efficient, repeatable, and replicable. The codes help to develop processes that can be measured and refined based on results.

Overall, the standardization of cost codes is essential to saving time, raising productivity, reducing mistakes, increasing scalability, and building efficiencies.

Cost Control

Construction firms must have a handle on costs to maintain budgets, deadlines, and scope across projects. This is especially true in today's times of economic uncertainty, fluctuating markets, and labor challenges. With cost codes, firms can quickly associate expenses with projects and activities as well as with outcomes.

These codes also fit into a central cost management strategy. Firms can pinpoint where costs are being generated, which activities generate the most costs, and which costs can be linked to profits.

Profitability

Firms often have multiple large-scale projects running concurrently. The nature of the industry presents challenges in determining which tasks are actually generating profits. Cost codes are essential for organizing data around tasks, activities, employees, equipment, and projects. This information can be used early in the project to identify where money is being wasted and where it is being generated. Early identification can help to set projects on the right track and increase profitability.

In the long term, firms can also leverage data around cost codes to determine which activities to invest in for greater profitability. Likewise, firms may choose to alter or streamline activities that are heavy on costs but light on profits.

How to Implement Cost Codes in a Construction Project

Once you create your cost codes, how do you implement them on a construction project for best results?

Adopt the Right Cost Management Solution

First, you need a solid project cost management solution that allows for flexibility and customization in how your codes are built. The nature of each project will vary across stakeholders, their processes, and costs.

With Autodesk Construction Cloud's robust cost management capabilities, you can flexibly customize your budget structures, including segments such as cost codes, sequence, and cost type, and create hierarchical build-ups. For each segment, you can choose whether the information will be shown as part of the code, in its own column, or hidden for information only. You can select the number of digits and delimiter between each segment value. But, one of the benefits of using software like Autodesk Construction Cloud's cost management toolset is the import master lists. For example, you can do a one-time import of a cost code master list, so you have every possible cost code you may ever need. This allows you to slice and dice your data flexibly and saves you time by not requiring you to build in groupings before importing your budget.

Define Objectives and Scope Early

Next, consider that changes are one of the main constants of construction. They can completely derail your budget and schedule if you cannot forecast and respond to them. For instance, early design changes are one of the biggest drivers of overruns. It's important to define objectives and scope as early as possible in the project so you can prevent change orders. Doing so requires early alignment and consistent communication across stakeholders and teams.

Still, a financial management solution that locks you into rigid processes and components won't work for the ever-changing nature of construction. Look for customizable solutions so you can easily integrate new stakeholders and processes as needed.

That data can be used to generate advanced insights into cost control workflows. These insights are ideal for strategic decision-making and continuous improvement.

Improve Cost Control with Cost Codes Today

Are you ready to bring more standardization and efficiency to your cost control workflows? Learn more about how you can bring more flexibility and control into your cost management workflows, including cost codes, with Autodesk Construction Cloud.

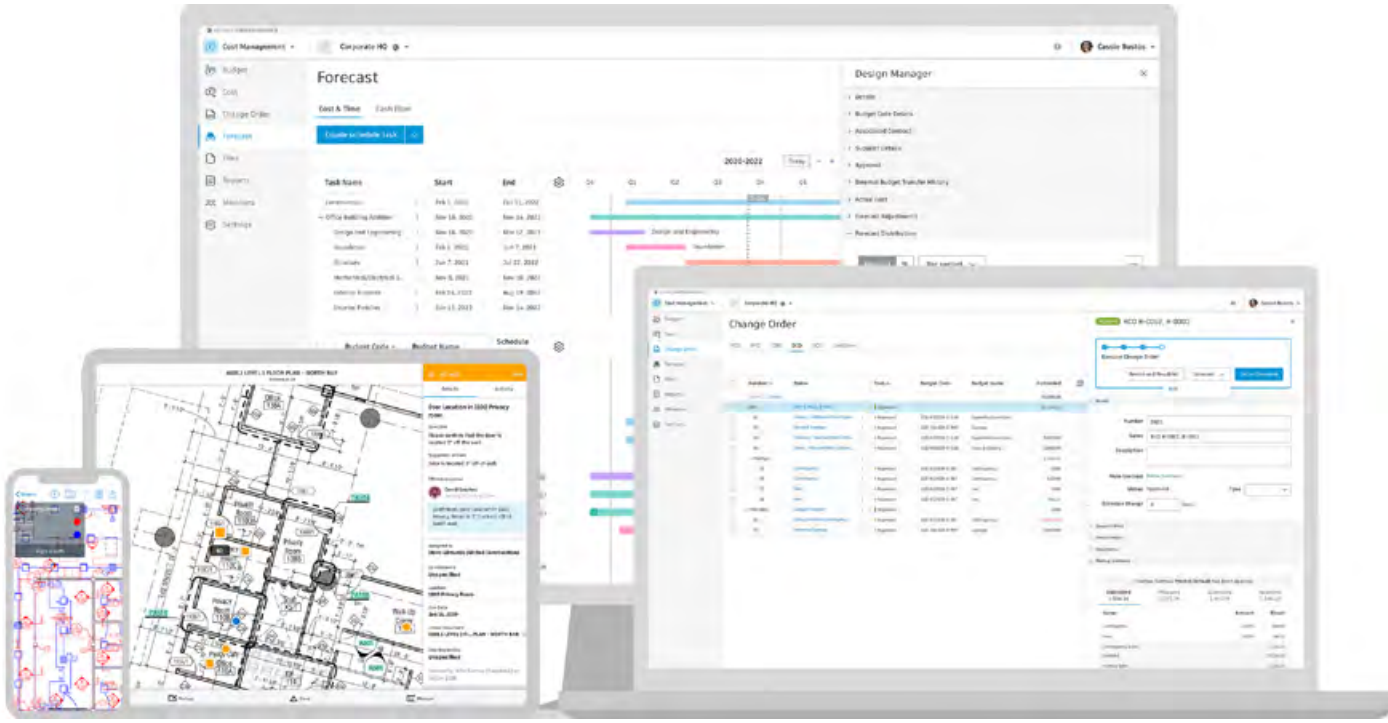
See the Future of Connected Construction

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.



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