



INEIGHT Smart Project Controls Instructions

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INEIGHT Smart Project Controls



FAQs

Q: How can I ensure project certainty using Integration Imperative Project Controls?

A: To ensure project certainty, make sure to adopt a connected construction technology, establish a clear data strategy, involve project owners actively, and focus on outcome-driven processes throughout the project lifecycle.

GROWTH, COMPLEXITY, AND THE CASE FOR INTEGRATION

The construction industry is at a turning point. As the energy transition, sustainable building practices, infrastructure investments, and other forces continue to generate opportunities, fielding successful projects is more difficult than ever. Labor is limited, materials are hard to secure, and final deliverables are often well beyond their original budget and delivery date. And yet, despite an ongoing struggle to deliver project certainty, the work continues to pile up. This reality leads to an interesting possibility—if an organization can find a way to spend its dollars and manage its workforce more efficiently, it can quickly differentiate itself from other competitors and have its pick of offerings. For a projectowner, the choice between certainty and visibility versus ambiguity and assumption is really no choice at all. Achieving differentiation based on efficiency starts with the right tools. Smart project owners and contractors already benefit from connected construction technology. With thoughtful planning, teams can take a modular approach to adopting highly scalable integrated systems and grow as their business dictates, meeting today's needs while paving the way to a fully developed future.

THE CHANGING DEMANDS OF THE CONSTRUCTION INDUSTRY

The Need for a Clear Data Strategy

From start to finish, construction projects generate a lot of data, but few organizations have a strategy for making strategic use of that information. An Oxford Economics survey found that most organizations involved in capital-related projects recognize digital transformation as the biggest enabler of their future growth. In fact, nearly every response acknowledged a desire to do more with their data.

The Role of Construction Project Owners

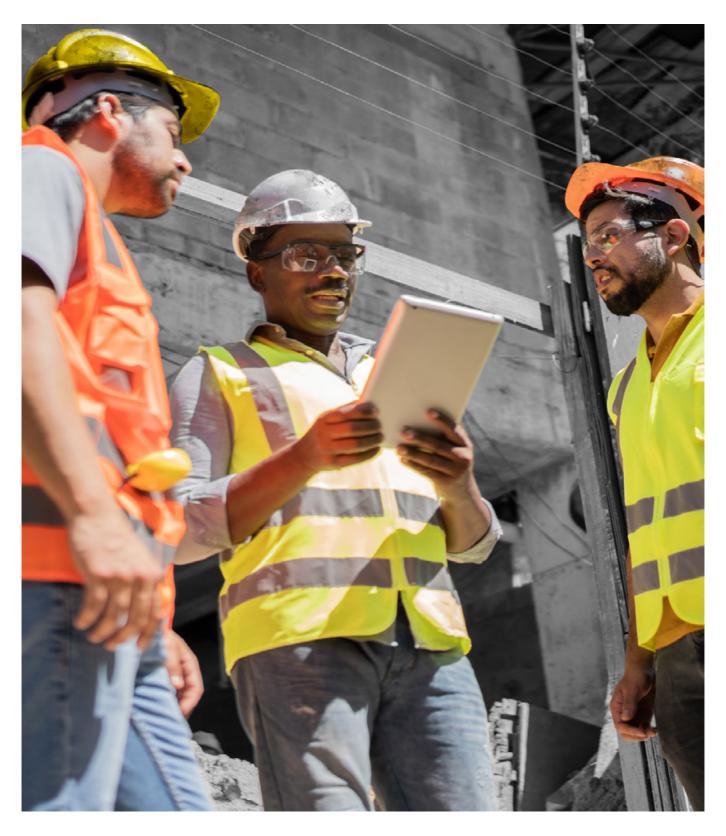
The modern construction space is seeing greater involvement from project owners and financiers than ever before. From preconstruction to operation—particularly in critical construction projects—today's key stakeholders are more hands-on and integrated than their historical counterparts. Owners adopt an arms-length, supervisory role or may get intimately involved in design and construction as an active collaborators depending on the project delivery model. This increasing need for greater visibility and involvement requires more comprehensive and connected digital solutions to support that collaboration. With improved data capture tools and digital project controls, owners and their teams can anticipate issues before they occur, establish more realistic plans, and account for future risks—creating greater project certainty throughout the project.

The Push for Outcome-Driven Processes

As aging workforces, shifting regulatory demands, and other major internal and external trends continue to pressure the construction industry, there's been a considerable shift into more outcome-driven processes. This transition impacts every phase of a construction project and redefines future success for the industry.

Shifting Workforce Demographics

In Q4 2023, the construction industry averaged 445,000 job openings per month—a 14% increase over the 2022 average and a new record high.1 At the same time, industry unemployment dropped to 4.4% nationwide—the lowest recorded rate for the construction sector.2 The foundation of this labor shift is a workforce that continues to age. 91% of U.S. construction companies have issues finding skilled workers.3 According to the U.S. Bureau of Labor Statistics, 22.7% of all construction workers are over 55 years old, while just under 10% of the current workforce is 24 years old or younger.4 As the bulk of construction professionals inch closer and closer to retirement, organizations are eager to back-fill those roles, but the talent simply isn't there.



There's an opportunity here. Organizations willing to step back and examine today's project landscape recognize the productivity, efficiency, and profitability improvements available at every phase of the construction experience. Integrated project controls, whether implemented modularly or all at once, offer a chance to notonly grasp those opportunities and a sustainable business difference but can set an organization on the right path for success well into the future.

- 1. Job openings drop, but demand persists. Construction Dive. January 31, 2024
- 2. Half of State Construction Unemployment Rates Down in December 2023 From a Year Prior. Associated Builders and Contractors. Feb. 5, 2024
- 3. Construction Workforce Shortages Risk Undermining Infrastructure Projects As Most Contractors Struggle To Fill Open Positions. Associated General Contractors of America. August 31, 2022.

4. The Construction Industry: Characteristics of the Employed, 2003-20. U.S. Bureau of Labor Statistics. April 2022

WHY INTEGRATED PROJECT CONTROLS?

For construction teams, project controls integrate all the necessary management processes onto a single platform. This streamlining helps owners access information across every phase of the project while supporting better monitoring and execution.

Modular project controls also address the disconnect between point solutions. While ad hoc tools may work well in niche scenarios, the constant addition of disparate platforms invites unnecessary complexity, costs, and even security risks. The resulting data silos built across different vendors' software make compatibility and integration all but impossible and instead reinforce the isolation of roles and divisions across the organization. It's like putting seven puzzles into the same box and wondering why the picture doesn't work. Point solutions were never meant to fit together. However, an integrated solution connects tools so users can better understand their past projects, current state, and future outcomes. These real-time perspectives enable better decision-making, mitigate risk, and improve project outcomes.



PROJECT CONTROL SYSTEMS ACROSS ALL PROJECT PHASES Pre-Planning

An integrated project control system aims to unite every relevant input under a single source of truth; in preplanning, that means bringing together estimating, bids, risk analysis, and tender information into the schedule. This consolidation enhances engineering management so owners can see changes in real-time, recognize their impact on cost and delivery deadlines, and decide whether to retain the design or pursue an alternative solution.

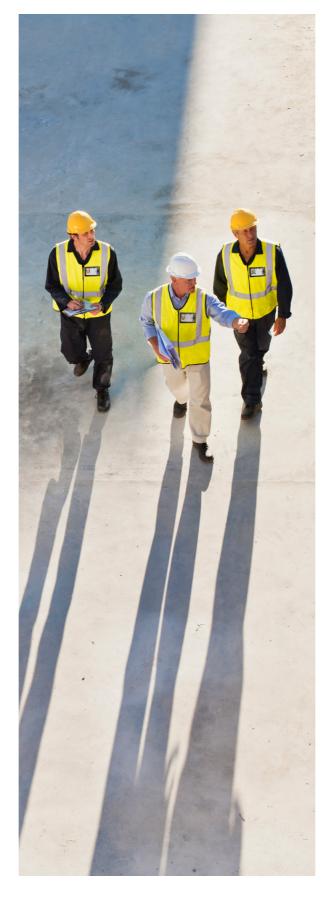
Design and Construction

When material and transportation costs can change daily, teams must keep a close eye on the health of their project. Project controls offer the right execution tools to gather progress from the field and feed that data into accessible reports for key stakeholders.

Startup and Operations

Project controls ensure handoff goes as inspected by collecting essential documentation, inspections, and models. Owners receive a complete historical record and a well-documented and visualized digital twin that provides valuable insights throughout the asset's lifetime. Likewise, all project and commissioning data is readily available to the operations team.

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SOLVING FOR CONSTRUCTION PRE-PLANNING

THE BEST OUTCOMES START WITH A WELL-LAID PLAN

From identifying project scope and feasibility to constructability analyses and scheduling, pre-planning ensures stakeholders have the insight they need to proceed with certainty. Communication is key in pre-planning. The information captured throughout this phase serves as the foundation for everything that follows. As new information comes in, it's critical that each contributor works from the same information and not get buried under

outdated sources.

CORE CHALLENGES Risks Unidentified Early On

Budgets and schedules quickly spiral out of control without early risk detection. Engineers unknowingly bake unexposed risks get baked into design details, multiplying and exacerbating the inevitable negative impact.

Budgets and schedules quickly spiral out of control without early risk detection.

Poorly Defined Scope

Whether it's poor communication between stakeholders or serious problems during handoff, a poorly defined scope leaves all parties frustrated and confused while costs continue to pile up.

Inappropriate Revision Control

Revision control ensures all stakeholders reference the latest project drawings and agreements. As projects go on, the number of collaborators and documents increases exponentially. Without a clear process for managing these documents, projects are destined for delays, disputes, and rework.



PROJECT CONTROLS FOR PRE-PLANNING Proactive Risk Mitigation

Risk mitigation starts with benchmarking. Project controls enable users to identify known risks from current and past projects and account for how "what-if" scenarios could impact cost and schedule now and in the future. By integrating these tools, project controls can determine the potential impact even when the scope changes—not just in pre-planning. This accessibility equips owners to develop proactive mitigation strategies for any obstacles that could potentially arise. Sharpening Scope Through Smarter Tools Machine Learning (ML) and AI simplify scope definition. By allowing an inference engine to explore past project data and make suggestions based on those events, AI/ML reduces the overhead and complexity associated with scope analysis. AI can even leverage that same data to identify best- and worst-case scenarios for various scopes so that each stakeholder clearly understands their options and reasonable outcomes. Revision Control Within a Data Repository Project controls centralize project data and make it easily accessible to approved stakeholders. Considering that in 2022, the

global average value of a single construction dispute costs \$52.6 million,5 informed decisionmaking and improved control can save projects and improve relationships.



SOLVING FOR DESIGN AND CONSTRUCTION

Design and construction come down to feasibility and compliance. Whether it's ensuring a drawing meets federal regulations or that a contractor can reasonably meet the owner's objectives, this phase balances costs with capabilities to achieve an optimal outcome. Ideally, owners should have access to progress dashboards and reports, providing visibility and transparency across earned vs. planned vs. actual project costs and durations.

Inadequate Risk Assessment

The critical path method of project scheduling defines task lists, assigns durations, and then sequences activities. Similarly, teams develop budgets by breaking down costs according to the scope of work and necessary resources. In both instances, the biggest challenge is identifying known and unknown risks and adjusting the budget and schedule accordingly. Since construction projects often involve highly specialized equipment and complex logistics to get people and materials to the work site, the absence of a risk-adjusted procurement plan is detrimental to the project's budget and schedule.

Optimism Bias

Common human bias and overly optimistic risk and expectation scenarios invariably lead to less-than-ideal project decisions and, in turn, their outcomes. "Gut feel" is not a reliable calibrator for task duration, leaving percent complete calculations off at best and heavily skewed at worst.

Inconsistent Project Management

The average infrastructure project takes between three and ten years to complete. Organizations experience considerable turnover during that window. Without a robust project management process, teams cannot ensure project continuity from start to finish. Without a robust project management process, teams cannot ensure project continuity from start to finish.



PROJECT CONTROLS FOR DESIGN AND CONSTRUCTION More Realistic Designs, Budgets, and Schedules

Project control systems enhance scope, cost, and schedule predictions while reducing risk. The consolidation of past project data means stakeholders can more confidently account for risks and unknowns. Such accommodations ensure that project scope and designs aren't overly aggressive relative to the budget and that schedule assumptions aren't underpinning the business case for the project.

Reduced Optimism Bias

By introducing an objective resource, project controls reduce and often eliminate human bias and overly optimistic scenarios. Instead, these tools produce variables based on fact. The system can derive the duration of tasks by referencing productivity rates and quantities from similar historical projects. In addition, rules of credit can be applied during progress tracking to remove subjectivity from percent complete calculations.

Real-Time Project Tracking and Management

Integrating cost, schedule, and scope under a single project control platform can help track real-time project

performance. Stakeholders can closely monitor these metrics and tag any deviations beyond the acceptable range as true risks requiring attention.



SOLVING FOR STARTUP AND OPERATIONS

Startup and operations mark the beginning of an exciting and often delicate new phase for any project. Activating a water treatment plant, for example, will only be deemed complete when fully handed over to the owner as operational in the manner predicted. Ideally, this phase should be smooth and certain for a project to succeed.

CORE CHALLENGES

Inadequate Capture of Site-Related Incidents

Failure to adhere to job site health and safety standards can lead to significant delays and expenses. Considering that construction workers accounted for nearly 20% of all on-the-job deaths among U.S. workers,6 improving the capture and registration of safety-related issues is critical for protecting workers.

Lack of Collaboration Between Specialist Teams

With the focus on scope, cost, and schedule, it's easy for stakeholders to overlook asset startup and commissioning early in the project lifecycle, but failing to budget and schedule for the validation and activation of the asset compromises project success.

Uneven Documentation at Handover

At handover, every project-related document must be validated and confirmed as the latest version of that deliverable. If drawings, inspection results, warranty documentation, and other as-built documents aren't accurate and easily accessible, it creates significant challenges for those responsible for maintaining and operating the finished asset. Those challenges become exponentially more complex when relying on paper-based documentation or a poorly organized digital library and can add unnecessary costs and delays.



PROJECT CONTROLS FOR STARTUP AND OPERATIONS

Centralized Document Sharing for Incident Capture

Consolidating documents into a centralized project controls repository equips teams to better control their documentation and management processes and improves incident reporting. With a single source for sharing resources, appropriate stakeholders can all access the identical versions of the same documents, all while automating and tracking document collection—including incident reports—resulting in greater accountability and

Improved Process Visibility Enhances Collaboration

With full visibility into construction schedule and task completion statuses, startup teams can properly execute all handover and commissioning activities as planned. Project controls ensure visibility and collaboration for all stakeholders, facilitating the creation, assignment, and completion of checklists by the construction team along the way and ensuring the asset is truly ready for operation.

Smooth Handover and Operations with a Digital Twin

Digital twins enable successful asset operation by offering easily accessed as-built documentation. Within a 3D model, users can access inspection forms, certification, quality documents, warranty documents, and more for easy verification

and access just by clicking on a particular component. This point-and-click solution streamlines maintenance decision-making and makes assessing future expansion or upgrade projects easier. The digital twin can also include details like care and maintenance of installed equipment before owner handover.



WHAT WILL YOUR FUTURE BE

CONSTRUCTION OPPORTUNITIES AREN'T SLOWING DOWN

While organizations continue to assess their options, savvy project developers and investors are looking for methods and solutions that enable them to independently monitor and evaluate project progress without relying on

other stakeholders.

- A modular project control system can grow with the needs of any aspiring business. It can help meet strategic
 objectives and manage risks more effectively risks that promise to rise in complexity as projects do the
 same. By connecting data across integrated platforms and uniting workflows, owners and contractors gain
 greater visibility across the lifecycle of their assets and ensure a more successful project well into the future.
- This makes project controls and other innovative solutions so compelling—the ability to grow and support an organization, regardless of its readiness or complexity. As more and more construction organizations choose their stance on transformation, those who choose to explore new technologies realize the profound impact of innovation. There's always time for more conservative companies to change sides, but who knows what will be left when that time comes. Today, the choice remains yours. Creating an integrated project control system doesn't mean scrapping your entire ecosystem, but it does require a step. At InEight, we specialize in helping our clients identify opportunities for transformation and guiding them through every stage of their journey.
- A modular project controls system can grow with the needs of any aspiring business. It can help meet strategic
 objectives and manage risks more effectively.



About InEight

InEight provides field-tested project management software for the owners, contractors, engineers, and architects building the world around us. Over 575,000 users and more than 850 customers worldwide rely on InEight for real-time insights that help manage risk and keep projects on schedule and under budget across the entire life cycle. InEight's solutions are built on an open, functionally rich, and modular technology platform that drives seamless integration with other systems.

• For more information, visit InEight.com.

Documents / Resources



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References

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- User Manual

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