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Toward Collaboration's Future

STRENGTHENING THE ARCHITECT-CONTRACTOR RELATIONSHIP

A Principles-Based Framework for Architects, Contractors, and Owners

Contents

Introduction

Critical Audience: This framework is designed for architects, contractors, and owners collectively. It supports both field and office teams, including project architects, superintendents, estimators, designers, sub consultants, program managers, and subcontractors. It is also intended for executive leadership to set expectations for project culture and performance. The framework assumes that owners have a significant role in promoting collaboration because of factors such as project delivery method, project team structure, and a defined scope of services for all parties. Where applicable, the owner's participation is explicitly included; otherwise, users should consider whether owner-involvement would enhance the collaborative outcome.

Introduction: Everything is built on common values, both conceptually and practically. Aligning these values is the key to improving the effectiveness of architect and contractor teams, as this document will demonstrate. Both modern and ancient architects and contractors demonstrate their art and science within their respective crafts, and they considered the two as one from concept to completion.[1,2,3] However, history has cast a wedge between concept and construction.

In many cases, this divide has widened through statutory language and risk aversion, resulting in project team tension, misaligned incentives, secrecy, and introducing its own collections of duplicative inefficiencies. These conditions have caused myriad project delivery processes to develop, some of which reinforce these divisions or worse, and relegate and diminish the value of the other. At a time when, until 2025, construction costs significantly outpaced inflation[4], no one wins.

Various organizations, such as the U.S. Army Corps of Engineers (USACE)[5] and the Construction Owners Association of America (COAA)[6], have developed their own approaches to aligning the entire team of architects and contractors. Other societies – the Design Build Institute of America (DBIA), Construction Management Association of America (CMAA), Lean Construction Institute (LCI), and very large municipal and institutional repeat procurers of design and construction services – each have their own approaches. Many architects and contractors have noisily opined about this perpetual issue.

While similarities with various delivery methods may echo the content of this document, the purpose of this framework is not to duplicate, challenge, or endorse other existing approaches, but to clarify and amplify concepts and methods for members of The American Institute of Architects

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[1] Buchanan, R. (2009). *Thinking about Design: An Historical Perspective.* Handbook of the Philosophy of Science. (pgs. 409-453). https://doi.org/10.1016/B978-0-444-51667-1.50020-3.
[2] Crook, J. M. (1987). *The dilemma of style: Architectural ideas from the picturesque to the postmodern.* (pg 116). University of Chicago Press.
[3] Macdonald, A. J. (2001). *Structure and architecture.* 2nd Ed. Routledge.
[4] Federal Reserve Bank of St. Louis (2025). *Total Construction Spending: Total Construction in the United States.* https://fred.stlouisfed.org/series/TTLCONS.
[5] American Institute of Architects. (2025) *January 2025 AIA Consensus Construction Forecast.* https://www.aia.org/resource-center/january-2025-aia-consensus-construction-forecast.
[6] Construction Owners Association of America. (2025) *The COAA Way.* https://www.coaa.org/the-coaa-way-podcast.

(AIA) and the Associated General Contractors (AGC) to improve team dynamics, project outcomes, and the value provided by our respective members. This work is a unified statement by the authority of both organizations, grounded in the findings of a multi-year dialogue and initiated by the 2019 industry-wide Architect's Journey to Specification[7]. This framework is not exhaustive but is meant to launch additional inquiry within the professions and industries served by both the AIA and AGC. Lastly, this document is not intended to supersede or supplant existing practice standards such as the AIA's *Architect's Handbook of Professional Practice* [8], as that document has inherent legal implications in licensure and case law.

This framework categorizes project collaboration into distinct topics, which are adaptable to any project's size, phase, and delivery model, and also serve as references, checklists, or starting points for structured collaboration.

Communication

Openness and Transparency:

Extensive research underscores the critical role that open and transparent communication plays across diverse sectors[9, 10, 11], and is equally applicable to project delivery teams, especially between architects and contractors. Rather than reiterating the well-established and self-evident advantages of transparency, this framework delineates actionable strategies designed to resolve prevalent conflicts within such teams. Necessarily, this discussion presumes a shared commitment among team members to honesty, trust, and mutual achievement as core values guiding collaborative efforts. A culture grounded in contractual clarity, professional integrity, and open communication improves project success. Finally, the duty to communicate clearly and in good faith is an indispensable element of any project agreement and is foundational to the avoidance or reduction of disputes and the efficient delivery of contractual obligations.

We recommend that the project team initiate the project with a comprehensive project workshop, during which objective elements, such as goals, contractual obligations, timelines, critical risks, and governing specifications, as well as interpersonal elements, such as team dynamics, respective organizational pressures and incentives, and personality traits are reviewed. This ensures that all project stakeholders have the opportunity for a clear understanding of the contract requirements, intended deliverables, and the attitudes by which the team will operate and define

[7] American Institute of Architects. (2025) *Architects Journey to Specification.* https://www.aia.org/resource-center/the-architects-journey-to-specification.
[8] American Institute of Architects. (2013) *The Architect's Handbook of Professional Practice, 15th Edition.* ISBN 978-1118308820
[9] Ebohon, E. (2024). *Building Trust through Transparent Communication in Conflict Management.* Unilorin Journal of Lifelong Education, 8(special), 253-267.
[10] Sathyamurthy, M., Nair, V. V., Mohamed, I. S., & TS, D. (2024). *Interpersonal Communication, Emotional Intelligence, Conflict Resolution, Relational Satisfaction Among Intimate Partners.* Public Administration and Law Review, (4 (20)), 65-72.
[11] Hermawan, V. (2025). *Transparency in Government Political Communication: Challenges and Opportunities.* Jurnal Ekonomi, 14(03), 103-114.

success. Subsequent regular surveys and checkpoints, attended by both design and construction team members, are necessary to maintain alignment with these understandings and facilitate the timely resolution of issues as they arise.

The adoption of digital project management platforms, such as Building Information Modeling (BIM) and various Project Management and Communication platforms, is recommended to centralize project documentation and facilitate collaboration and communication. Digital tools can be leveraged for contemporaneous tracking of the design as it develops and clarifies the conditions related to Requests for Information (RFIs), submittals, and design changes, constructability reviews, monitoring of critical work, and many others.

Since projects are fraught with risks for all participants, all project principals may be generally reticent to expose them. Owners may be concerned that exposing the entire project budget will lead to cost escalation. Architects may be concerned that the inherent nature of design begins with indeterminate ideas and evolves into clear selections of systems and materials. Contractors may be concerned that costs are just as ambiguous in the initial stages and must also address market volatility (including the effects of tariffs). However, transparency is paramount to appropriately manage expectations. An early and honest disclosure of actual required deliverables, personnel involvement, expected level of engagement, budgetary constraints and targets, and overall conditions of satisfaction by the owner will further promote collaboration and prudent allocation of the owner's resources and their stewardship by the architects and contractors, and ensure alignment with the project's expectations. However, these conditions are built on trust.

All parties should maintain an open dialogue to honestly and completely discuss risks, such as potential problematic or unforeseen conditions, and develop plans to manage these risks. For example, architects can identify areas of heightened significance or require construction input for further definition/detailing. Or if contractors are engaged during the design phases, they can provide constructability analysis and real-world material and labor cost feedback, thereby reducing risks related to the feasibility and economic viability of proposed design solutions. Where appropriate and contractually allowable, team members may elect to formalize a design-build or integrated project delivery (IPD) framework to protect collaboration at all project phases.

Change management protocols should be expressly documented and incorporated into the contract documents, specifying the process for requesting, evaluating, and approving modifications to the design scope. Routine reviews of the design as it develops, site walks, and milestone reviews should be contractually stipulated as mechanisms for real-time feedback and continuous improvement. Whether stipulated contractually or not, both the architect and the contractor are encouraged to designate authorized liaisons to expedite communications, resolve concerns, and maintain consistency.

The architect's duty to design according to a budget relies on accurate cost estimating, a process that should commence at the earliest project phases based on comprehensive design narratives and graphical documentation. Also, contractors have a similar duty to provide clear summaries and market cost information where applicable, accompanied by comparative historical data where

available, to ensure a reasonable degree of accuracy and reliability to meet the established target budgets and project goals. Subsequent design decisions rely on this information. Both the architect and the contractor have contractual obligations to the owner to reduce project delivery risks. Depending on the project delivery methods established through the owner contracts, open-book pricing, in which contractors are expected to provide detailed cost breakdowns of labor, materials, equipment, logistics, and subcontractor costs, is based on the architect's clear statements of design intent and programmatic requirements. Emerging alternatives progressing beyond traditional value engineering toward value management promote and identify cost reduction alternatives without derogating the project's goals. Value management has reached the point of general adoption by many project delivery teams.

We recognize that the same team members who begin a project are not the same team members who complete the project. Team churn and personal forgetfulness are real phenomena, and continuous team collaboration and cohesion need to be recognized and managed. The use of a design decision matrix might track the evolution of design choices in initial stages, and a change log would track the costs, reasons, and resolution of changes during construction, with all parties having equal access to these tools. Representatives from all project stakeholders' operational teams should be included during design and preconstruction to preserve institutional knowledge and project continuity.

Proactivity

Effective and proactive communication is essential for successful architect-contractor relationships. Project-related conflicts often lead to accusations and strained relationships, both of which are costly in terms of project finances and trust. To mitigate this, both parties should proactively communicate potential pitfalls and constraints that may cause the most common project problems, such as potential scope revisions, code compliance, errors and omissions, project delays, construction field conflicts, RFI submittal timeframes, change order processes, and supply chain issues. Transparency with all stakeholders, including the owner, is likely to reduce team strain and allow risks to be managed, minimizing their impact. Setting conditions of satisfaction and project norms early on the project will allow the interdisciplinary management team to assess the team's performance.

Clear communication of project constraints, parameters, and processes is necessary. This includes setting and agreeing on project parameters, levels of detail for documents, submittal processes, and design team time in the field. Some of these may also be contractually required. The project schedule may become an appropriate vehicle for proactive communication.

Architects and contractors both have a vested interest, and in some cases, a contractual obligation to discuss project risks with the owner early in the project to set realistic expectations and develop strategies to manage these risks. This includes establishing and managing appropriate contingencies and allowances, and ensuring appropriate time is provided for design and pre-construction with their associated approvals. This process should start early in the design process and continue through project completion. In some cases, mutual advocacy, especially at the

commencement of a project, for certain things like a properly defined scope, adequate fee, and time to accomplish the scope, and the establishment of proper expectations, can be mutually beneficial while also being in the owner's best interest.

Personal character matters. Each member of the project team should be trustworthy and honest regarding the facts of the project and clear regarding framing risks. This honesty may result in full agreement, partial agreement, or no agreement. However, when participants do align in their respective perceptions of project conditions and risk management, they should be free to express their opinions in support of other team members without reprisal. The converse should also be true.

Service Delineation

The unambiguous delineation of the scope of each principal stakeholder is a fundamental component of administering the multiple contracts associated with the project. This disambiguation process requires work among trusting team members. Early collaborative meetings, which may be stipulated in the project delivery agreement, should be convened to define individual scopes, responsibilities, and gaps in either, as well as project expectations. Roles should be clarified to ensure accountability by aligning the service scopes of all stakeholders and memorializing them in contract deliverables, each supported by the use of work breakdown structures (WBS) and responsibility assignment matrices, such as RACI charts, etc.

The myriad contracts associated with the project must explicitly enumerate all required deliverables, including but not limited to drawings, technical specifications, project schedules, and procurement plans. Such specificity is necessary to align expectations, manage risk, and reduce the likelihood of dispute.

Mutual Success

History has demonstrated an attitudinal spectrum between an architectural team and a construction team related to each other's success. This spectrum ranges from combative: "We don't care if you're successful or not; we're looking out for ourselves" to mutually supportive: "When you succeed, we also succeed." Research demonstrates that the former leads to higher mutual frustration, lower profitability, lower quality, and increased claims and litigation. While the latter can have the exact opposite effect.[12] The discussion that follows presumes a mutually supportive approach because of the significance of its improved outcomes. Additionally, the following discussion does not assume any project delivery method, project complexity, or project type, but it relates to the attitudes with which ALL team members contribute their respective experience and skills to a successful outcome.

[12] Wingo, Travis; Asker, Mohamed. *Construction Claim and Dispute Collaboration: A High-Level Review*. American Bar Association. 8 May 2024.
https://www.americanbar.org/groups/litigation/resources/newsletters/construction/construction-claim-dispute-resolution/

Project Intent:

All project participants have a vested stake in clear, understandable, and memorable project goals and objectives. These should be memorialized and continuously referenced in team communication. Additionally, each team member should understand how their work directly impacts the achievement of these goals, as well as their situational awareness of the other multi-disciplinary members of the team.

Projects develop out of nothing, translating ideas into purposeful and occupiable spaces. A basis of design should be established early in the project, even if it contains placeholders, so that the team understands the opportunities and limits of the scope and quality. Both architects and contractors should share and reiterate their assumptions related to the scope systems, materials, and qualities; all of which have procurement, lead-time, and installation implications.

If possible, it is in the best interest of the project, the owner, the architect, and the contractor to be actively involved in the project as ideas are being shaped so that quality, cost, and schedule implications can be understood and iteratively shape the ideas as they are crystallizing, so that decisions are driven toward resolution.

Team Relationships:

The most significant factor affecting success is the collection of personal attitudes brought by individual team members to the project team. Psychologist Bruce Tuckman originated the rubric of how teams Form (define roles), Storm (address inevitable conflicts), Norm (settle differences and collaborate), Perform (operate at peak effectiveness), and Adjourn (how the work concludes and the team reflects)[13], some calling it the *Tuckman Ladder*.[14] Additionally, business gurus, Patrick Lencioni, Steven Covey, and Simon Sinek wrote about the essential nature of developing and guarding trust in the team culture[15, 16] and the relationship between trust and performance.[17]

Because of these and the myriad other available references, we strongly recommend that team leaders "*invest in the team first*." Create and adhere to a partnering statement/team agreement with all principal parties and establish an inter-organizational leadership team of 3-5, who share mutual accountability. This team would be responsible for deep inquiry and advocacy, is collectively responsible for achieving common objectives, and shares rewards and recognitions. Impediments may be loyalty to one's original organization rather than the collective team, or personal ego. Good leaders will establish cultural norms to generate positive results for both, and the leadership team must address these negative behaviors, as they will have detrimental effects on the overall team performance.

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[13] Tuckman, Bruce W (1965). *Developmental sequence in small groups.* Psychological Bulletin. 63 (6): 384–399
[14] Viter, Iryna. *What is the Tuckman Ladder Model? Learn 5 Stages of Team Development.* Project Management Column. https://www.pmcolumn.com/what-is-the-tuckman-ladder/.
[15] Lencioni, Patrick. (2002) *The Five Dysfunctions of a Team.* ISBN: 978-0787960759.
[16] Covey, Steven M. (2008) *The Speed of Trust.* ISBN: 978-1847392718.
[17] Sinek, Simon. (2020) *What Makes the Highest Performing Teams in the World.* https://youtu.be/zP9jpxitfb4.

Professional and college athletic coaches, the military,[18] and Six Sigma advisors all train their teams to focus on the basic things and train for the occasional unexpected complication. They learn to touch the processes as few times as possible and rely on their effectiveness. Gallup has run a continuous study of organizational engagement for many years, which points to team culture as the predictor of focus and performance. They cite that only 23% of employees are connected to their employer's team; 15% are actively disengaged, and the remainder are simply unengaged.[19] Others point to generational differences that exacerbate engagement[20], especially post-pandemic[21]. As an incentive to boost team engagement, some professional organizations offer awards for team performance, such as the Associated General Contractors' (AGC) *Marvin M. Black Excellence in Partnering and Collaboration Award*[22] and the American Society for Healthcare Engineering's (ASHE) *Vista Award*.[23]

Critical issues that leaders will face include:

1. Keep promises, especially related to deadlines and deliverables. Reliability is the bedrock of trust.
2. Clarify responsibilities and authority. The balance of these qualities ensures action.
3. Clarify what gets communicated and to whom. Despite our discussion elsewhere in this framework related to transparency, not all business is everyone's business. Avoid the noise of over-communication.
4. Actively cultivate trust.
5. Assess team performance through formal "conditions of satisfaction" surveys, regularly monitoring team engagement (see below), team health, promises kept, honesty, and progressive improvement, all require attention by the team leaders.
6. Team member attrition. The leaders may not churn as frequently as the team members do. However, when they do, they prioritize collaboration between the leadership team. Team attrition rates are an indicator of overall team cohesion that is only understood after the fact, and this characteristic has negative long-term effects on increased turnover.
7. Search out constructive conflict. Passivity and aggression kill productivity and esprit de corps. However, conflicts will arise and must be resolved directly and honestly. Proactively mining for these conflicts may avoid their amplification later.

[18] McRaven, William. (2018) *Admiral McRaven Leaves the Audience Speechless*. https://youtu.be/TBuIGBCF9jc.
[19] Gallup 2024. (2024) *State of the Global Workplace, the Voice of the World's Employees*. https://www.gallup.com/workplace/349484/state-of-the-global-workplace-2022-report.aspx#ite-506924.
[20] Saraiva, M., & Nogueiro, T. (2025). *Perspectives and Realities of Disengagement Among Younger Generation Y and Z Workers in Contemporary Work Dynamics*. Administrative Sciences, 15(4), 133.
[21] Saleem, A., Humayun, S., & Awan, H. (2024). *Addressing the Global Challenge of Employee Engagement in the Post-Pandemic Multigenerational Workforce*. In Energy Crisis and Its Impact on Global Business (pp. 209-237). IGI Global.
[22] Associated General Contractors. *Marvin M. Black Excellence in Partnering and Collaboration Award*. https://www.agc.org/about-us/awards-recognition-programs/marvin-m-black-partnering-excellence-awards
[23] American Society for Healthcare Engineering. *Vista Award*. https://www.ashe.org/awards/vista

Development & Delivery Process:

The difference between first and second place in Formula One racing is less than a second. This is achieved by studying and refining the operation in planning and performance. Race teams have significantly improved their pit stop times from 67.0 seconds in the 1950s to 1.8 seconds today[24]. They accomplished this by enlarging the teams from four to 21 crew members, each with a specific role, and continuously training these crews[25]. This has led to significantly faster races and better overall performance.

21st-century multi-industrialist, Elon Musk, established and refined his 5-step Algorithm to maintain focus on what was most important and how it might be better refined iteratively. He freely admits to mixing the order with disastrous results. His algorithm is:

1. Question every requirement.
2. Delete anything you can.
3. Simplify and optimize.
4. Accelerate.
5. Automate.[26]

Based on these examples, we also offer the following recommendations:

1. Allow the contractor to actively participate early in the project. This may take the form of allowing the contractor to actively participate in the initial cost modeling to establish and manage the budget, provided the result is durable.
2. Establish reasonable target budgets early in the project, and regularly track their progress, sharing the results with the entire team frequently, to ensure design progression and scope are in alignment with project goals, or conduct mid-course corrections/ approvals when required. The team must be able to rely upon the benchmark targets and budget updates, which should not vary beyond an acceptable range, and only with reasonable explanations and the owner's approval to adjust them.
3. Consider how past comparable projects were executed and their costs, and add inflation at a defendable rate tied to an economic standard, such as the Federal Reserve[27], to the point where the project is completely bought out.
4. Create and maintain a consistent schedule of meetings and deadlines with both the architect and the contractor.
5. Create a framework, a scorecard, or a collection of best practices, and measure the team's performance against them, honestly sharing the results so the team can improve.
6. Own risks appropriately. Phrases like "Verify in field" and "For reference only" may inappropriately shift risk or may be necessary to finalize the design intent related to

[24] *Formula 1 Pit Stops 1950 & Today.* https://www.youtube.com/watch?v=RRy_73ivcms
[25] Martin, Guy. *Guy's F1 Pit Stop Training | Guy Martin Proper.* https://www.youtube.com/watch?v=oWPcA8OSVW4
[26] Haden, Jeff. (2023) *Elon Musk's Algorithm, A 5-Step Process to Dramatically Improve Nearly Everything Is Both Simple and Brilliant.* https://www.inc.com/jeff-haden/elon-musks-algorithm-a-5-step-process-to-dramatically-improve-nearly-everything-is-both-simple-brilliant.html.
[27] FRED, Federal Reserve Bank of St. Louis. (2025) *Producer Price Index by Commodity: Construction (Partial): New Nonresidential Building Construction (WPU801).* https://fred.stlouisfed.org/series/WPU801.

conditions that were previously indeterminable. Be clear about the purpose of what is communicated.

7. Evaluate insurance and bonding instruments and costs based on the project's risks and market conditions.
8. Establish a reasonable frequency and cadence of site visits and clearly define the intent of those visits: general coordination, scope-specific, quality verification, or others, to ensure it is productive. Define the expectations and frequency of the site visits before the architect/owner agreement is finalized, as meetings beyond the contractual scope should be compensable.
9. Ensure that all team members can meet their financial goals, including sub-consultants and sub-contractors.
10. The ripple effects of safety are real and can have legal consequences for the entire team. We recommend all must speak up about unsafe conditions.

Conditions for Collaborative Success

Transparent communication, inclusive engagement, and clearly defined roles ensure that all parties work cohesively, minimizing gaps and conflicts. Proactive risk management, continuous feedback, and the integration of technology further enhance collaboration, enable teams to adapt and improve in real time. By prioritizing mutual success and engaging design teams (Architects of Record and consultants), owners and contractors (Prime, Subs & Suppliers) early in the process, these conditions create a foundation for innovation, efficiency, and long-term partnerships and overall success.

When possible, early and effective collaboration is the cornerstone of successful project delivery. It requires intentional commitment, clear communication, and shared accountability among all stakeholders, starting from the initial stages to completion and delivery. To achieve this, teams must align early on shared values, goals, and expectations, fostering trust and mutual respect throughout the project lifecycle.

The Role of Culture in Successful Collaboration

20th-century management and practice guru, Peter Drucker, is attributed the statement "Culture eats strategy for breakfast." [28] Team culture is a critical factor in fostering successful collaboration, as it shapes the behaviors, attitudes, and interactions of project teams. Culture, built on shared values, is the glue that binds and maintains effective teams together. By cultivating a positive and inclusive culture, teams can overcome challenges, strengthen lasting relationships, and achieve better outcomes, both during the project and in future collaborations. An effective collaborative culture must emphasize trust, mutual respect, and psychological safety, enabling team members

[28] Duffy DW. "What does culture eats strategy for breakfast mean?" Corporate Governance Institute. https://www.thecorporategovernanceinstitute.com/insights/lexicon/what-does-culture-eats-strategy-for-breakfast-mean/.

to voice concerns, share ideas, and address challenges constructively. Aspects of culture that contribute to collaboration include:

1. **Shared Values**: Establish common goals and principles that align all stakeholders, foster unity, and a sense of purpose.
2. **Open Communication**: Communicate transparently and proactively to reduce ambiguity, build trust, and ensure alignment across teams.
3. **Inclusivity**: Encourage diverse perspectives and inclusive engagement to enhance innovation and responsiveness to project needs.
4. **Accountability**: Share responsibility for the project outcome across all professional domains to ensure that all parties are committed to achieving mutual success.
5. **Continuous Improvement**: Embrace feedback and learning to create a foundation for continuous team development and strengthening partnerships.
6. **Leadership Modeling**: Exemplify vulnerability, transparency, and support to develop collaborative behaviors among the team.

Planning, Design, & Preconstruction – The Foundation for Successful Collaboration

Early and active cultural alignment and active participation of all parties contribute to a solid foundation for successful collaboration. Deliberately inviting other team members into their historical domains can establish shared values, goals, and expectations, which can lay the groundwork for effective collaboration, ensuring alignment, building trust, and proactively solving problems before the project begins. Effective Pre-Construction methods include:

1. **Early Alignment Meetings**: Conduct pre-design alignment sessions involving owners, architects, contractors, and other key stakeholders to establish shared goals, values, and expectations.
2. **Project Charter Development**: Create a structured project charter or partnering agreement that defines collaboration expectations, shared goals, and conditions of

satisfaction. Examples include the International Partnering Institute (IPI)[29] and the Institute of Project Management (IPM).[30]

3. **Role and Responsibility Clarity**: Develop a responsibility matrix (e.g., RACI chart) to map key deliverables, decisions, and coordination expectations, ensuring clarity from the outset.
4. **Risk-Identification Workshops**: Host cross-disciplinary workshops to identify potential risks early, document them in a commonly accessible manner, and develop mitigation strategies collaboratively.
5. **Communication Protocols**: Define communication norms, meeting cadences, escalation paths, and decision timelines during a formal kickoff meeting.
6. **Technology Integration**: Select and implement shared digital collaboration tools (e.g., BIM, cloud platforms) to streamline coordination and ensure real-time access to project information. Establish data-organization norms (e.g., BIM families, file and directory structures, common nomenclatures, etc.)
7. **Contractor Involvement**: Engage contractors, sub-contractors, and suppliers earlier than their need to supply materials and labor to set and confirm expectations, and provide input on constructability, logistics, market conditions, and sequencing, aligning design intent with practical execution.
8. **Procurement Planning**: Collaboratively plan procurement strategies for materials, labor, equipment, etc. Identify long-lead items and establish tracking systems to mitigate risks associated with delays and to ensure asset readiness at the appropriate time of the project.
9. **Inclusive Engagement**: Intentionally solicit diverse perspectives from junior staff and field personnel during design and preconstruction discussions to foster innovation and shared ownership.
10. **Structured Kickoff Events**: Host comprehensive kickoff events to introduce team members, define collaboration norms, and establish a shared vision for project success.

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[29] International Partnering Institute (2017). *IPI Vertical Construction Project Partnering Scalability Matrix*. https://cdn.wildapricot.com/450532/resources/Documents/IPI-Vertical-Scalability-Matrix-2017.pdf?version=1697133520000&Policy=eyJTdGF0ZW1lbnQiOiBbeyJSZXNvdXJjZSI6Imh0dHBzOi8vY2RuLndpbGRhcHJpY290LmNvbS80NTA1MzIvcmVzb3VyY2VzL0RvY3VtZW50cy9JUEktVmVydGljYWwtU2NhbGFiaWxpdHktTWF0cml4LTIwMTcucGRmP3ZlcnNpb249MTY5NzEzMzUyMDAwMCIsIkNvbmRpdGlvbiI6eyJEYXRlTGVzc1RoYW4iOnsiQVdTOkVwb2NoVGltZSI6MTc2MzI1NzYzNX0sIklwQWRkcmVzcyI6eyJBV1M6U291cmNlSXAiOiIwLjAuMC4wLzAifX19XX0_&Signature=Y-yo9mI-T2~Il0NwNZJQIvPEkK4rVm1YDoimIbyvlMQQvcPjZsXfsGo0mQGig14UBBvCq3YEVNYhW7CA2lLWqdEU8nBeSPShLstrf0V3gTyPka-fZm9XKYFuWpdKIav-HyjI9i4EteZ2GG5jx1tBDqyZ2QEbhi3Ty-Re8815z88CksZe5hJivUsRvMG42hxUqU2kXJn3OLA10SMUnE0L01dz1l3XkYYk64Q0yKdfpvGoho9FUmTjuL8zej-1lBV0xaKNLLBgQaTadaN~SWeEzJWk1NAnaf4V6QkWJOpC2a-wL4f9bMwyrHZol8HJFIXcwI2TkaeLDtpbFd~Fe4PFw__&Key-Pair-Id=K27MGQSHTHAGGF.

[30] Institute of Project Management. (2022). *Project Charter: Guide with Template and Examples*. https://instituteprojectmanagement.com/blog/successful-project-manager-iii-the-project-charter-and-its-creation/.

Successful collaboration requires intentional effort [31] [32] to create conditions that foster trust, alignment, and shared accountability. By prioritizing clear communication, inclusive practices, and, when possible, early engagement, teams can build a foundation that supports mutual respect and proactive problem-solving.

Collaboration thrives [33] when roles are clearly defined, risks are addressed early, and technology is leveraged to streamline coordination. A culture of openness, psychological safety, and continuous improvement ensures that challenges are met with solutions, not blame.

Collaboration is an investment in the success of the project, the relationships between stakeholders, and the long-term growth of the industry. When teams commit to these principles, they unlock the potential for innovation, efficiency, and synergistic achievement.

Risk Management

Effects of Risk in Collaboration

Planning, design, and construction projects carry myriad risks for all participants. Some risks are unique to specific professional disciplines, while others may be shared or even oppose one another. Therefore, managing all risks shapes the dynamics and outcomes. Effective risk management fosters trust, transparency, and predictability, while unmanaged risks can lead to delays, cost overruns, strained relationships, or even legal actions.

We propose executing five key strategies to manage these risks and improve collaboration:

Early Risk Identification and Mitigation

Proactively identifying risks and developing ways to manage them early in a project can minimize disruptions, unplanned costs, and delays. This allows teams to allocate resources effectively and plan for allowances and contingencies. These actions also build shared awareness among architects, contractors, and owners, fostering alignment and reducing uncertainty.

1. **Owner Input:** Include the owner in appropriate discussions related to risk and its management.
2. **Risk Workshops:** Host cross-disciplinary risk workshops during early project phases to identify and address potential risks and project ambiguities.

[31] Hüffmeier, J., Dietrich, H., & Hertel, G. (2013). *Effort Intentions in Teams: Effects of Task Type and Teammate Performance.* Group & Organization Management, 38(1), 110–138. https://doi.org/10.1177/10596011241235221
[32] American Institute of Architects. (2023). *Integrated Project Delivery: A Guide*. https://www.aia.org/resource-center/integrated-project-delivery-guide
[33] J. Ramon Gil-Garcia, Ahmet Guler, Theresa A. Pardo, G. Brian Burke, *Characterizing the importance of clarity of roles and responsibilities in government inter-organizational collaboration and information sharing initiatives*, Government Information Quarterly, Volume 36, Issue 4, 2019, 101393, ISSN 0740-624X, https://doi.org/10.1016/j.giq.2019.101393.

3. **Risk Register:** Maintain a shared risk register [34, 35] that documents impact, likelihood, ownership, and mitigation strategies to identify, assess, and manage risks throughout the project – ideally during all phases of the project, understanding that it's not always possible during early phases.
4. **Risk Reviews:** Integrate risk reviews into milestone check-ins to ensure strategies evolve with the project.
5. **Expectation Alignment:** Include owner participation in risk planning to align expectations.

Without structured processes, risks may be overlooked, leading to reactive management and strained relationships.

Clearly Defined Roles in Risk Ownership

Ambiguity in risk ownership can lead to finger-pointing, delays, and inefficiencies. Clearly defined leaders and roles support accountability and encourage proactive management, especially in areas like permitting delays, site logistics, sequencing, cost escalation, and/or market volatility.

1. **Responsibility Matrix:** Develop a risk responsibility matrix that assigns ownership and responsibility to specific team members across all teams.
2. **Contractual Alignment:** Align risk roles with contractual obligations to avoid conflicts.
3. **Re-clarify Roles:** Revisit role clarity at key project transitions (e.g., design development to construction documentation).
4. **Establish Communication Protocols:** Encourage early notification as new risks emerge, and escalation when appropriate.

Misaligned responsibilities or unclear contractual obligations can hinder effective risk management. Shared responsibility without role leadership or lack of clarity about the resolution can result in no responsibility, leaving risks unaddressed.

Structured Change Management Processes

Project changes are inevitable. However, unmanaged changes can erode trust, create confusion, and disrupt cost and schedule predictability. A structured change management process ensures transparency and alignment among all stakeholders, regardless of the project phase.

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[34] Harper B, et al. (2015). *Decision Management Plans and Risk Registers, Tools to Understand and Communicate Risk & Uncertainty.* National Planning Community of Practice Training. U.S. Army Corps of Engineers. https://planning.erdc.dren.mil/toolbox/library/PCoP/S2_DMP%20and%20Risk%20Register_HarperNicholsonZaborowskiFuentes.pdf.

[35] Yoe C. (2017). *Planning Manual Part II: Risk-Informed Planning : Notre Dame of Maryland University.* US Army Corps of Engineers, Institute for Water Resources. p. 7. https://planning.erdc.dren.mil/toolbox/library/Guidance/PlanningManualPartII_IWR2017R03.pdf.

1. **Change Management Processes:** Establish a unified change-management process early, outlining documentation standards, approval steps, and thresholds. This should stretch from early planning and programming decisions through to construction changes.
2. **On-going Education:** Educate team members in the process, including who is authorized to initiate or approve changes, and how the changes are disseminated across the team.
3. **Track Changes:** Track all changes—approved, pending, and rejected—through a centralized log accessible to both design and construction teams.
4. **Continuous Improvement:** Understand the reasons for changes and use them as opportunities to assess their root causes or specific requests and refine the team's coordination practices.

Real-Time Risk Tracking and Resolution

Continuous monitoring of and discussions about risks ensures timely responses and adjustments, which may reduce the likelihood of uncontrolled outcomes and foster a "no surprises" culture. Real-time tracking promotes transparency and accountability across project teams.

1. **Dashboards:** Use shared digital tools, dashboards, or other platforms to track risk status, mitigation progress, and emerging concerns.
2. **Meeting Agenda**: Include risk updates as standing agenda items in team meetings.
3. **Continuous Learning:** Conduct interim lessons-learned sessions focused on risk management practices, resolution, and continuous improvement.
4. **Early Disclosure:** Encourage early disclosure of problems to build trust and collaboration.

Collaborative Risk Management Culture

A collaborative approach to risk management strengthens trust and improves team dynamics. It encourages mutual problem-solving rather than blame assignment, fostering a culture of accountability and shared success.

1. **Risk Resolution:** Facilitate joint risk-resolution meetings to collaboratively address disputes or challenges.
2. **Mutual Solutions:** Focus on mutual solutions rather than assigning blame.
3. **Team Building:** Integrate risk management into team-building activities to reinforce shared goals.
4. **No Surprises:** Promote a "no surprises" culture by encouraging proactive communication and a pre-determined formal mechanism to escalate conflicts to appropriate project leaders.

A team's cultural differences or lack of buy-in from all stakeholders can undermine collaboration efforts. Teams may resist adopting collaborative practices if they are unfamiliar, not incentivized, or not supported by leadership.

Risk management is integral to successful collaboration. Early identification, clear ownership, structured change processes, and real-time tracking mitigate risks and enhance project outcomes. However, challenges such as misaligned responsibilities, resistance to change from past practices, and fragmented communication must be addressed to ensure success. By fostering a collaborative risk management culture, teams can build trust, improve efficiency, and achieve shared goals.

Measurable Outcomes

Collaborative success requires the establishment of objectives that are both tangible and measurable. Abstract or intangible goals generally lack the clarity required for systematic evaluation and improvement. British mathematician and engineer, Lord Kelvin, famously stated:

> *"When you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely, in your thoughts, advanced to the stage of science, whatever the matter may be."* [36]

In simple terms, he was the first to emphasize the importance of measurement in understanding and improving things. In other words, "If you cannot measure it, you cannot improve it."

Collaborative success demands structured processes, shared metrics, and a continuous improvement cycle. This cycle is commonly referred to as a Deming Cycle, also known as the PDCA (Plan-Do-Check-Act) or PDSA (Plan-Do-Study-Act) processes. [2]

Effective teams emphasize accountability, transparency, and proactive adjustments to ensure continuous improvement and successful collaboration. Methods to achieve this include:

1. **Shared Performance Metrics:** Define and track Key Performance Indicators (KPIs) collaboratively, such as community impact, schedule adherence, quality, sustainability, and team-based metrics. Use shared dashboards or scorecards for transparency.
2. **Collaborative Workshops:** Schedule improvement workshops at regular intervals during and at a project's completion to refine practices and enhance team performance.

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[36] Thompson W. (1889) *Electrical Units of Measurement.* Institution of Civil Engineers. 3 May 1883. Cambridge University Press, Popular Lectures and Addresses Collection. https://www.cambridge.org/core/books/abs/popular-lectures-and-addresses/electrical-units-of-measurement/621B298BAD428F96B446A17CC2FACF4F.

[2] The W. Edwards Deming Institute. https://deming.org/explore/pdsa/

3. **Continuous Feedback:** Incorporate regular feedback during the project to address challenges and improve team dynamics in real time.
4. **Transparent Tracking:** Use shared tools to monitor changes, project decisions, and cost drivers, ensuring alignment and avoiding surprises.
5. **Relationship Check-Ins:** Conduct regular team check-ins to assess morale, communication, and trust, fostering a culture of constructive collaboration.
6. **Post-Project Evaluations:** Conduct formal reviews involving architects, contractors, and owners to assess collaboration outcomes, identify lessons learned, and measure success against established objectives at regular macro-intervals, such as the completion of a phase or the entire project.
7. **Lessons-Learned Database:** Maintain a centralized repository of insights categorized by project phase, delivery method, and discipline to inform future projects.

Shared Performance Metrics

Project teams should effectively communicate the organization's broader goals in order to align their efforts to achieve them. Shared performance metrics need to focus on what matters most to all parties involved. Success for most teams is built on five key pillars:

1. **Financial Outcomes:** Financial pressure can significantly hinder collaboration in construction projects by creating misaligned priorities, strained relationships, and reduced transparency among stakeholders. Win/win relationships build collaboration, trust, and efficiency—key elements for delivering a project on time, within scope, and to expected standards. Ensure profitability for all parties, including sub-consultants and subcontractors.
2. **Quality of work:** Low quality undermines collaboration by introducing rework, delays, and disputes that strain relationships among stakeholders. These may include inadequately communicating the project scope or reasonable placeholders during planning, not discussing the ranges of design systems and materials under consideration, or poor installation during construction. When quality issues arise, trust erodes as parties begin to question each other's competence and reliability. Low quality by any team member often results in cost overruns and schedule disruptions, which intensify financial pressures and further reduce the willingness to cooperate. Delivering projects of expected/elevated levels of quality ensures satisfaction/fulfillment.
3. **Safety:** While more specific to construction operations, a strong safety culture helps maintain steady progress, reduces unexpected costs, and supports overall project efficiency and profitability. Safety incidents may often lead to blame-shifting, legal scrutiny, and defensive behavior, which hinder open dialogue and teamwork. These tensions can delay decision-making, reduce transparency, and shift focus from shared project goals to risk avoidance, ultimately weakening the cooperative environment essential for successful project delivery. Safety is everyone's responsibility.

4. **Schedule Compliance:** Meeting task-delivery timelines fosters trust, accountability, and smooth coordination. Each party can plan resources, manage dependencies, and communicate effectively. However, slipped schedules often lead to tension, blame-shifting, and reactive decision-making, and their effects often cascade into later phases. These disruptions weaken collaboration, reduce transparency, and shift focus from shared goals to damage control—ultimately compromising project success.
5. **Team Satisfaction:** When a win/win attitude is adopted, team satisfaction can be expected to significantly enhance collaboration among all parties involved, not just owners, designers, and contractors. This approach fosters mutual respect, shared goals, and equitable outcomes, which build trust and encourage open communication. As each party feels valued and fairly treated, they are more likely to cooperate, resolve conflicts constructively, and contribute proactively to project success. High team satisfaction reduces friction, reduces attrition, improves morale, and strengthens the collaborative environment, which is essential for improving the likelihood of delivering quality results on time and within budget.

Conclusion

Conclusion:

Successful collaboration in design and construction projects is not a matter of chance; it is the result of deliberate strategies, shared values, and proactive engagement. By fostering transparency, clarifying roles, managing risks collaboratively, and leveraging technology, teams can transform potential conflicts into opportunities for innovation and efficiency. A culture rooted in trust, accountability, and continuous improvement ensures that all stakeholders—owners, architects, and contractors—work toward mutual success rather than isolated objectives. Ultimately, when collaboration is treated as an investment rather than an obligation, projects achieve higher quality, reduced risk, and stronger relationships that endure beyond a single engagement.

Credits

Mission: The AIA-AGC Joint Committee supports a performance-driven approach to the creation of a collaborative built environment, inclusive of individuals from all walks of life, that provides optimal outcomes.

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