

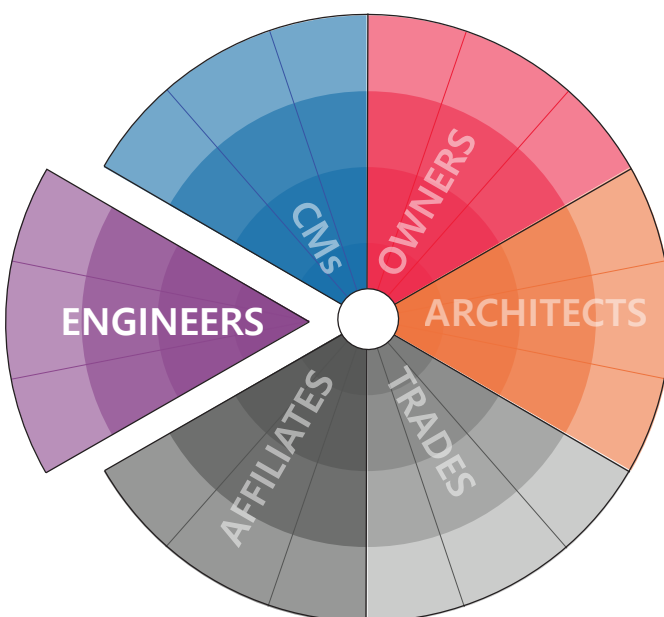
6 DEGREES OF DESIGN & CONSTRUCTION RISK

What are the GREATEST RISKS that ENGINEERS face on EVERY design & construction project?

The COGENCE Alliance recently asked a collective group of Owners, Affiliates, CM's, Trades, Engineers, and Architects what are the greatest risks to every design and construction project. We're now answering that question by way of an 8-part series of posts, which began with an [aggregated "Top 10" list](#), followed by the Top 10 Risks as determined by the [OWNERS](#), [AFFILIATES](#), [CM's](#), and [TRADES](#).

This week we're pleased to share the risks and potential solutions, as determined by **ENGINEERS**. In two weeks, we will release the risks and solutions particular to Architects. The series will conclude with an analysis of the lessons learned and how to use this critically important data.

Join the conversation - join the movement - join the [COGENCE Alliance](#).



ENGINEERS

COMMUNICATION

CHANGES

CONTRACTS

SCHEDULE

BUDGET

QUALITY

LEADERSHIP

DUE DILIGENCE

TEAM MEMBERS

FINANCIAL

ENGINEERS' RISKS

1. COMMUNICATION

RISK: Failure to document communications consistently and effectively.

RISK: Unclear, late, or conflicting directions from other team members.

RISK: Team members are disengaged from the process, which leads to re-design, incomplete design, or falling short of expectations.

SOLUTION: Take the time to provide clarity by taking and issuing concise meeting minutes - with action items and decisions clearly documented.

SOLUTION: Start with a kick-off meeting including all team members, to define and outline expectations. This meeting should include a review of the contracts and a discussion of risks from all parties' perspectives.

SOLUTION: Create a communication protocol and establish future meeting cadence.

2. CHANGES

RISK: Understanding the impact of changes across all team members and trades, as well as how late timing of those changes can impact the design team, causing redesign.

SOLUTION: Bring the entire team into the process early and allow enough time in the schedule to properly set up a project so that the team understands the Owner's goals, budget, and schedule.

SOLUTION: Allow the design process to occur. This reduces the need for changes.

3. CONTRACTS

RISK: Contracts contain un-insurable risk and/or an imbalance of risk on the design professional (e.g. extreme indemnification)

RISK: Scope that isn't detailed and/or properly defined.

RISK: Engineer is not aware of relevant contract terms with other team members.

SOLUTION: Engage legal counsel who understands the construction industry and utilize reasonable, industry-standard contracts.

SOLUTION: Transparently communicate to educate team members.

SOLUTION: Own risks that are reasonably yours to have.

SOLUTION: Educate the owner on the definition of "betterment," as owners should pay fair value for benefits received.

4. SCHEDULE

RISK: Compressed schedules leading to incomplete/rushed design.

RISK: Not allowing enough time to properly set up a project and allowing the full design process.

SOLUTION: Communicate with the Owner the importance of an adequate schedule and the risks attendant to the absence of an adequate schedule.

SOLUTION: Incorporate provisions in contracts to cover the risk if the schedule is inadequate.

5. BUDGET

RISK: Lack of transparency from the owner, leading to re-design late in the process.

SOLUTION: Effective communication - be transparent with the owners about realistic budgets and be empowered to inform the owner when expectations and budget are not aligned.

SOLUTION: Have processes in place (like page-turns) to make sure the owner is getting what is expected.

6. QUALITY

RISK: Lack of consistent understanding of the level of completeness of documents for pricing and/or estimates.

RISK: Value engineering late in the design process, which leads to coordination risk between the specs and documents, and tension between team members.

SOLUTION: Have processes in place (like page-turns) to make sure the owner gets what is expected.

SOLUTION: Bring the CM on board early to the project team to advise on costs, constructibility and market conditions to avoid Value Engineering later in the process.

7. LEADERSHIP

RISK: Unclear roles for the design team and contractors.

RISK: Leadership is involved in the project early, but involvement declines as the project proceeds.

RISK: Bringing team members into the process late, when it is often too late to affect the outcome.

SOLUTION: Establish a governance process and problem escalation process.

SOLUTION: Prepare a project charter, customer service performance agreement, and set

expectations within that charter (and be willing to pay for that level of service).

SOLUTION: Have weekly OECM meetings.

SOLUTION: Principals in Charge and/or Senior Personnel remain part of the process as the project progresses - not showing up when there is a problem.

8. DUE DILIGENCE

RISK: Not recognizing clients who have a "commodity mindset," and/or who do not value expertise and quality service, and/or who are not willing to pay for value.

RISK: Competing against other firms of lower or different skill, at a lower cost.

RISK: Relying on other team members to conduct due diligence.

SOLUTION: Perform due diligence as a team.

SOLUTION: Confirm that due diligence has been done as part of the kick-off process, to identify outstanding risks as a group and to plan for mitigating those risks.

9. TEAM MEMBERS

RISK: Staff that is not properly trained or too "green" for the position they are in.

SOLUTION: Set up internal training programs and invest in outside training.

SOLUTION: Make sure a senior manager is involved in the project at an appropriate level.

10. DUE DILIGENCE

RISK: Payment Terms change or are too long.

RISK: Not getting paid unless/until the architect gets paid.

SOLUTION: Be up-front about expectations and include payment terms in the contract.

COMMONALITIES

Like many of our other partners, Engineers find value in communication in mitigating risk. Communication internally and between team members helps to ensure a more effective team. In addition to communication, Engineers found that bringing the team together early can help build relationships, foster the free flow of information, promptly address outstanding issues, and generally understand the other team members' perspectives.

Join the conversation - join the movement - join the [COGENCE Alliance](#).

The COGENCE Alliance exists to transform the design and construction industry to be more collaborative, with reduced risk and improved outcomes for all projects. www.cogence.org