

# Foundations for Risk Management

$$\text{Success} = \sum F_{\text{RM}}$$

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## Culture

Prevention and Proactivity

Planning

Communication

Education

Scope

Compensation

Contracts

Contract Documents

Construction Phase

Structural engineers have the highest claims-to-revenue ratio among practitioners in the Architectural-Engineering (A/E) field. They do not necessarily have more claims made against them, but the claims are higher than for other types of engineers or for architects.

The Council of American Structural Engineers (CASE) wants to change that reality with a view toward lowering insurance premiums and improving the reputation of structural engineers. To achieve these goals, a special committee of CASE, the Risk Management Program, has been formed to help structural engineering firms reduce the number and amount of claims made against them. The committee's activities began with an exciting convocation held in Reston, VA last November. The committee is dedicated to delivering content throughout the year that will help firms mitigate the risks they now confront.

The Foundations for Risk Management presented herein will be the basis for the tools that the committee will deliver at the upcoming convocation planned for November 4<sup>th</sup> and 5<sup>th</sup> in Dallas, TX. These Foundations were developed by engineers in private practice to help engineering firms focus their practice on avoiding and minimizing risk.

The first five Foundations deal with the process of the engineering business, and the last five deal with project management.

## Culture

**Create a culture of managing risk and preventing claims...** Instill in your company an overriding vision that stresses quality control and risk management. This vision must become a core value of the firm and come from the top down. Stress the importance of risk management as often as possible among the staff, as well as the consequences of ignoring it. Creating this culture requires both strategic and operational planning. It should involve all levels of the staff and even involve clients. Quality must take precedence over profits. When quality is established, profits tend to follow.

## Prevention and Proactivity

**Act with preventive techniques. Don't just react...** Develop processes and systems within the firm, with risk prevention in mind. Early planning can identify potential sources of risk, and early intervention can mitigate the severity of claims or eliminate them altogether.

Clearly, some events happen without warning. Although we cannot plan for the specifics of each case, identifying where risks may occur can enable you to deal with unforeseen events. Having a plan in place allows quick action to minimize the damage these events may cause.

## Planning

**Plan to be claims free...** Claims-free results do not happen by chance; they require proper planning. Strategic planning means considering how items such as staff hiring and retention, client selection, project type selection, training programs and quality assurance programs can all contribute to reducing claims. Project planning is also an important aspect of risk management by focusing on information flow, communication pathways, contract negotiations, and scope definition.

To be effective, a plan should be simple, workable, and readily communicable. Communicating the plan to all involved parties, reinforcing the need to adhere to it, and monitoring activities to see if it is being followed are all important steps to having an effective, claims-free practice.

## Communication

**Communicate to match expectations with perceptions...** It is well documented that communication issues represent a large percentage of the basis for claims against engineers. All parties in a project need to communicate their expectations and perceptions early on, so steps can be taken to resolve any differences. To be effective, communication must flow both up and down the chain of command, so that all parties are informed.

Good planning leads to good communication. Develop tools to aid the communication process such as correspondence logs, telephone conversation logs, and e-mail protocol.

Communication must be handled professionally and courteously. When dealing with a contentious issue, do not send a letter or e-mail immediately after composing it. Take time and then reread the communication before sending it. And communicate only the facts of the case and avoid emotional outbursts or statements of opinion to avoid making problems worse.

## Education

**Educate all of the players...** Proper training is the basis for proper results. The negotiating, communicating, and planning skills that experienced engineers have are all factors that can aid in managing risk. It is their duty to pass this wisdom on to both staff and clients. A mentoring process enables less experienced staff members to become more effective in their careers and risk management. And, owners unfamiliar with the design and construction process also need to be educated, so expectations about the nature of professional services and the proper allocation of risk can be cast.

## Scope

**Develop and manage a clearly defined scope of services...** A well written scope of work serves several purposes. First, misunderstandings are avoided by clearly defining all parties' responsibilities and timeframes. Second, the basis for negotiations regarding compensation is established. Third, the line that forms



the basis for additional services is drawn. Last, it serves as a starting point for preparing a work plan.

Communicate the agreed-upon services to the entire staff so they can recognize when a request goes beyond the contracted scope, and they do not extend obligations. If they begin to perform services that are not within the original scope — without first receiving an agreement for extra compensation — it will be very difficult, after the fact, to explain that those services were not in the original scope.

On site visits — be especially careful that the engineer's actions do not extend the firm's obligations to include responsibility for job-site safety or directing the work of the contractor. Extending the scope increases the amount of risk, without appropriate compensation.

## Compensation

**Prepare and negotiate fees that allow for quality and profit...** Whether effort-based or value-based criteria are used for establishing fees, keep in mind that sufficient fees will allow for sufficient time to prepare quality work. Negotiate the compensation, along with a scope of services, so the owner knows exactly what is included in the fee. By being clear with the client regarding the basis of the fee proposal, a basis for the amount of contingency can be established and arguments over extra service requests will be avoided later.

Be ready to walk away from a client with whom you have historically lost money, or from a project type that poses too much risk.

## Contracts

**Negotiate clear and fair agreements...** A contract that is fair to all parties can minimize risk, and a poorly worded contract can greatly increase risk. Review each contract or obtain legal aid to detect risk-enhancing language. A good approach is to use contracts that have been prepared by organizations representing designers, such as the CASE contracts, as a starting point for negotiations.

Always be sure that the terms of the con-

tract are insurable under the firm's professional liability insurance. For example, most insurance policies do not provide for the defense of an indemnitee, even though that term is often found in indemnity agreements. A good contract will recognize that professional services are being provided — not a product — and therefore perfection cannot be warranted by the service provider. The principle that "risk should be fairly proportioned to the parties based on the benefit that each party is receiving" is the foundation for a good contract. On that basis, the engineer should be held responsible for his own negligence, but not for the errors of other parties.

## Contract Documents

### Produce quality contract documents...

For most engineering work, the final deliverable is the document that will direct the project's construction. The first step in producing quality documents is to plan the work required in conjunction with the engineering and CAD technician staff. Then, distribute the client-approved design criteria to everyone involved in the documents' production. The more complex the design, the higher the risk involved in design and documentation. Engage the client in a discussion about simplifying the design or providing the engineer with a higher compensation to account for such complexity, if necessary.

There are several suggestions to improve the documentation quality. One of the best tools to help produce quality documents in a shorter time frame is computer-aided design and drafting software, greatly increasing productivity and quality. Prepare job specifications during the design development phase, to ensure the specifications and drawings are coordinated. Take advantage of repetition in design elements, and use the knowledge of more experienced staff members to avoid spending wasted time "re-inventing the wheel."

## Construction Phase

### Provide services to complete the risk management process...

The final phase of a project, the construction phase, is the time when many claims against the engineer arise. This is not the time to let down your guard in protecting against risk.

In this phase, there can be a lot of interaction between the construction contractor and the engineer. There are submittals to be checked, requests for information to be answered, change orders to be evaluated, and site visits to be made. Each of these tasks should be performed quickly and efficiently so as to

eliminate the engineer as the reason for a delay. Keep good records of the information flow between the contractor and the design team, and establish a non-adversarial relationship with the project superintendent so that you can work together as partners to achieve a common goal.

Site visits can increase the firm's liability if one's actions are not circumspect. Train your staff in the proper way to conduct site visits, how to document them, and how to deal with out-of-conformance work. Staff should avoid making statements in the field that can be construed as directing the work of the contractor or directing the safety program of the job site. Know the scope of your site visits as defined in your contract. Are you providing periodic site visits to "endeavor to guard the owner against defects in the work," or are you there to provide special inspection services as prescribed by the building code? Do not extend your services outside of your contracted work.

Other construction administration tasks are shop-drawing checking and answering information requests. Engineers should know the purpose behind checking the shop drawings. And they should not be used to convey design changes. Be aware of the various reasons contractors ask for information. Some may increase the engineer's liability.

## Conclusion

As implied in the title, *Foundations for Risk Management*, the issues raised in this paper should serve as a starting point for all engineers in dealing with the issue of risk and how to avoid or mitigate it. By focusing on the suggestions made in each of the 10 areas of practice that are discussed, it is hoped that the engineering community can reach success as defined by the goal of zero liability claims.

Begin laying your foundation for risk management by analyzing your current practices. Plan to attend the Risk Management Program's Convocation to be held in Dallas on November 4<sup>th</sup> and 5<sup>th</sup>, 2005. Apply these foundations and the skills that will be presented in the Convocation, and enjoy the benefits of a higher quality and lower risk design practice. ■

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