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FOUNDATIONS  
for RISK MANAGEMENT

Success =  $\Sigma F_{RM}$

## Culture:

*Create a Culture for Managing Risks & Preventing Claims*

# Foundations for Risk Management

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Structural engineers have the highest claims-to-revenue ratio among practitioners in the Architectural-Engineering (A/E) field. Structural engineers do not necessarily have more claims made against them. Rather, these claims tend to be higher per claim than claims for other types of engineers or 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. In order 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 first effort of this committee was an exciting convocation held in Reston, VA last November. The committee is hard at work planning a second convocation this year which will be held on November 4 and 5 in Dallas, TX. The committee is also 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 and other content that the Risk Management Program committee will deliver at the upcoming convocation. 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.

## **1. Culture**

### *Create a culture of managing risk and preventing claims*

Creating a culture of risk management and claims prevention entails instilling in your company an overriding vision that stresses quality control and managing risk as a vital part of your business practice. 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.

## **2. Prevention and Proactivity**

### *Act with preventive techniques, not just react*

Develop processes and systems within the firm with risk prevention in mind. Often, early planning can identify potential sources of risk, and early intervention can mitigate the severity of claims. When risk is identified, a proactive plan can be developed to change the conditions that lead to that risk or avoid the risk altogether.

Clearly, some events happen without warning and we must react. Although we cannot plan for the specifics of each case, identifying where risks may arise and establishing priorities before hand provide the proper framework with which to deal with unforeseen events. Having a plan allows quick action to minimize the damage these events may cause. An example of this would be having a plan in place to deal with an owner who wants to drive down your fee by asking to eliminate construction phase services. Do you have a plan that will allow you to promptly respond to such a request in a way that minimizes your risk?

## **3. Planning**

### *Plan to be claims free*

Closely related to the Foundation of Prevention and Proactivity is the attribute of planning. Claims-free results do not happen by chance; they require proper planning. Strategic planning means taking into consideration 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. A project work plan can help focus on areas that reduce risk such as information flow, communication pathways, contract negotiations, and scope definition.

For a plan to be effective, it 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.

## **4. 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. When all parties in a project communicate their expectations and perceptions early and

often, the “disconnects” between opposing parties can be readily established. Steps can then be taken to resolve those differences and align everyone’s expectations and perceptions. To be effective, communication must flow both up and down the chain of command so that all parties are informed.

Good planning will lead to good communication. All parties should agree on acceptable means and lines of communication early in the process. Develop tools to aid the communication process such as correspondence logs, telephone conversation logs, and e-mail protocol.

Communication must be handled in a professional and courteous manner. When dealing with a contentious issue, it is not a good practice to send a letter or e-mail immediately after composing it. Take time and then re-read the communication before sending it. Communicating only the facts of the case and avoiding emotional outbursts or statements of opinion can help to avoid problems or making problems worse.

## **5. Education**

### *Educate all of the players*

Proper training is the basis for expecting proper results in any field. Engineers that have a greater amount of experience have a duty to pass their wisdom on to both staff and clients. As professionals, engineers possess a unique body of knowledge that our clients rely on to accomplish their goals. Creating a formal mentoring process helps less-experienced staff members become more effective in their careers.

The skills that experienced engineering professionals gain during their careers relating to business practices such as negotiating, communicating, and planning are all factors that can aid in managing risk. Those skills must be passed down to less-experienced employees so that everyone can effectively participate in risk management. Owners who are unfamiliar with the design and construction process also need to be educated so that expectations about the nature of professional services and the proper allocation of risk can be cast.

## **6. Scope**

### *Develop and manage a clearly defined scope of services*

A well-defined and written scope of work serves several purposes. First, it helps avoid misunderstandings by clearly defining which parties will be responsible for completing which task and when those tasks will be completed. Second, it establishes the basis for negotiations regarding compensation. Third, it draws the line that forms the basis for additional services. Last, it serves as a starting point for preparing a work plan.

Communicate the agreed-upon services to the entire staff so that they can recognize when a request for services goes beyond the contracted scope. Obligations can be extended simply by the actions of employees. 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.

Be especially careful while making site visits 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 simply increases the amount of risk one is taking without appropriate compensation.

## **7. Compensation**

### *Prepare and negotiate fees that allow for quality and profit*

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

When negotiating fees, have in mind a number below which the firm will not take the project. 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 compared to the reward being offered.

## **8. Contracts**

### *Negotiate clear and fair agreements*

A good contract that is fair to all parties can minimize the risk that an engineer faces during the course of a project. On the other hand, a poorly worded contract can greatly increase that risk. Review each contract or obtain legal aid to detect and delete or modify 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 contract 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 what forms the basis for a good contract. On that basis, the engineer should be held responsible for his own negligent errors or omissions, but not for the errors of other parties.

## **9. Contract Documents**

### *Produce quality contract documents*

For most engineering work, the final deliverable is the document that will direct the construction of the project. The first step to produce quality documents is to have a plan to do so. Plan the work effort required in conjunction with the engineering and CAD technician staff. Have the client approve the written design criteria and then widely distributed it to everyone involved in the documents' production. The more complex the design, the higher the risk involved in design and documentation. Make the client aware of this and engage the client in a discussion about simplifying the design or providing the engineer with a higher compensation to account for such complexity.

There are several suggestions to help improve the documentation quality. One of the best tools to help produce quality documents in a shorter time frame is the computer-aided design and drafting software that has become available in the past few years. It has greatly increased productivity and quality. Take advantage of it. Prepare job specifications during the design development phase in order 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.”

## **10. Construction Phase**

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

The final phase of a project, the construction phase, is also the time when many claims against the engineer arise. This is certainly not the time to let down your guard in protecting against risk. There are various tasks associated with the construction phase wherein the contractor responsible for construction and the engineer interact. 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 in a timely and efficient manner so as to eliminate the engineer as the reason for a delay. A good practice to diffuse a claim of delay is to keep good records of the information flow between the contractor and the design team. Establish a non-adversarial relationship with the project superintendent so that you can work together as partners to achieve a common goal.

Site visits represent a unique challenge to risk management because they can increase the firm’s liability if one’s actions are not circumspect. Train your staff in the proper way to conduct site visits and how to document them. Training is also necessary to know 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. Be aware of 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 the work for which you have been contracted.

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

## **Ten Foundations for Risk Management – A 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 and 5, 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.