
 <p>The cornerstone of confidence™</p>		<p>June 2004</p>
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<p>SEMINARS PinnacleOne Institute</p> <p>P1/Lorman Seminars</p> <hr/> <p>SERVICES Program & Project Management</p> <p>Dispute Avoidance & Resolution</p> <p>Real Property Advisory Services</p> <hr/> <p>PinnacleOne is a national construction consulting firm that provides sound advice, strategic solutions and peace of mind to its clients. Its diverse, highly trained professionals guide its clients through every step of the design, construction and contract closeout process to help them achieve their goals, and at the same time, avoid and manage risk. PinnacleOne's unimpeachable</p>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>DEFUSING CLAIMS</p> <p>STRATEGIES FOR DESIGN PROFESSIONALS</p> </div> <p>The design and construction of capital projects, both small and large, have been likened to minefields. Navigating through this minefield can be perilous for the untrained and uninitiated and challenging even for the battle seasoned veteran. On many projects, the dangers are few and far between. Some can be very explosive.</p> <p>Having analyzed scores of these bad projects, we have witnessed how very experienced but unwary architects and engineers let small problems become large claims or have been set up by crafty, opportunistic owners and contractors. Far too often, we have also seen how these design professionals struggle to show that they met the industry standard of care. How can architects and engineers guide themselves safely through the perilous minefield of capital construction and defuse explosive, damaging claims? Consider the following:</p> <p style="text-align: center;">Establish the Standard of Care</p> <p style="text-align: center;"><i>"I never expect to see a perfect work from an imperfect man."</i> --Alexander Hamilton, <i>Federalist Papers</i>, No. 85</p> <p>Unfortunately, too many owners and much of the general public do not have the wisdom of our Founding Fathers. Instead, many people think perfection or near perfection is a reasonable expectation in assessing the quality of the services provided by design professionals. That means owners often erroneously assume that their architect's plans are 100% complete, 100% coordinated, disciplines are</p>	 <p>Ernest Holmes</p> <p>Ernest Holmes, AIA, NCARB, NRCA is a Senior Consultant and forensic architect with PinnacleOne with over 30 years of experience in the construction industry. Mr. Holmes has extensive experience in a wide variety of applicable areas.</p> <p>As principal of a 140 person A/E Design firm for over nine years, Mr. Holmes designed, coordinated, and managed a variety of projects including airports, jails, medical research facilities, hospitals, multi-family housing, courthouses, and municipal dock facilities.</p> <p>Since joining PinnacleOne, Mr. Holmes has performed many</p>

objectivity, along with a proven approach to planning and attention to detail, has earned the company a reputation as one of the finest consultants in the construction industry.

Headquartered in Phoenix, PinnacleOne regional operations are located in Irvine, Los Angeles, Sacramento, and Hartford.

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100% integrated, and there will be no changes required during the course of the work. That is never the case and construction will reveal items in the design that must be modified, added, or deleted.

It is not uncommon for owners to look to its design professional when it comes time to pay for these changes. How much change should owners expect due to mistakes by their designers? To answer this question, litigants in trials against architects and engineers usually rely on expert testimony to educate the jury as to what is customary in the industry and should be reasonably expected from the design professional. This is known as the "standard of care" and is the baseline from which the professional malpractice of architects and engineers is measured.

It should come as no surprise that the respective experts of the owner and design professional in these trials usually differ in their opinions leaving the arbitrators, judges or jury (and thus their awards) uncertain. This is not a good situation for either the litigants or the decision-makers. Is there anything that architects and engineers can do to remove the issue of standard of care from the dueling field of the experts and thus minimize the risk of an unexpected and non-technical based result? Here are a few suggestions --

Establish reasonable expectations - Some design contracts now include language indicating that plans are not perfect and construction changes could be encountered during construction due to coordination issues and/or other design related details. The contract defines a value for these changes and the basis of payment for this "reasonable" amount. The amount can be defined as a fixed amount or as a percentage of the construction budget depending on project scale, complexity, and stability at the time of budget definition. This is an excellent way for architects and engineers to inform the owner during the design-contracting phase, prior to construction, that their documents will be imperfect and to establish a value for this imperfection.

Define the deliverables - Many contracts between designers and their clients do not clearly delineate the basis of deliverable delivery in both schedule and specific work product. Often standard language design contracts on this critical topic is vague and easily misunderstood resulting in claims based on the definition of "standard of care" by the respective experts of the owner and design professional. This can be avoided by clearly defining the design deliverables in

forensic analysis of construction defects and deficiencies, and has testified on architect-engineer standard of care issues in a variety of cases, both in Arbitration and in Court.

the contract. We suggest the following be considered:

- | Define the program and pre-schematic documentation if they are to be provided. Include specific documents such as programmatic description, area tabulation, construction budget, soft cost budget, etc. to define specifically what is going to be provided. Identify and list specific deliverables to be provided including sheet count, specific data to be included, schedules, and the like. This will provide a basis for the later evaluation of the completeness of the work of both the lead design professional and that of the design subconsultants.
- | Define specific plans, budgets, and specifications to be provided at the interim phases prior to construction documents. Again, be specific regarding a listing of plans if possible and definition of elevations, sections, etc. Specify how many sections and approximate the detail sheet counts if provided. Accurate definition at this stage will preempt later claims regarding insufficiency and unmet expectations.
- | Define construction documents in sheet count detail indicating an approximate sheet count by discipline, contingency sheets, and project specification sections for both front end and technical sections. This information usually is required to properly define fees at the project outset and if not identified can become a basis for questioning during litigation.
- | Identify check sets for coordination at each phase, including subsequent coordination check sets following owner comment.
- | Clearly define the level of detail and owner approval process, including specific steps requiring owner review and approval of documents and budget. Be as specific as possible regarding specific documents to be provided, reviewed, and approved.
- | Do not overstate the basis of documents avoiding terms such as "as required" or "as necessary." Avoid terms such as "highest quality" that can be construed as above average quality in definitions of services or deliverables as these terms will require a higher standard of care than industry norms.

A clear definition in the contract between the owner and the architect of what is included mitigates misunderstandings between the two and provides a basis for additional compensation if changes occur to the deliverables as the project progresses.

Document the Basis and Adequacy of the Design Fee - The starting point for critiquing the performance of architects and engineers can be the adequacy of their design fee. Owners and contractors commonly assert that the design professional did not perform to the standard of care because their fees were improperly estimated, insufficient to properly design, document, and administer the work. Conversely, the fees and basis of fees can become the cornerstone of a defense of these claims by architects and engineers if they can document the basis of their fee and show that this fee was adequate.

Fee estimates based solely on percentages of construction costs are typically looked at closely by arbitrators, judges, and juries who know intuitively that some projects are more difficult than others. Thus fee estimates based on independent labor cost estimates (bottom up) are better grounded and more credible than percentage based fee estimates. For this reason, design professionals should utilize a bottom up task-based methodology to estimate their fees for a particular scope of work whenever possible.

Design professionals routinely include contingencies in their estimates of construction cost for unknowns and potential changes. If possible, architects and engineers should also include a reasonable contingency for unknowns in each of their fee estimates based upon the knowledge of specifics at the time of estimate preparation and refined as the design and project evolves. The design professional should discuss this contingency with the owner and document any reductions to it by the owner. This is another excellent way for architects and engineers to inform the owner during the design-contracting phase, prior to construction, that their documents will not be perfect and may need modification during construction.

Practice and Document Design Quality Assurance - Architects and engineers should clearly define and document their office procedures, design practices and standards, and quality control and assurance protocols. Well-defined and consistently applied design practices will minimize the number of mistakes in the design. In addition, they will demonstrate the design professional's due diligence (standard of care) in trying to prevent mistakes during design when the rest of the inevitable design errors and omissions become apparent during construction.

Be aware, however, having office standards and protocol for design quality control and assurance can be more damaging to architects and engineers faced with allegations of professional malpractice than not having them. This happens in cases when the design professional has not documented compliance with them during the design and is unable to show that they were practiced. This is particularly true if the owner can show that the practice of these standards and protocols would have prevented the mistake or identified it before the error or omission had a cost or time impact to the project.

Yes, all architects and engineers are human and none are perfect. Thus, there will always be claims against them. Courts, like Alexander Hamilton, are right not to expect perfect work from design professionals. As seasoned veterans of many duels between experts in protected claims wars on behalf of architects and engineers, we guarantee that if design professionals practice the strategies above to establish the standard of care, they will be better positioned for a more certain and fair result.

Authors' Note - This series of articles is adapted from a paper presented by Ernest Holmes, AIA, NCARB, NRCA and Lee Schumacher, P.E. at the Design Professional Risk Control Group (DPRCG)s 2001 Annual Convocation in Palm Springs, California. The authors express our thanks to Bob Camilleri, Camilleri & Clarke (Wethersfield, CT) for promoting PinnacleOne's participation in the program and his enthusiasm for the themes of this paper.

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