Understanding Design/Build Risk

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Introduction

Owners complain that traditional construction delivery systems are too slow and too expensive. They are attracted to design/build because it ideally speeds project completion, reduces cost, simplifies contracting, and creates a single point of responsibility. Engineers are intrigued by design/build because it allows them to use their close client relationships to capture a larger percentage of construction revenues. Contractors like design/build because of its flexibility and profit potential. These converging interests are fueling a trend toward design/build.

But design/build presents challenges for engineering firms. Few firms have significant experience in managing construction projects. Most firms sought to reduce their liability exposure by deliberately avoiding responsibility – and experience – in construction means, methods, and techniques. As a result, modern engineering firms may know a lot about construction but little about constructing.

This avoidance strategy is driven by job site liability concerns. By avoiding responsibility for construction means and methods, engineering firms also avoided responsibility for job site safety. But this isn't possible in engineer lead design/build. The design/build engineer/contractor is intimately involved with construction operations and is fully exposed to OSHA citation and third party liability. To manage these risks, the design/build engineer must adopt a new and more aggressive approach to job site safety.

Design/build also changes the scope of an engineer's liability. The hallowed standard of care is replaced by warranties, guaranties, and even strict liability. Engineers must recognize the practical effect of this liability change.

This paper examines significant issues confronting engineers that undertake design/ build responsibility. Armed with an understanding of these issues, the engineer can evaluate the real risks and develop strategies for successfully completing design/build projects.

The New Legal Environment

Liability for pure engineering assignments is defined by the standard of care. Under this standard, an engineer is not liable if the services are comparable to services performed by competent engineers practicing under similar circumstances. Without negligence, there is no liability.

Contractors can be negligent, too. But they face greater liability risks from guaranties, warranties, and even strict liability. Contractors, including design/builders, routinely warrant that the work meets applicable codes, satisfies the plans and specifications, and is not "defective." These warranties create a low liability threshold. For a warranty to apply, the owner need only show that the work does not meet the warranted standard. For example, if a pump fails to operate, the contractor cannot defend by showing that it took a reasonable approach to procuring the pump, or that the pump was installed in accordance with industry standards, or even that the pump was designed and manufactured in accordance with good industry practices. If the pump does not work, the contractor must repair or replace the pump. If the pump causes injury or damages property, the contractor is responsible – whether the contractor was negligent or not.

Warranties can be express or implied. If a court implies a warranty, then the contractor will be liable as if he had specifically agreed to the warranty terms. Implied warranties are not applicable to pure engineering services, but can attach to physical work, like contracting, or to a combination of design and physical work. Thus, design/builders face the distinct possibility that implied warranties will apply to their work.

Strict liability is another legal theory that does not apply to pure engineering work but may apply to design/build projects. When design merges with construction, a court can view the resulting project as a "product" that has been introduced to the commercial marketplace. As such, it is governed by product liability law – the same law that applies to automobiles and lawn mowers. Under strict liability, the injured person only needs to prove that the product was defective and that the defect caused the injury. Negligence is not required.

A court is particularly likely to apply strict liability if the "product" was "mass manufactured" for distribution to consumers. In some jurisdictions, tract housing and subdivision building pads are examples of "mass manufacture" in the construction industry.[1]

Indemnification

Indemnity is a major battlefield in negotiating engineering service agreements. Clients often ask for comprehensive indemnity, but this requirement is usually negotiated to a comparative negligence standard. But owners demand stronger indemnity from their contractors – particularly with regard to site safety. And much of this liability is uninsured.

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[1] *See*, *Schipper v. Levitt & Sons, Inc*., 44 N.J. 70, 207 A.2d 314 (1965); *Kriegler v. Eichler Homes, Inc.,* (1969) 269 Cal.App.2d 224; and, *Blagg v. Fred Hunt Co*., 272 Ark. 185, 612 S.W.2d 321 (1981). S*ee generally*, Annotation, *Recovery, Under Strict Liability in Tort, for Injury or Damage Caused by Defects in Building or Land*, 25 A.L.R.4th 351 (1983).

General Liability policies can be endorsed to cover liability assumed under indemnification agreements. But this coverage is limited by the scope of the general liability policy. Economic damages, damages to the work, or damages caused by professional services are not covered by CGL policies. Professional liability policies specifically exclude liability assumed by contract. Thus, if a designer agrees to sweeping indemnity clauses, it places its firm's assets at risk. To limit this risk, indemnification clauses should be negotiated to a comparative negligence standard,[2] or the indemnification clause should distinguish between professional liability and general liability risks with extensive coverage only attaching to the CGL policy risks.

Licensing and Procurement

Design/Builders face a bewildering array of licensing and procurement regulations, especially in the public sector. Each state has different regulations (or no regulations) concerning contracting and the practice of engineering. In the public sector, design/ build work may need to be openly bid. It will depend upon the specific jurisdictions contracting authority and any particular exceptions that apply. The American Bar Association's Forum on the Construction Industry has published a comprehensive manual on licensing and procurement that surveys the requirements for all fifty states and the Canadian provinces.[3] This is a very useful resource for licensing and business practice issues. But the laws are changing quickly. Before proceeding in a new jurisdiction, a design/builder should consult with a local construction lawyer experienced in engineer-lead design build.

Job Safety

OVERVIEW

Engineers have traditionally avoided responsibility for job site safety. Safety was viewed as part of the contractor's "means and methods" and beyond the engineer's control and responsibility.[4] This approach worked as long as the engineer:

- Contractually disavowed responsibility for job site safety;
- Did not have the authority to correct the contractor's safety violations;
- Did not by conduct undertake job site safety responsibility.

If an engineer's assignment is limited to investigation and design, the engineer can work within these confines. But the design/builder takes responsibility for site safety, supervises and directs the subcontractors, and manages the site safety programs. If an injury occurs, the design/builder will be directly involved.

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[2] Typical comparative negligence language includes a phrase like "... to the extent caused by Engineer's negligent acts, errors or omissions ..."

[3] THE DESIGN/BUILD PROCESS: A GUIDE TO LICENSING AND PROCUREMENT REQUIREMENTS IN THE 50 STATES AND CANADA, ABA Press 1997.

[4] See, *Peck v. Horrocks Engineers, Inc.*, 106 F.3d 949 (10th Cir. 1997) and cases cited in Frank D. Wagner, Annotation, *Liability to One Injured in Course of Construction, Based Upon Architect's Alleged Failure to Carry Out Supervisory Responsibilities*, 59 A.L.R.3d 869. For a more expansive view of an engineering firm's liability see, *Carvalho v. Toll Bros. and Developers,* 143 N.J. 565, 675 A.2d 209 (1996), holding that an engineer with actual knowledge of a dangerous condition could be liable for a trench collapse.

THIRD PARTY LIABILITY

Construction is a dangerous occupation. Job site injuries are common and severe. When an injury occurs, the injured worker can recover under the state workers' compensation system. But these systems restrict the amount of the worker's recovery and protect the employer from a direct claim by the employee. In serious injury cases, the worker will sue other parties to avoid the monetary restrictions of workers' compensation. Thus, if a subcontractor's employee is injured, the employee will make a workers' compensation claim against his employer and sue the general contractor, the owner, the engineer, or anyone else that might be responsible for the accident.

The outcome of a worker's suit can depend upon the jurisdiction. In some jurisdictions, a vicariously liable party – like the general contractor or the owner – may be protected by the workers' compensation bar.[5] Even under this rule, however, the injured worker can sue if the injury was caused by the contractor's independent negligence. In most cases, an experienced personal injury attorney will search for some party who bears some responsibility and who is not protected by workers' compensation statutes. Design/builders are an obvious target.

INDEMNIFICATION

Even if a design/builder is not directly liable for site safety, it may be forced to assume these responsibilities through indemnification. Many owners require contractors to sign onerous indemnification clauses and virtually all savvy owners require indemnification against job site injury claims. Indemnification can also be used to lessen the design/ builder's risk by requiring subcontractors to indemnify the design/builder and the owner from site safety risks.

INSURANCE

Job site injury risks can be transferred to the engineering design/builder's insurance policies, or to insurance policies maintained by contractors and others, if several issues are properly addressed.

Commercial General Liability policies (CGL) have two provisions that affect coverage for job site safety, the Professional Liability Exclusion and the Other Insurance Clause. When an engineering design/builder purchases CGL coverage, it should discuss these provisions with its broker.

The Professional Liability Exclusion is designed to exclude coverage for professional engineering services. This is appropriate since design firms typically maintain Professional Liability (PL) coverage for this risk. But the standard exclusion goes well beyond simple professional liability, and excludes coverage for supervisory, inspection, or engineering services.[6] This directly affects the engineering design/builder because liability often arises from a failure to observe a problem and direct the subcontractor to fix it. These are "inspection" and "supervisory" services. This creates the anomalous result that an engineering firm isn't covered for supervising a contractor even though the contractor is covered under virtually the same policy form.

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[5] *See e.g.*, *Toland v. Sunland Housing Group, Inc.*, (1998) 18 Cal.4th 253 and cases cited therein from various jurisdictions.

[6] Insurance Service Office Exclusion CG 22 43 07 98 (1997) states:

> This insurance does not apply to "bodily injury", "property damage", or "personal and advertising injury" arising out of the rendereing of or failure to render any professional services by you or any engineer, architect or surveyor who is either employed by you or performing work on your behalf in such capacity.
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> Professional services include:
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> 1. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; and
> 2. Supervisory, inspection, architectural or engineering activities.

There are alternative formulations for the professional liability exclusion. For example, one exclusion only limits coverage for claims "due to the rendering or failure to render professional services." Under this exclusion, supervision and inspection are covered unless they are actually professional services. In the above example, the engineer would be covered if the inspection and supervision did not involve the use of professional judgement.

An insurance broker should be able to provide advice concerning the professional liability exclusion and arrange for the better professional liability exclusion to be used.

Some job site injuries potentially involve both the CGL and PL coverages. In this instance, the relationship between the two policies is covered by the policies' "other insurance" provisions.

CGL policies typically have other insurance provisions that provide for a proportionate sharing between insurance policies covering the same risk. PL policies typically have "excess" other insurance policies that stand behind other available insurance. When these two types of other insurance clauses collide, the excess policy is not called upon until the proportionate policy is exhausted. This rule benefits the insured because the CGL policy has no deductible and the limits are not eroded by defense costs.

Recently, however, some insurers that provide CGL policies to design professionals have inserted an excess other insurance clause into their policies. If there is co-insurance, the CGL policy and the PL policy are jointly responsible in proportion to their respective policy limits. Thus, the PL policy, and its deductible, are drawn into the job site injury dispute. To avoid this outcome, design firms should have their brokers obtain a CGL policy with a traditional "pro rata" other insurance provision.

Finally, the design/builder should assure that its contractors name it as an additional insured under their CGL policies. In some instances, the coverage as an additional insured may be more favorable than the design/builder's own CGL coverage. But the design/builder must enforce this requirement. In the Terra program, there have been several instances where significant losses could have been avoided – or at least reduced – if the design firm had enforced an existing requirement that they be named an additional insured.

OSHA LIABILITY

OSHA has repeatedly tried to impose responsibility on designers, but pure design services do not trigger OSHA liability.[7] OSHA has been successful, however, in citing design firms that assume some responsibility for physical construction services.

Early OSHA cases focused on whether the designer had "substantial supervision" over actual construction activities. More recently, the OSHA Review Commission has looked at three factors:

- Has the designer assumed broad contractual responsibilities that enable it to abate hazards by itself?
- Has the designer assumed actual or de facto authority over the trade contractors?
- Has the designer directly involved itself in resolving safety issues?[8]

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[7] Starting with *Skidmore, Owings & Merrill*, there is a consistent line of authority exculpating designers who have no involvement in the management of construction activities. *See, Skidmore, Owings & Merrill,*5 OSHC (BNA) 1762 (1977); *Simpson, Gumpertz & Heger, Inc.,* 15 OSHC (BNA) 1851 (1992); *Foit-Albert Associates Architects &Engineers, P.C.*, 17 OSHC (BNA) 1975 (1997).

[8] *CH2M HILL Central, Inc.,* 17 OSHC (BNA) 1961 (1997), *rev'd, CH2M HILL, Inc., v. Herman,* 192 F.3d 711 (7th Cir. 1999).

In *Kulka Construction Management Corp.*, a construction manager agreed to provide recommendations and review of the safety program and thus, was found by the OSHA Review Commission to have had "substantial supervision" over actual constrction activities.[9]

In *CH2M HILL Central, Inc.*, the OSHA Review Commission found that the designer had accepted such broad responsibilities over the project that it was responsible for site safety despite contract language stating that the designer was not responsible for the particular trade contractor's means and methods. But the "broad responsibilities"[10] undertaken by CH2M HILL were similar to those many designers undertake when providing construction phase services. Accordingly, this "new test" (based on the braod responsibilities) imposed liability on the designer at a far lower threshold than the prior "substantial supervision" test. The Seventh Circuit Federal Court of Appeals ultimately reversed the Review Commission's decision based on absence of any factual showing "that CH2M HILL contractually or on a *de facto* basis exercised direct authority and control over, or substantially engaged in activities integegrally connected with," the safety measures at issue.[11] But the Court refused to rule on the "new test's" validity, depite expressing concern that the test ignored the parties' contractual apportionment of site safety responsibility.[12] In short, the court did not strike down or otherwise invalidate the onerous "new test."

Cases such as *Kulka Management* and *CH2M HILL* make clear OSHA's determination to impose site safety responsibility on designers involved in the construction process. A design/build engineering prime – even if it delegates site safety to others – is subject to OSHA citation. Design/build engineers cannot take a passive role concerning site safety. They must enforce safety standards and actively police the construction site. The risks to human life, and the financial penalties, are simply too great.

Design/Builders are responsible under the *General Duty Standard*[13] for maintaining a safe place of work. OSHA has also promulgated specific regulations governing safe practices on construction sites. The design/builder's personnel must be thoroughly conversant with these *Construction*

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[9] 15 OSHC (BNA) 1870 (1992).

[10] CH2M HILL was authorized to engage in the following managerial activities from which the Commission imputed a duty to maintain safe conditions:

> CH2M's administrative responsibilities encompassed a wide variety of managerial matters such as scheduling, coordination of construction activities, preparation and interpretation of contract documents and modifications including negotiation directly with trade contractors, claims processing, and even dispute resolution. * * * Furthermore, CH2M was involved in the Project from its very inception. Not only was CH2M part of the process by which the initial contracts and specifications were developed and let out for bids, but CH2M established the programmatic framework for the entire Project through its contractual responsibility to establish and staff the Project Management Office.

17 OSHC (BNA) 1961 (1997).

[11] *CH2M HILL, Inc., v. Herman*, supra, 192 F.3d at 721.

[12] *Id.* at 716, 720-21.

[13] 29 U.S.C. § 654(a)(1)(2) (1988) provides as follows:

Sec. 654. - Duties of employers and employees
(a) Each employer (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees; and (2) shall comply with occupational safety and health standards promulgated under this chapter.

Safety Standards.[14] Training is available from a variety of sources and OSHA publishes extensive reference works. Regulations and other material are also available through the World Wide Web.[15]

The penalties for OSHA violations are severe. Willful violations can result in fines from $5,000 to $70,000.[16] Where death occurs, criminal citation is possible.[17] OSHA is a prosecutorial organization. They can and will be aggressive. And there is no victory against OSHA. Even if you defeat an OSHA citation, you will have spent tens to hundreds of thousands of dollars in defense.[18] In the case of OSHA, an ounce of prevention saves a ton of legal bills.

The Terra Design/Build Documents

Terra has developed design/build documents to be used for geotechnical projects. The documents are examples of typical documents and should be modified to fit each particular firm's needs. The contracts should also be reviewed by the firm's legal counsel to assure they meet local practices and requirements. Some issues, such as the "pay when paid" provisions, indemnification, and limitation of liability differ significantly from one state to another.[19] Some states have particular payment provisions that may apply. Firms utilizing these design/build documents must check to see whether, and how, such concepts can be implemented in a particular state.

The Design/Build documents contain three basic contracts:

- Agreement for Engineer Geotechnical Design/Build Work
- Agreement for Subcontractor Geotechnical Design/Build Work
- Agreement for Subconsultant Geotechnical Design/Build Work

ENGINEER AGREEMENT

The Engineer Agreement is between the Owner and the Design/Build Engineer. The Subcontractor Agreement is between the Design/Build Engineer and its contractors. The Subconsultant Agreement is between the Design/Build Engineer and its consultants. All of the documents are modular; they consist of a cover agreement, general conditions, and exhibits covering scope of work, payment and insurance, and bonds. These exhibits take the commonly changed components and move them out of the body of the document. This approach makes the contracts easier to maintain and allows the general conditions to be a printed form.

The contract set is a blend of engineering and contracting concepts. For example, the Engineer Agreement distinguishes between Design Services and Construction Services. The Design

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[14] 29 C.F.R. 1910 *et seq.*

[15] www.osha.gov.

[16] 29 U.S.C. § 666(a).

[17] 29 U.S.C. § 666(e). Criminal sanctions include fines of up to $10,000 or by imprisonment for as much as six months. If the conviction is for a second violation, the fine can be as much as $20,000, and imprisonment can be for as much as one year.

[18] In a major OSHA case, a design firm reportedly spent over a million dollars fighting the OSHA citations. While unusual, this highlights the potential costs of fighting OSHA citations.

[19] For example enforceability of "pay if paid" and "pay when paid" clauses varies among jurisdictions. In some states, the clauses are unenforceable. *See e.g., West-Fair Electric v. Aetna Cas. & Sur. Co.,* 87 N.Y.2d 148, 638 N.Y.S.2d 394 (1995) (pay-if-paid provisions void in New York as against public policy); and *Wm. R. Clarke Corp. v. Safeco Ins. Co.* (1997) 15 Cal.4th 882 (pay-if-paid provisions void in California as against public policy).

Services are covered by the normal standard of care. The Construction Services are covered by a modified warranty provision. The payment provisions have a contractor style retention, but have an incontestability provision. The contract set also allows for equitable adjustment of the contract and has a changes and differing site condition provision applicable to construction activities. The contract has construction style warranties, but an engineering style limitation of liability. Consequential damages are waived between all parties. The dispute resolution provisions use meet and confer and mediation — but then switch to arbitration if the mediation is unsuccessful. Arbitration is a better forum for a design/build contractor to bring payment claims.

SUBCONTRACTOR AGREEMENT

The Subcontractor Agreement tracks the Engineer Agreement. Obligations undertaken in the Engineer Agreement "flow through" to the Subcontractor Agreement. The Subcontractor Agreement has provisions appropriate for a general contractor (or contractors) performing work at a construction site. It also contains provisions not discussed in the Engineer Agreement, such as site safety. The contractor is responsible for safety of its employees and subcontractors and agrees to indemnify the Engineer and its client from job site injuries. The contractor also agrees to name the Engineer and the Client as additional insureds. The payment provisions contain a "pay if paid" clause and have a ten percent retention.

SUBCONSULTANT AGREEMENT

The Subconsultant Agreement is designed to work with the Engineer Agreement and has provisions "flowing through" obligations from the Engineer Agreement. The Subconsultant Agreement has a "pay when paid" clause. The dispute resolution clauses have been tailored to work with the Engineering Agreement.

Conclusion

Design/Build is on the rise and Terra wants its insureds to have a competitive edge in this market. It has developed new insurance products to provide coverage for this work. It has developed contract documents to assist its insureds in developing sound design/ build contracts.

There are risks with design/build. But with a clear understanding of the risks and sound business and risk management, the risks can become rewards.