

Legal Considerations For Design Professionals Involved in the Identification, Evaluation, and Mitigation of Geo-Hazards

David H. Corkum, Esq.

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What do the Courts have to say about geo hazards

- Good news is - there not much law
 - 33 cases in Lexis
 - Most having to do with advocacy groups attempting to stop development
 - One involving a disbarred lawyer in Colorado who took a geo hazards CE course
- Bad news is there is not much law
 - So it is difficult to predict with much certainty how a particular set of facts would be viewed by a court

Who targets the Design Professional?

- Your clients
- Contractors and their subcontractors
- Abutters, general public,

How does liability typically accrue to a Design Professional?

- By contract
- Through a failure to comply with statutory provision
 - OSHA
- By virtue of your PE, PG, or LPG licenses
 - Certification
- Through a claim in Tort

Tort Law - Negligence Based Theory of Liability

- The Elements of Negligence:
 1. Duty
 2. Breach
 3. Causation
 4. Damages
- Plaintiff has the burden of proving – by a preponderance of the evidence - an unbroken chain of these 4 elements.

Duty - Standard of Care

- [A]s a general rule, an architect's efficiency in preparing plans and specifications is tested by the rule of ordinary and reasonable skill usual exercised by one of that profession . . . [I]n the absence of a special agreement, he does not imply or guarantee a perfect plan or satisfactory result. Architects and other professionals deal in somewhat inexact sciences and are continually called upon to exercise their skill and judgment not to anticipate and provide for random factors, which are incapable of precise measurement. The indeterminable nature of these factors makes it impossible for professional service people to gauge them with complete accuracy in every instance . . . Because of the inescapable possibility of error, which inheres in these services, the law has traditionally required, not perfect results, but rather the exercise of that skill and judgment which can be reasonably expected from similarly situated professionals.

Klein v. Catalano, 386 Mass. 70, 718 (1982).

Breach of Duty

- Requires an opinion; therefore requires an expert
- where a professional is accused of negligence in failing to adhere to accepted standards within his profession, the accepted standards must be established by **qualified** expert testimony unless the standards are a matter of common knowledge. Grant v. Lewis/Boyle, Inc., 408 Mass. 269, 276 (1990)
- Because the professional is to be judged according to the “learning, skill and experience **which is ordinarily possessed by the professors of the same art or science**,” it is essential that any expert introduced to provide supportive testimony of the claim of professional engineering malpractice, practices the same discipline as that called into question by the claim. Leighton v. Sargent, 27 N.H. 460, 469 (1853).

Other Tort Liability - Negligent Misrepresentation

- To recover for negligent misrepresentation, a plaintiff must prove that the defendant:
 1. in the course of his business,
 2. supplied false information for the guidance of others,
 3. in their business transactions causing and resulting in pecuniary loss to those others,
 4. by their justifiable reliance upon the information, and
 5. with failure to exercise reasonable care or competence in obtaining or communicating the information.

Nota v. Keyes, 45 Mass. App. Ct. 15, 19-20 (1998),
- An exception to the Economic Loss Doctrine exists for Negligent Misrepresentation.

A word about the role of experts

- The elements of duty and breach of duty generally require opinion testimony
- The rules of evidence state that opinions are for the most part the province of Experts
- You guys are typically pretty tough on your peers

Types of Projects

- Identification of Geo-hazards
- Evaluation of Geo-hazards
- Mitigation of Geo-Hazards
- Emergency Response to Geo-Hazards

Roles and Responsibilities of Clients:

- Planning the project
- Developing an adequate budget and securing funding
- Allocation of risks
- Selecting designers and contractors
- Oversee and manage its Design Professionals
- Overall decision maker

Roles and Responsibilities of Design Professionals:

- Advancing the design from concept to final design
- Design of the permanent facilities
- Performing an appropriate geotechnical investigation
- Preparing the contract documents
- Review and approval of Contractor Submittals

Roles and Responsibilities of Constructors:

- Review and properly interpret the contract documents to prepare an appropriate bid.
- Visit the site and review conditions
- Plan, develop procedures, and prepare submittals detailing the selected means and methods proposed to construct the project.
- Submit questions or requests for information to Design Professional prior to performing construction.
- Provide the labor, equipment, materials and management expertise necessary to execute the plans in accordance with the approved procedures and the contract requirements within the allotted time.

Identification of Geo-hazards

- Lies at the intersection of technical, public policy and political trade-offs
- A well informed client is your best ally
- Policy decisions are the purview of client

Evaluation of Geo-hazards

- Akin to a “due diligence” inspection
- Resist making a single recommendation without adequate information
 - Report on a range of options and provide pros and cons of each.
- There is a great potential for your work product to be misused

Mitigation of Geo-hazards

- The bread and butter of design professional's services
- Project success, (client and contractor satisfaction) will be measured much the same as your other projects
- A word about best practices

Emergency Response to Geo-hazards

- Either pursuant to an “on-call” services contract or a spur of the moment voluntary assistance.
 - If negotiating a “on-call” contract include a recitation of expected circumstances.
 - Caution with those individuals assigned to this task.
- Good Samaritan statute
 - limitations on protection

Differing Site Conditions; An Overview

- What are they?
- Why do we have them?
 - Sometimes the ground is different than expected.
 - Sometimes its because of an inadequate site investigation
 - Sometimes its because the Design Engineer failed to consider the appropriate means and methods of construction
 - Sometimes the contractor selects a means and methods of construction that is incompatible with the site
- Why are they contentious?

Simpson v. United States, 172 U.S. 372, 380 (1899)



- The contract imposed upon the contractors the obligation to construct the dock according to the specifications within a designated time for an agreed price upon a site to be selected by the United States. We look in vain for any statement or agreement or even intimation that any warranty, express or implied, in favor of the contractors was entered into concerning the character of the underlying soil

COMMON LAW – Breach of Contract

United States v. Atlantic Dredging, 253 U.S. 234 (1920)

- The material to be removed was “mainly mud and mud with a mixture of fine sand”
- In fact the encountered material was compacted sand and gravel with a small percentage of cobbles
- Court held that this misrepresentation was a breach of contract

COMMON LAW – Defective Specifications

United States v. Spearin, 248 U.S. 132 (1918)

- “If the contractor is bound to build according to plans and specifications prepared by the owner the contractor will not be responsible for defects in those plans”
- “But the insertion of the articles prescribing the character and location and dimensions of the sewer imported a warranty that, if the specifications were complied with, the sewer would be adequate.”

F.A.R. - 48 C.F.R.52.236-2

- (a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of (1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or (2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.
- (b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly
- No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.
- No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

Elements of a DSC

- Contract indications
- Reasonable contractor interpretation
- Reliance
- Material difference
- Causation
- Damages
- Notice

Contractor's Duty to Investigate Site

Model Jury Instruction

- If you find that the need for the [disputed extra work] would have been apparent to the contractor from a reasonably conducted site visit before it submitted its bid to perform the work, then the contractor is not entitled to additional compensation. If, however, you find that a pre-bid site visit was not reasonably required or that the [disputed extra work] would not have been apparent to the contractor from a reasonable site visit, the contractor is entitled to be compensated for this extra work.

Reasonable Care vs. the Spearin Doctrine

- Design-Bid-Build
- Design-Build

Statute of Limitations Statute of Repose

- In NY for either contract or negligence based claims:
 - SOL - 3 years for licensed and regulated professionals, 6 years for construction managers;
 - SOR - None!
- Personal Injury to third parties:
 - 3 years from date of injury
 - Statutory notice requirements . . .

Economic Loss Doctrine

- In the absence of personal injury or property damage, a party may not recover purely economic losses from another party in tort unless the parties are in contractual privity. Bay State-Spray & Provincetown Steamship, Inc. v. Caterpillar Tractor Co., 404 Mass. 103, 107 (1989)

Limitation of Liability Clause

- Limit client's recovery to:
 - some certain amount, or
 - the fee paid for the services, or
 - the amount of available insurance.
- Enforceability guidelines - dependent on jurisdiction.
- In NY, enforceability is unclear due to the potential applicability of N.Y. Gen Oblig. Law Section 5-323

CASE 1 – Evaluation

- New home owner retains a geotechnical engineer to investigate some surficial sloughing of a slope and also the removal of an existing swimming pool and installation of a new pool.
- Engineer's recommended subdrain under new was never installed.
- Following heavy rains the slope and pool under slid taking out 4 down-slope homes.

CASE 2 – Mitigation

- State retains a geotechnical engineer to design a rock cut for approach to a new bridge.
- Shears, fractures and discontinuities at 60 degree dictates design. which calls for top down excavation and “stability inspector”
- VE proposal by construction contractor proposes steeper slope and bottom up excavation.
- Stop work order by geologist overridden by State’s construction manager.
- Rock slide killed operator of Cat D-8 and another worker.

Conclusions

- The same risk management principals that you use in your civil design and investigation practice apply.
- The factors to consider, however, are slightly different and the consequences of a risk materializing are likely much more severe.
- Special attention to your contracts, limitations of liability clauses, and perhaps additional insurance are worthy of consideration.