

LEGAL CONSIDERATIONS FOR DESIGN PROFESSIONALS INVOLVED IN THE IDENTIFICATION, EVALUATION, AND MITIGATION OF GEO-HAZARDS

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Abstract: Geologists, Engineers and other scientists (Design Professionals) involved in identifying, evaluating, and mitigating geo-hazards expose themselves to a broad spectrum of potential liability from entities known and unknown. This paper explores the legal theories that a potential claimant would use to attack the Design Professional and applies those theories to real world scenarios. It also presents some of the common legal defenses that a Design Professional would utilize to defeat those claims.

I INTRODUCTION

Engineers, Geologists, Planners, Earth Scientists, and other “*Design Professionals*” involved in the identification, remediation, or mitigation of risks attributable to naturally occurring features are susceptible to claims from a wide array of parties both known and unknown. While the liabilities and causes of actions that a potential plaintiff might assert to recover against these Design Professionals are not unique, the circumstances under which the Design Professional operates in addressing geo-hazards require an understanding of from whom and how a claim may originate. Armed with this understanding of potential liability, the Design Professional can mitigate her own risks while providing the services demanded by their clients and the public.

The law with respect to geo-hazards is not a unique body of law tailored around the industry. Rather, much like the technical disciplines that are involved in geo-hazard Projects, doctrines and concepts are borrowed from the design and construction industry. In many circumstances, statutory requirements shape the contours of these common law applications to geo-hazard Projects. Accordingly, Design Professional undertaking geo-hazard Projects must familiarize themselves with local statutes applicable to their particular project.

Because the very nature of geo-hazard Projects implies a significant degree of risks and because the consequences of that risk’s occurrence can sometimes be catastrophic, the risk to the Design Professional can be proportionally catastrophic, in many instances threatening the very survival of the Design Professional Practice.

II SOURCE OF LIABILITY

It is indeed unfortunate that the most likely claimant against the Design Professional will be the very client you seek to serve. That client’s dissatisfaction with the services of the Design Professional may materialize during the actual performance but most likely will not manifest itself in a claim until after the project has been completed. Managing client expectations is, therefore, an important risk management exercise of the Design Professional. In nearly all situations the old adage of “under promise - over deliver” will serve Design Professionals well.

Even with a satisfied client or at least a satisfied client contact, others within the client’s organization may be less satisfied with the Design Professional. In many instances, that dissatisfaction can be driven by actors not involved in the day-to-day relationships of the Design Professional. Inter agency

jealousy or rivalries, political pressure, or unfavorable press coverage can also cause public owners to assert claims against its Design Professional.

Another category of potential complaints seeking recovery against Design Professional are the contractors and their sub-contractors retained to implement mitigation measures recommended or designed by the Design Professional. As discussed below, these claims can take on several different forms but in general arise when either the Design Professional recommended solution did not perform as anticipated or the implementing contractor underestimated the difficulty in constructing the proposed remedy and overran its budgeted costs for that project. Claims by contractors and sub-contractors are often made in the first instance against the Design Professional's clients, the project owners but have a way of being "passed through" to the Design Professional by the project owner.

Abutting property owners and general public in the vicinity of or impacted by the project are the third category of potential claimants. When these claimants come into the picture it is generally related to a property loss or personal injury that has occurred. Plaintiff's attorneys in these cases are generally not interested in who is responsible for a failed project but only in bringing as many defendants as it possibly can into the action, thus increasing the pool of defendants able to pay any ultimate judgment.

A. How does liability typically accrue to a Design Professional

In a common law society, claims against Design Professional are usually either breach of contract actions or more commonly a claim sounding in tort. Less frequently, a failure to comply with statutory provisions, such as OSHA requirements or by virtual of the Design Professional's license may also result in financial penalties to the Design Professional. By far, the most common claims are in tort and of these, most are allegations of negligence, otherwise known as professional malpractice.

1. Tort Liability

The law of torts aims to protect persons and their property from wrongful acts. This body of law addresses such things as assault, battery, trespass, defamation, negligence, etc. The philosophy underlying tort law is that for a society to function effectively and peacefully, all members of that society should constrain their behavior within certain guidelines. These guidelines are imposed by the duty we each owe to our fellow citizens. The actual contours of that duty are determined by the members of that society, or, if at trial, through a sampling of that society known as a jury.

It is worthwhile then to consider the law of negligence in some detail. In order to prevail on a negligence-based claim, a plaintiff must show an unbroken chain of the four recognized elements of negligence. That chain includes that the defendant; 1) owed the plaintiff a duty of care; and that the defendant 2) breached that duty of care; and that defendant's breach of its duty of care 3) caused damages to the plaintiff; and that the plaintiff can actually prove 4) its damages. These four elements of negligence are recognized throughout the country. While different jurisdictions have slightly different interpretations and rules for considering each of the elements those difference are not significant for the discussion herein.

For simple, run of the mill negligence claims the courts have articulated a "reasonable man" standard for the duty of care owed by one person to another. In other words, a defendant is said to owe a plaintiff that level of care that a reasonable person would show in similar

circumstances. For example, irregardless of speed limits and motor vehicle regulations, most people would agree it would be unreasonable for a defendant to drive her car through an intersection at 70 mph when that intersection was packed with pedestrians. If that speeding through the intersection caused an accident that resulted in litigation, a jury would be called upon to decide whether the driver was exercising reasonable care in traversing the intersection. That determination would undoubtedly be based on the facts and circumstances surrounding the incident including such things as visibility, traffic conditions, road surface conditions, etc. In essence they would be asked to put themselves in the position of the driver and decide how they would have acted or behaved under the given circumstances.

A Design Professional engaged in a geo-hazard project will be required to perform its services in compliance with the professional standard of care. That professional standard of care is usually articulated as requiring the Design Professional to exercise that skill and judgment, which can be reasonably expected of similarly situated professionals. One court has very elegantly stated that standard of care for an architect, the services of which are very similar in the eyes of the law to geologists and engineers, as follows:

[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.ⁱ

Klein v. Catalano, 386 Mass. 701, 718 (1982). There can be no liability for acts and omissions of a Design Professional, which are based on an honest exercise of professional judgment.

The second element in the negligent claim is breach of duty. The plaintiff must demonstrate that the Design Professional somehow failed to exercise that reasonable skill or judgment which a similarly situated professional would have exercised. Unlike our example of a speeding car through an intersection, the law does not consider a lay jury capable of understanding the duty or the breach of duty without the benefit of expert testimony. Consider for example, the confusion of a lay jury wrestling with whether or not the undisturbed soil samples relied on for consolidation testing were sufficient for their intended purpose. In situations like these the courts allow the jury to be assisted by hearing the testimony of experts.

Unlike all other witnesses that are allowed to testify as to what they saw, heard, or did, experts are allowed to testify as to their opinions on those subjects that they have been properly qualified as an expert. For example, in a case against a Design Professional the courts allow experts to testify as to their opinion on whether the defendant Design Professional owed the plaintiff a duty of care and whether or not the defendant breached or failed to comply with that duty of care. In order to rebut that plaintiff's expert's opinion, the defendant must present its own expert to refute the contention of duty or else to present testimony that the defendant Design Professional complied with the standard of care expected of similarly situated Design Professionals. Indeed the

significance of expert testimony is the most important aspect of prosecuting or defending a claim against a Design Professional. In many jurisdictions, a plaintiff's failure to present a suitably qualified expert to opine on the expected standard of care is cause for an instant dismissal from the case. If the matter proceeds to trial, the resolution often boils down to a battle between the experts, fighting to persuade the jury that their testimony is more correct.

The other elements, or links in the negligence chain include causation and damages. The plaintiff must be able to prove by a preponderance of the evidence that the defendant's breach of its duty of care actually caused the damages and complains of. The damages can be either personal injury or property damage or in certain circumstance, purely pecuniary such as cost overruns.

2. Contract Law

Successful litigations against Design Professionals under a theory of breach of contract are rare. A contract is really nothing more than an agreement, the terms and conditions of which the law recognizes, and the courts will enforce. Design Professionals on geo-hazard projects "agree" to identify, or evaluate, or develop a mitigation solution with their client. That agreement may call for certain deliverables in terms of reports, maps, recommendations, etc. As long as the design professional fulfills the terms of its contract within the time required by that agreement it should be immune from breach of contract actions. The matter of whether or not the evaluations were performed appropriately, whether the calculations were made appropriately, or whether the recommendations were sound is generally the province of tort law discussed above. Plaintiffs will often plead their case against Design Professionals as sounding in both breach of contract and negligence but in almost all cases, the court's evaluation of those claims will collapse into a negligence-based evaluation.

Whether the action is plead as a breach of contract or a matter of negligence, however, is more than just a matter of style. In most jurisdictions, statute of limitations and statute of repose, (statutes which requires a plaintiff to bring its complaint against the defendant within a prescribed period of time) are significantly shorter for causes of actions sounding in tort than they are from those sounding contract. Accordingly, the Design Professionals need to be aware of certain contract provisions that could cause a simple negligence matter to morph into a breach of contract matter. For example, agreeing to "warrant" that your services will comply with applicable standard of care has defeated tort based statute of limitations defenses in certain jurisdictions. Even such indefinite language as the simple sentence after the recitation of the applicable standard of care: "the parties agree that no other warranties apply" has moved a matter from tort to contract and defeated a statute of limitations defense.

Another common theme of plaintiff's attorneys is to plead their case asserting that the plaintiff was an "intended third party beneficiary" to the contract between the Design Professional and its client. This scenario, most often, plays out where a Design Professional has developed a design on behalf of an owner which enters to a separate contract with a construction contractor to implement that design. If things go poorly during the implementation of that design, the contractor may attempt to assert that his productivity problems were the result of defects in the design and that the design documents prepared by the Design Professional were prepared for the benefit of the contractor. While these causes of action are seldom successful, they add to defense costs and can be pre-empted by careful attention to the designer / client agreement and more importantly by inserting certain provisions in the contractor / owner agreement.

3. Statutory Law

In addition to the duties the Design Professional agrees to undertake by contract, certain duties are imposed on it by virtue of statute. The state's power to license professional including engineers and geologists are exercised in order to protect the public. That license requires the Design Professional to perform its work in accordance with applicable regulations, the building code for example. Public officials and others are entitled to rely on the engineer's PE stamp as certification that it has performed its design in accordance with that code. In certain jurisdiction, a failure to comply with a code can be considered negligence per-se entitling the wronged or damaged party to an appropriate judgment against the Design Professional. In other jurisdictions, it is only evidence of negligence; however, the burden of proof has shifted from the plaintiff to the defendant. Additionally, the violations of statutes may give rise to disciplinary hearings that could result in a Design Professional's license being revoked, fines, and other penalties which would impact the Design Professionals ability to carry on its practice.

III ROLES AND RESPONSIBILITY

A. Introduction

As with any undertaking, assignment, or project, it is important to understand the roles and responsibilities of the various participants in that project. The primary participants for purposes of this discussion include the owner, the Design Professional and the construction contractor. While most of the participants have a general understanding of the respective roles, it is worthwhile to review the division and responsibilities now.

B. Owner's Role and Responsibility

In all cases, the owner takes on the responsibility for the overall planning and implementation of the project. That owner may be a public entity subject to public procurement regulations, which may constrain its flexibility in implementing the project. The owner might otherwise be a private entity such as a landowner, developer, or insurer with significantly greater flexibility to procure the services of designers and contractors. Successful implementation to the project requires that the owner develop an adequate budget based on realistic cost estimates, secure the funding, and establish reasonable contingencies. As with any project, money is the lifeblood of progress and the lack of funding can bring a project to a screeching halt at the most in opportune of times. The owner is also in a position to allocate risks amongst the various participants on the projects. This risk allocation if done in a fair and equitable manner commensurate with the expectations of the industry will tend to benefit the project in the long run. The owner must also select the designers and its construction contractors. While some type of qualification based selection process is the norm for Design Professionals, construction contractors for publicly procured projects are usually secured on the basis of lowest price. There is an emerging realization in the industry that this lowest price is not always the best value for the owner and many states are evolving towards some type of qualifications based selection of construction contractors as well as designers.

Finally, the owner is responsible for managing and overseeing the Design Professional's implementation of its scope of services. As good steward of the public funds, the owner must hold the designers and contractors accountable for the services they have undertaken to do by contract.

The owner must also appreciate the uncertainty and complexity of the geo-hazard project, be prepared to alter scope and modify contracts in response to changing circumstances on the project. The owner is the overall decision maker. Good decisions make good projects.

C. Designer's Role and Responsibility

The designer's role is to advance the owner's program from conceptual phase to the contractually stipulated level of completion. In most cases, the owner relies on the Design Professional to determine the level of effort required to implement the design phase of the project. The Design Professional is called upon to exercise its skill and judgment in determining whether a particular evaluation and investigation is complete, or whether additional resources must be expended to accomplish the owner's goals. By way of example, consider the Design Professional tasked with evaluating a slope stability situation for a known potential failure surface. Towards the end of the geotechnical investigation a deeper and potentially more consequential slip plane is detected below the depth of the previously performed borings. This new information requires an additional boring program to be conducted in order to evaluate this new potential failure surface. It is the designer's responsibility, no matter how unpleasant and disagreeable, to convince the owner of the need to fund this additional exploration program and the delay associated with this new exploration.

If the Design Professional's scope of services involves the mitigation of a potential Geo-hazard, then its role will be the development of contract documents for execution by a construction contractor. Towards this end, the Design Professional will develop drawings and specifications for use by the construction contractor in constructing the particular mitigation technique. The general trend in the industry, particularly with respect to specialty and geotechnical applications, is to allow contractors as much flexibility as possible in implementing its work. This is done by preferring performance specifications over methods specifications. The Design Professional, however, is responsible for determining when and where methods specifications are more appropriate based, for example, on the owner's disclosed intolerance for risk.

As a part of the construction process, construction contractors will be required to develop its means and methods of implementing the project by way of submittals and shop drawings. The Design Professional is responsible for reviewing these submittals to assure that the contractors approach to the project is compliant with the design intent. The shop drawing and submittal review process is meant to catch discrepancies in contractor means and methods that would lead to problems prior to their implementation in the field. Accordingly, timely review by the Design Professional is important.

D. Contractor's Role and Responsibility

Construction contractors, typically selected in a competitive bidding environment are required to review and properly interpret the contract documents and to prepare an appropriate bid with sufficient contingencies for implementing the work indicated in those contract documents at the stipulated price. Contractors bidding the project are required to visit the site, review and become familiar with all geotechnical documents and samples, and evaluate its proposed means and methods for applicability given the known and described site conditions. The contractor actually selected by the owner to perform the work must develop its procedures and prepare submittals detailing the selected means and methods in a manner that convinces the reviewing Design Professional that its approach is appropriate. Any uncertainty that the contractor has pertaining to the design documents requires that the construction contractor seek clarification from the Design Professional through the request for information process. Finally, the contractor is required to

provide the labor, equipment, materials, and management expertise necessary to execute the plans and specifications in accordance with the contractors approved procedures and the contractual requirements within the allotted time.

IV TYPES OF ENGAGEMENTS

There are four general categories of assignments that Design Professionals dealing with geo-hazards will find themselves engaged with: identification, evaluation, mitigation, and, emergency response. All the theories previously discussed can manifest themselves with any of these categories of assignment, however the most probable liability associated with each is discussed below.

A. Identification of Geo-hazards

Design Professionals engaged to identify the presences and probability of geo-hazards for a particular geographic region or attempting to delineate the extent of known geo-hazards have likely contracted with a public agency. This federal, state, or municipal agency is seeking to understand geo-hazards within the area in order to protect the general public through better planning, zoning controls, or condemnation of property. Alternately, insurers or groups of insurers may be looking to refine their risk exposures to losses paid out given the occurrence of a particular natural disaster event.

Clearly, property values rise and fall depending upon the determination that the property is or is not within the zone of influence of the particular hazards. For example, a lot located within the zone of coastally erosion may not be considered a buildable lot, or if buildable any structure may not be insurable resulting in a significant decrease in the value of that lot as compared to its buildable, insurable, neighbor. Before even considering undertaking such an assignment, the Design Professional should assess the capabilities and the mandates of the agency with which it will contract. While the policies and risk management strategies that will be derived from the geo-hazard identification are necessarily political / public policy matters, some basic understanding of the nature phenomenon and science behind the causative mechanisms should be included in the owner's organization.

Indeed, ASCE has recognized the need for engineering expertise within government organization in its Policy # 416. That policy recognizes that public interest is best served when the position within the agency are filled by those who understand the implications of engineering deficiencies on the life safety, health, and welfare of the public. An owner's organization without such expertise on board, risks making uninformed decisions or inappropriately relying on the Design Professional to steer public policy in a manner that the Design Professional has likely not contracted to do. The effective owner's organization possesses a vision of its overall objectives and has communicated those objectives to the general public and received a mandate to implement the strategies required to obtain that objective. The strategies to achieve the given objectives can of course be varied and inadvertently involve tradeoffs that affect different groups and individuals within the community to different degrees. The Design Professional's role should be to provide the expertise to assist the public owners in considering the options and strategies. While the Design Professional can provide the means to identify and characterize the hazard, it should not be placed in a position in which it is dictating final policy choices.

Delineating the boundary between an area susceptible to geo-hazard and one that is not, say for example, a landslide hazard, will involve obtaining and describing subsurface samples, laboratory testing, and engineering calculations. All three of these tasks can generally be accomplished in an objective manner subject to later review to demonstrate compliance with the standard of care. Any disagreement will likely focus on the more subjective aspects such as boring locations, samples selection, assumptions, and factors of safety. Yet small differences in these parameters may cause large tracks of land to be deemed undevelopable and thus severely injuring the economic interest of the landowner. The Design Professional will be well served to discuss and seek concurrence from its client on any variable capable of more or less conservative selection that will affect the outcome of the delineation. In this manner, ownership of that delineation becomes the clients and not the Design Professionals. This transfer of risk back to the public agency is more effectively done when that agency possesses the technical skill and capability to understand and evaluate the parameter selection. The flipside of this example would be the case where the Design Professional places a track of land outside the identified geo-hazard delineation, that track of land is developed and later experiences the catastrophic failure. In that case, property owner and their insurers will be looking to subjugate the Design Professionals for their losses.

B. Evaluation of Geo-hazards

Property owners or developers seeking to build upon land known to be subject to a particular geo-hazard may call upon Design Professionals to further evaluate that geo-hazard. The requirement for a Design Professional evaluation may be required by statute or in the absence of such statute simply the matter of due diligence required by a financial institution underwriting such development. Unlike the public owner motivated by maximizing the benefits and minimizing the liabilities to the communities as a whole, the developer's interest will be much more self-centered. The Design Professional needs to be on guard to prevent the developer's zeal for obtaining the lowest costs mitigation technique from influencing the Design Professional's objective selection of the appropriate that mitigation solution. In most cases, the Design Professional will be well served to report on a range of potential mitigation solutions evaluated, describing advantages and disadvantages of each and ruling out those unsuitable or inapplicable. This approach engages the developer in the selection of the particular technique to be employed.

Of particular concern to the Design Professional should be a developer's selection of a relatively low capital cost mitigation technique the success which depends upon rigorous future maintenance. The Design Professional will likely have no say in assuring that this future maintenance is performed. An unsuspecting purchaser of that property which later sustains damage in response to the occurrence of the geo-hazard event the Design Professional was meant to mitigate may seek to recover its damages from both the developer and the Design Professional. In the event the developer has disappeared, become insolvent, or otherwise judgment proof, the Design Professional may find itself alone facing allegations that its solution was inappropriate.

C. Mitigation of Geo-hazards

Mitigation of geo-hazards is the next logical step after evaluation. Here however, the Design Professional is, on behalf of its client is developing the specific design to treat the specific hazard. That Design Professional will most likely prepare drawings and specifications for use by its client in procuring a construction contractor to implement that design. This arrangement of parties has all the hallmarks of typical design-bid-build construction. The Design Professional is susceptible to

defective design allegations from both its client and in certain jurisdictions the construction contractor.

D. Emergency Response to Geo-hazards

In certain circumstances, the Design Professional maybe called upon to assist in the emergency response to a given catastrophe. This may be pursuant to a standing “on-call procurement” basis or a call in the middle of the night from an acquaintance seeking the Design Professionals expertise for a given situation. In a few jurisdictions, a Design Professional’s voluntary and gratuitous response to an emergency situation is subject to the protection of the so-called Good Samaritan statutes. The typical rules concerning Good Samaritans is that once you offer to help you can not disengage from that offer if in doing so the situation was left in a worse shape. The statutes are meant to encourage the involvement by offering a certain level of immunity but to discourage casual, non-committed assistance. The rationale being that the non-committed individual merely displaced the opportunity for a more committed person to lend assistance. The scope of protection offered by these statutes varies. On-call contract’s that contemplate responding to emergency sitytuations should recite the expectation of the services and limitations of the Design Professional’s ability to respond given the exigencies of the situation. The same standard of care will apply to the Design Professional’s actions and recommendations as applies to non-emergency cases. That standard will of course be shaped by the particular demands and pressures of the situation. If a Design Professional Firm is going to take on this type of assignment it needs to be sure that the authority to speak and make recommendations on behalf of the firm is vested in only the most capable of individuals. An inexperienced employee that gets caught up in the excitement of the situation, makes unwise decisions that are acted upon based on his apparent authority can create serious liability to the firm. For that reason the firm’s internal protocol for communicating and reacting to these types of contracts needs to be well thought out in advance of responding to your first emergency.

V DIFFERING SITE CONDITIONS

One can hardly discuss the Design Professional’s potential liability while attending to geo-hazards without a discussion of differing site conditions. The concept of a differing site condition is well ingrained in the community of geologists, geotechnical engineers, specialty and tunneling contractors throughout North America. It is however, a creature of contract and not common law. The reality of the common law is that if a person or entity undertakes to perform a contract in the absence of some specific contractual provision or representation related to ground conditions, that person or entity must fulfill its contractual obligations not withstanding unexpected difficulties with the ground.

In the early 1920’s this absolute requirement resulted in some very unfair and unjust results for contractors attempting to perform their contracts in the face of conditions that were acknowledged by all parties to be unforeseen and different from what the contractors and the owners believed to be present at the site. The courts began to carve out exceptions to the harsh realities of contract law such as theories of implied warranty and misrepresentation that afforded contractors some relief to their increase costs of performance. Simultaneously, the federal government began to recognize that strict adherence to its practice of contracting required contractors bidding that work to include significant contingencies for unforeseen conditions that might develop during construction. In the event that particular condition did not manifest itself during the course of the project, the contractor enjoyed a windfall because it managed to keep its contingency fund. Where the federal government was the biggest procurer of heavy civil and earth works projects, it recognized that in the long run, its

dollars would be better spent paying for the actual cost of the work and not the contingency on all projects when it was only required to fund the unforeseen work on a few project. From this recognition, the differing site condition clause was born into a federally procured construction contracts. That clause, in its present configuration provides that:

(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

(c) 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.

(d) 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.ⁱⁱ

The above DSC clause is from the Federal Procurement Regulations and is included in all Federal Construction contracts. Nearly every state has adopted the concept, (most in lock step with the federal clause) of a differing site condition and requires that it be inserted into public construction contracts. Similarly, best practices in private construction also provide that the contractors bid the work based on the information provided by the owner and that the contractor may rely on the representation provided by the owner in pricing its work. In the event conditions differ materially from those representations or indications in the contract documents, the contractor may request additional compensation to cover its additional costs. The often quoted maxim is that the "the owner owns the ground" and is responsible for additional costs if that ground differs from what the owner has told its contractors to expect.

This maxim is so ingrained in the industry that it will also provide a defense to the Design Professional in situations where it has carried out its obligations relying upon owner representations about the ground which turned out not to be accurate. The ability to utilize the differing site condition as a defense to an allegation of defective Design Professional performance will depend on how much freedom the Design Professional had to verify existing information and gather new and additional information about the project or site. The greater the Design Professionals right to rely on existing data provided by the owner, the better its chances with a differing site condition defense. To the contrary, if the Design Professional had unlimited budget and unlimited scope to characterize the site in a manner appropriate for its task and that characterization turned out to be inaccurate any

attempt by the Design Professional to invoke a differing site condition defense would be met with an allegation of defective service associated with the site investigation itself.

VI LEGAL DEFENSES

Faced with a claim in the form of a complaint or demand for arbitration or perhaps just a demand from the Design Professional's client in the form of a cost recovery initiative, the Design Professional will be called upon to defend its action. First and foremost, is the matter of a substantive defense. Simply put, what is it that the other side complains of that entitles it to compensation and how can that complaint be linked to deficient services on the part of the Design Professional? Recall that Design Professionals work product does not need to be perfect, or in some cases even correct. The Design Professional is only required to perform its services and deliver its contractually obligated work product in compliance with the professional standard of care. This comes as a surprise to many owner organizations faced with claims for defective design from their construction contractors in a design-bid-build situation. The so-called "Spearin Doctrine" holds that when an owner provides a construction contractor with explicit plans and specifications to perform a certain element of the work, so-called "method specifications", then the owner impliedly warrants that if the contractor follows those specifications, the intended product will result and be deemed satisfactory to the owner. In the event the specifications do not work as intended because they are somehow defective, the contractor is entitled to an equitable adjustment in its cost to rectify the defective element of the work. The Spearin Doctrine requires the owner to warrant that its contract documents be perfect and any error or omission in those documents entitles the contractor to an equitable adjustment. The owner will often turn to its Design Professional expecting indemnification for its payment to the contractor because the defect was caused by a defect in the Design Professionals services. The Design Professional, however, does not warrant that its services will be perfect; rather it is responsible for performing those services in accordance with the applicable standard of care. The law of negligence with respect to Design Professionals acknowledges that Design Professional is called upon to make judgments, and consider tradeoffs, and that errors will sometimes result. If the explanation of the defective design document indicates the Design Professional none-the-less complied with the standard of care, then no liability will attach to the Design Professional. In addition to this substantive defense, there are a number of legal defenses, which may serve to partially or completely preclude recovery against the Design Professional.

A. Economic Loss Doctrine

In the United States, like other common law jurisdiction three great bodies of law are recognized: property law, contract law, and the law of torts. The Economic Loss Doctrine serves to regulate recovery at the intersection of contract law and tort law. Where the law of contract seeks to enforce promises and agreements that have the characteristics of a contract, or alternately provide a remedy for a failure to perform a contractual obligation, the law of torts seeks to protect persons and their property from wrongful acts. According to the Economic Loss Doctrine, a party is precluded from recovering its purely economic losses from another party on the basis of negligence unless those parties are in a direct contractual relationship. In other words, a contractor in a design-bid-build scenario cannot recover its increased costs for performing work based on negligently prepared construction documents prepared by the Design Professional for the owner. The Economic Loss Doctrine's preemption of the contractors claim against the Design Professional forces that contractor to turn to the owner, with whom it is in contractual privity and seek recovery from that owner. In all

likelihood, the owner will then seek recovery from its Design Professional with whom it is in contractual privity.

B. Doctrine of Betterments

The Doctrine of Betterments provides that a party should not recover from another on the basis of negligence in such a way as to put that party in a better position than it would have been had the negligence had not occurred. This concept is best explained with an example. Suppose an architect designed a house for an owner who had explicitly requested a state-of-the-art computer controlled HVAC System. The architect completed its plans and specifications and the project was put out to bid. During construction, the owner discovered that the contractor had intended to put in a plain, run of the mill HVAC System compliant with the architect's specifications which failed to mention the state-of-the-art system. When the discrepancy was discovered, the contractor and owner negotiated a change order to cover the additional cost of the state-of-the-art system. The owner then attempted to recover that additional cost from its architect stating that it was negligence in not drafting specifications that provided for the state-of-the-art system. The architect acknowledged its error but replied that even if that error amounted to negligence, the owner could not recover its additional cost. The architect argued that had it included the sophisticated HVAC System in the first place, then the owner would have incurred these additional costs at that time. The architect argued and the court's agreed that the owner should not be allowed to recover a windfall from the architect, which would essentially amount to receiving the upgraded HVAC System for free.

This betterment rule protects Design Professionals in one form or another in nearly all jurisdictions. It would not however, preclude the owner from recovering the cost of rework, or the cost, for example, of removing and disposing of the wrong HVAC System had it been installed prior to detecting the error. Similarly, owners often acknowledge the concept of the betterment rule but state that because they had to procure the missing elements of the design through change orders as compared to the competitive bidding process that owner paid a premium price for the negligently omitted item of work.

C. Statute of Limitations / Statute of Repose

Statute of limitations and statute of repose, (if applicable) represent time periods within which that jurisdiction's legislation has deemed plaintiff's cause of action must be initiated. The purpose of the legislation is twofold. First, they provide a time period after which the potential defendant can rest easy and go on with its affairs without further concern or reservation about the potential plaintiff coming forward with a suit against it. Second, they serve to facilitate just and timely resolution of disputes by requiring the actions be commenced prior to the memories fading and testimony and evidence being lost. The statute of limitation provides that a potential plaintiff must bring a claim within a period of time, (typically six to eight years for breach of contract action and three to four years for professional negligent cause of action), from the time the plaintiff discovers or has reason to believe the cause of action exists. The statute of repose on the other hand provides that after a period of time - typically six to nine years from substantial completion of the project - the cause of action no longer exists and the potential plaintiff has waived its right to seek recovery completely.

VII CONCLUSIONS

Unlike the majority of building and development projects that Design Professionals become involved with geo-hazard projects present a unique set of potential liability risks. While the law that governs the Design Professional's duties and obligations to its clients and others is the same, the circumstances of performance and the consequences of misfeasance is significantly different. As a result the Design Professional must pay close attention to the terms and conditions of its contract and scope of services and consider the inclusion of special protections such as limitations of liability. Most importantly, the Design Professional should seek to keep its client fully engaged in the project in its role as decision maker by obtaining and documenting that clients, direction, input, and concurrence.

ⁱ Kevin v. Catalano, 286 Mass. 701, 718 (1982)

ⁱⁱ Federal Acquisition Rule – 48 C.F.R.52.236-2