

Almost Fifty Years of Case Histories:

What lessons have we learned?

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From the experience of the
past we derive instructive
lessons for the future.

John Quincy Adams

“quote”iancy



It's fine to celebrate success but it
is more important to heed the
lessons of failure.

Bill Gates

The best way to generate a failure on your job is to disregard the lessons to be learned from someone else's failures.

Dov Kaminetsky

*Design and Construction Failures –
Lessons from Forensic Investigations*

ASFE Case History

CASE HISTORY NO. 1

The Client: A well known development company.
The Project: A well known development in the area.
Role of ASFE Member: Perform a limited preliminary geotechnical investigation.

Background

Performed per a written contract per to test soil, check for included foundation estimate. The Member performed a limited preliminary geotechnical investigation.

The client's site was underlain by soft soil without problem.

Problems

A few years later, the client decided to build a new building on the site.

Case History

ASFE Professional Firm Practicing in the Geotechnical

The Client: A well known restaurant.

The Project: A well known restaurant in the area.

Role of the ASFE Member: Design a foundation for the grade that would hold the shop in place.

Background

The year was 1967. A well known restaurant in a major eastern city finally found what had been looking for a 2,000-sq-ft, 2,000-sq-ft restaurant site. The restaurant owner had come to the United States in the mid-1950s and established a small restaurant in the city. The restaurant had been prospering and, based on the success of the existing restaurant, he decided to build a larger facility. He had a property owned in the city, and he needed more space for the existing restaurant and the new restaurant. The property was owned by a local developer who had been looking for a site for a new restaurant. The property was owned by a local developer who had been looking for a site for a new restaurant.

ASFE Case History

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The Client: The owner of a 100,000-sq-ft, 100,000-sq-ft building.

The Project: The construction of a new building.

Assignment of the ASFE Member: I was a civil engineer and provided an opinion about the cause.

Background

The client wanted the Member Firm to evaluate what appeared to be a mold problem in a process space through the ground floor of a building, surrounding facility. The firm performed a mold evaluation in consultation and a geotechnical evaluation. Visual findings and the results of laboratory testing confirmed the presence of mold. The firm recommended a comprehensive remediation effort, the installation of perimeter drains outside the building, installation of a pump system, and repairs to the building. The overall cost was estimated at \$750,000. Upon learning that the client's representative was a member of the ASFE, the client's representative asked for an opinion about the original design team - geotechnical engineering, architectural, and structural engineering firm - and the general contractor.

The Member Firm's project manager reviewed the four-year-old report submitted by the original geotechnical engineer of record and an ASFE Member Firm and interviewed representatives of the firm and the client. The project manager learned that neither the architectural firm nor the geotechnical firm had asked the geotechnical engineer of record to review its instruments of professional service for appropriate application of geotechnical engineering findings and recommendations.

When the project went to bid, the project manager learned the lowest offer included the architect's estimate. This put the client in a precarious situation, because when the contractor proposed to "value engineer" the architect's plans and specifications, the client quickly agreed. Predictably, the contractor decided to use the lowest bid. The architect declined to the client.

proposed changes, however, and made that decision clear in a letter through which the architect ended his association with the project. But that didn't stop the owner, the project went to construction.

Problems and Outcomes

The contractor encountered groundwater during excavation. Because the client could not afford permanent pumps, pumps and associated plumbing, the contractor used temporary pumps to continuously pump the water out of the excavation. The contractor removed the temporary pumps once construction was complete.

Soon after initial occupancy, facility employees noticed moisture in the crawlspaces and notified the contractor. The contractor installed ten, one-foot-square vents in each crawlspace area. Several months later, facility employees saw up to two inches of standing water in the crawlspaces and filed on again called the contractor, but this time they received no response; the contractor had gone out of business.

The project manager who reviewed the original geotechnical engineering report concluded that the geotechnical engineer of record had no culpability for the water and mold problems. The report accurately represented groundwater occurrences and elevations and specifically warned about the risks of installing "basement" without "water-proofing" designs. The report included a copy of important information about four Geotechnical Engineering Report Published by ASFE/The Best Practice on Earth. The document relates a number of warnings, including one instructing the client to

specimens upon which the geotechnical engineer of record based its original study changed during again as a result of the contractor's value engineering. But the architect, the contractor, and the owner all failed to inform the geotechnical engineer of record.

Finally, the architect may have had some responsibility for the mold problems, but the Member Firm's project manager was not in a position to make that assessment; the client declined to have the Member Firm review the architect's plans and specifications. Besides, the architect's written objections to the contractor's proposed changes seemed to exclude the firm from negligence liability. The Member Firm believed in the contractor but out of business. As a result, the client had to bear the \$750,000 cost of repair and remediation on its own.

Lessons Learned

1. Dotting every "i" and crossing every "t" is essential.

In this instance, the geotechnical engineer of record seems to have been lucky. While its report may have been solid, it evidently performed little, if any, follow-up. Shoring in front of mold can quickly balloon into more claims and counter-claims, every firm involved in a project has a vested interest in doing what it can to prevent problems, and documenting its activity. An expert more interested in advocacy than integrity could easily have alleged that the geotechnical engineer of record was the only party vulnerable to a claim.



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CASE HISTORY LESSONS LEARNED

TOP 16 LESSONS LEARNED

- Agreement (Problems)
- Changes/Change Orders (Problems)
- Cheap Can Be Expensive
- Do It Right or Don't Do It at All
- Financial Fortitude is Essential
- Go/No-Go Evaluation
- If it Isn't in Writing, It Didn't Happen
- Make Limitations Clear
- Obtain Legal Guidance
- Protect Yourself; Don't Rely on Others
- Project Risk Is Inversely Proportional to Project Size and Complexity
- Residential Projects = Risks
- Respond Quickly to Problems
- Stay Involved in the Project
- Use of Confirmation-Dependent Recommendations
- Understand PLI

#5 Top Lesson Learned: Project Risk Is Inversely Proportional to Project Size and Complexity

Project Risk vs. Size and/or Complexity

Case History #1

- “For some practitioners, small projects provide no professional satisfaction, and, to some extent, they resent having to perform them.”
- Priorities: “The larger projects get more time and attention, especially when deadlines loom.”
- “Budget can be an issue, too, particularly when the small project becomes more complex than originally anticipated, and the client is unwilling to expand the scope.”

Project Risk vs. Size and/or Complexity

Case History #41

- “The Member Firm’s approach was casual in the extreme, because personnel had no respect for the assignment: no signed agreement; assumptions about unknown conditions; no effort to prepare others for their assignment; and so on.”
- “Wise geoprofessionals approach all projects as major, because all projects have the ability to become so.”

#5 Top Lesson Learned: Project Risk Is Inversely Proportional to Project Size and Complexity

#4 Top Lesson Learned: Protect Yourself; Don't Rely on Others

Protect Yourself; Don't Rely on Others.

Case History #13

Who's Got Your Back?

"The Member Firm relied on others – two architects – to cover its back. That's always a mistake, because no one can cover you as well as you can. Recognize, too, that other project participants may turn on you quickly should push come to shove; should it be a matter of 'your \$100,000 (or more) or mine.'"

Protect Yourself; Don't Rely on Others.

Case History #3

Relying on Others to Protect Your Interests Is Unwise

“‘Be your own best friend.’ Do not rely on others to protect your interests, be it through an exculpatory clause or some other vehicle. Proceed as though you are entirely on your own, because – in fact – that just may be the case.”

Protect Yourself; Don't Rely on Others.

Case History #40

Be Cautious about Reliance On Others' Materials or Recollections

- “If a client refuses to authorize the service required to do so, in order to save money, the contract should be amended to indicate that the client assumes responsibility for the accuracy of that information.”
- “...reports that are based on that information should identify where the information came from, that it may not be reliable, and that – if any of the information is incorrect – findings, conclusions, and recommendations may be inappropriate.”

Protect Yourself; Don't Rely on Others.

Case History #10

Review Construction Documents

- “Insist on reviewing appropriate construction documents, even if it is on your nickel?”
- “Geoprosessionals need to review others' plans and specifications to help ensure geotechnical-engineering findings and recommendations have been properly interpreted and applied.”

Protect Yourself; Don't Rely on Others.

Case History #27

Review Construction Documents

- The “field representatives should review the plans and specifications ... to verify that the plans and specifications they are working with are up-to-date.”
- “If he could have verified the [current] excavation’s dimensions to ensure it was the proper size,” he would have been able to “... prevent a molehill from growing into a mountain.”

Protect Yourself; Don't Rely on Others.

Case History #27

Because if You Don't...

- “The Member Firm did not commit an error; in fact, it did everything it was supposed to have done. Nonetheless, it still became embroiled in a dispute.”
- “The client’s and the Member Firm’s interests both would have been better served if the Member Firm’s field representative had been trained in appropriate on-site protocol” – to review the construction plans and specs.

#4 Top Lesson Learned: Protect Yourself; Don't Rely on Others.

#3 Top Lesson Learned: Respond Quickly to Problems

Respond Quickly to Problems

Case History #49

Don't Wait on Others

“Take a Lead Role: Don't wait for someone else to take the lead role and risk having your firm become a target. Take the lead role yourself, emphasizing that a team resolution offers a far better outcome than litigation, which – in cases like this – could take years and millions of dollars.”

Respond Quickly to Problems

Case History #28

Problems don't improve with age.

"The Firm's CEO demonstrated the value of fast and aggressive action. If the CEO had waited for the library board to make the next move, the Member Firm would have had to have retained an attorney and experts to fight a lawsuit that could have dragged on for years, with the library board suing the Member Firm, the Member Firm countersuing the architectural firm and the constructor, etc."

Respond Quickly to Problems

Case History #40

Know the Signs of Trouble Ahead

“‘Financing issues’ is one of the most common of all signals that trouble lies ahead. When funds are in short supply, no matter why, quality commonly takes a back seat to low first cost. Quality problems often lead to disputes, claims, and litigation.”

#3 Top Lesson Learned: Respond Quickly to Problems

#2 Top Lesson Learned: Perform a Go/No-Go Evaluation

Perform a Go/No-Go Evaluation

Case History #21

Effective Go/No-Go Analysis Is Crucial

Once you know something about the project and the project team, you can assess your role.

- What kind of project is it?
- Can your firm bring the requisite amount of expertise and experience to bear?

Perform a Go/No-Go Evaluation

Case History #6

Consider People in Go/No-Go Decisions

- "...when deciding whether or not to accept or compete for a commission, the prospective client's and other project participants' personnel should be considered, to the extent practically possible."
- "Ask the client who else will be involved in the project. Some people are troublemakers and, as in this case, trouble can quickly morph into multi-party disputes."

Perform a Go/No-Go Evaluation

Case History #6

Consider People in Go/No-Go Decisions

- “Is the client and the design team “known as quality-focused professionals?”
- “Do they typically rely on construction-materials engineering and testing (CoMET) services to maintain high levels of quality assurance?”

Perform a Go/No-Go Evaluation

Case History #6

Consider People in Go/No-Go Decisions

- “Do they have a reputation for filing lawsuits?”
- “Do client representatives push for indemnities and other provisions that would unfairly shift financial burdens to you?”

**Projects can be like strangers who ask to come into your house:
Will you let them in?**

Perform a Go/No-Go Evaluation

Case History #24

Consider Firm Participants in Go/No-Go Decisions

- "...does the Firm's project team" align with "the circumstances obviously demanded," or should the Firm "have turned the project down?"

It did neither and, as a consequence, what happened – in general – was predictable. (Those who want something in the worst way usually get it just that way.)

Perform a Go/No-Go Evaluation

Case History #22

Consider Your Go/No-Go Process

- Does it morph into a “stay/don’t-stay” analysis after the project begins.

“...so much time between major steps, follow-up would have showed that some type of intervention was needed, to learn about the progress being made and about steps the firm may have needed to take to protect itself.”

Perform a Go/No-Go Evaluation

Case History #25

Consider Your Go/No-Go Process

- Does it morph into a “stay/don’t-stay” analysis when:
 - “...what you hope will happen on a project doesn’t;” or
 - “when any new circumstance causes concern or alarm, ...understanding that all members of the design and construction team face jeopardy whenever problems arise, because they can lead to multiple complaints and cross-complaints that can take years to resolve.”

#2 Top Lesson Learned: Perform a Go/No-Go Evaluation

#1 Top Lesson Learned: If It Isn't in Writing, It Didn't Happen

We're not alone -



Healthcare



Psychology



FDA



HR



Finance



Law

International Council for Harmonisation (ICH) of Technical Requirements for Pharmaceuticals for Human Use

- If it's not written down, it didn't happen.
- If it's not documented, it doesn't exist.



If It Isn't in Writing, It Didn't Happen

Case History #40

- “Human memory is unreliable, which is why ‘If it isn’t in writing, it didn’t happen,’ is a time-honored loss-prevention dictum.”
- “As many GBA case histories illustrate, accurate and thorough documentation is often a geoprofessional’s best defense when a dispute arises. (Good documentation and documentation practices can actually prevent disputes from arising.)”

If It Isn't in Writing, It Didn't Happen

Case History #15

- “Accurate, comprehensive project documentation is a critical element of project management and its importance is heightened as the risks of the project increase.”
- “Documentation performs two important functions: To substantiate that the requirements of the project were fulfilled and to establish traceability of what was done, when it was done, and by whom.”
- “All firm personnel should realize this. Anyone who is unable to document what needs documentation should so inform a supervisor immediately, so alternative approaches can be put into motion.

If It Isn't in Writing, It Didn't Happen

Case History #13

Do Not Submit Oral Proposals

- “The days of the ‘handshake agreement’ are long gone!”
- Who remembers what happen yesterday, much less 5 years ago?

“The GBA-Member Firm was lucky. Hoping for luck all the time is no way to confront risk.”

If It Isn't in Writing, It Didn't Happen

Case History #21

A Written Agreement/Contract Is Essential

It identifies what both parties have agreed to.

- *Each written agreement should have six distinct elements:*
 - definitions of terms;
 - as complete a description of the project as possible, with the owner being responsible for identifying any changes that arise;

If It Isn't in Writing, It Didn't Happen

Case History #21

A Written Agreement/Contract Is Essential

- *Each written agreement should have six distinct elements:*
 - a scope of service that identifies what your firm will and will not do, the latter helping to defuse a client's claim of "You should have told us that" when, in fact, you had so informed the client, but the client wanted to spend less and take its chances;
 - a schedule indicating what will happen and when it will happen;

If It Isn't in Writing, It Didn't Happen

Case History #21

A Written Agreement/Contract Is Essential

- *Each written agreement should have six distinct elements:*
 - a fee schedule indicating how payment will be made and at what rates; and
 - general terms and conditions that identify various eventualities and how they will be handled.

If It Isn't in Writing, It Didn't Happen

Case History #41

Get it signed.

- “At the time that the Member Firm accepted the assignment, it did not know that the court probably would have deemed its proposal accepted, because both parties acted as though it had been accepted.”
- “As such, because the go-ahead was given orally, the Member Firm had no way of proving the go-ahead had been given at all.”

If It Isn't in Writing, It Didn't Happen

Case History #14

Document all project communications.

“All communications related to a project need to be put into writing, preferably to memorialize discussions and decisions. The tools available to help remind us to do that are readily available and should be used. There should be no room for ‘I forgot’.”

If It Isn't in Writing, It Didn't Happen

Case History #20

Document all project communications.

“Although the project manager was somewhat effective with respect to documentation, he was not as effective as he could and should have been. Any project brings with it the potential for problems. Effective documentation is needed to help the Member Firm’s expert in supporting the Member Firm’s position and avoid a trial of fact – a judge or jury – having to decide who said what. Memories often become selective as time passes and positions polarize.”

If It Isn't in Writing, It Didn't Happen

Case Histories #18 and #40

Document meeting minutes.

- “The availability of the Member Firm’s notes from the design conference strengthened its position; had minutes or a memorandum been issued and included in the county’s files, the county’s suit may not have been brought against the Member Firm.”
- “If no other participant records meeting minutes, you should, and then distribute them to other participants to help verify their accuracy and to gain other meeting participants’ concurrence.”

If It Isn't in Writing, It Didn't Happen

Case Histories #47

Document phone conversations.

“...a project manager’s telephone contact with a client representative is almost always desirable, as long as the project manager issues a written memorialization that confirms that the call occurred and sets forth the project manager’s understanding of what was said, by whom, when and where.”

If It Isn't in Writing, It Didn't Happen

Case History #3

Document recommendations and suggestions.

- “Confirm in writing recommendations and suggestions relative to alterations of a subsurface-exploration program.”
- “Problems, time, and the potential for litigation often affect memories.”

If It Isn't in Writing, It Didn't Happen

Case History #8

Document warnings.

“Even assuming the Member Firm’s project manager mentioned something about the pavement’s inability to withstand heavy wheel loads, the construction superintendent could have said that was not the case, even if he remembered that it was. And, realistically, the court would have expected that the project manager, as a professional, was duty-bound to put the warning in writing.”

If It Isn't in Writing, It Didn't Happen

Case History #38

Document...

- “More than four years elapsed between completion of the project and the filing of a claim. This is not particularly unusual...”
- “...this means documentation of just about everything except things that are genuinely trivial.”

If It Isn't in Writing, It Didn't Happen

Case History #10

Remember: Document. Document. Document!

- “Every project is a source of potential litigation. Documentation, including e-mailed memorializations of conversations, helps prevent misunderstandings to begin with and can help reveal what really happened, especially when complex projects, like this one, evolve.”
- “Insist on reviewing appropriate construction documents, even if it is on your nickel. It's better to prevent a problem than it is to spend \$100,000 or more to prove you were right all along.”

#1 Top Lesson Learned: If It Isn't in Writing, It Didn't Happen

**So, after almost fifty years of
GBA Case Histories:
What lessons have you
learned?**