

GBA Case Histories Relevant to CoMET

CASE HISTORY 4

A large structure was to be supported by caissons. The Member Firm recommended that steel casing be installed in the caissons where water-bearing silt was encountered above the hardpan. The project was designed for the casing to be left in place but the contractor said that pulling and reusing the casing would save considerable costs. Representatives from the owner, architect, structural engineer, Member Firm and construction manager discussed the contractor's procedure for removing the steel casing and determined they could address the associated risk by careful observation during construction. Defects were detected in one caisson during construction and because of that, all 32 caissons were cored. Contaminated concrete was found in eleven. The cost to repair the 11 caissons was approximately \$150,000.00.

CASE HISTORY 9

The GBA Member Firm was hired by a local architectural engineering firm to perform a subsurface exploration and provide construction observations and materials testing services for a 4-story bank. Due to the varying existing elevations, the amount of fill required to achieve the final design grades ranged from 1 to 13 feet. An aggressive construction schedule increased the risk of problems developing. A row of footings in the area of the deepest fill settled 1 to 3 inches and the Member Firm was partially blamed.

CASE HISTORY 16

A state-owned community college planned to construct a campus on a 135-acre site. The Member Firm drilled 150 borings, excavated test pits and conducted seismic surveys at the site, and reported its findings to the architect. The architect estimated a total of 81,000 cubic yards of rock excavation would be required and included this quantity in the contract documents. The Member Firm requested that it be retained to provide construction observations but the state declined, and instead used their own personnel to provide those services. During construction, the amount of rock excavation increased from the estimated 81,000 to 190,000 cubic yards mainly due to the lack of geotechnical experience of the state-assigned engineer. A lawsuit was filed by the contractor, and the Member Firm was among those named.

CASE HISTORY 21

A single-story elementary school was to be constructed. The subsurface exploration indicated that as much as 6 feet of cut and fill was required. The report warned of the potential for changed conditions between boring locations, including either erratic soil composition or variations in the depth to bedrock. The report contained clearly worded recommendations for construction testing services, but those recommendations were ignored by the project architect. When the *contractor and architect* (incorrectly) determined that [unbudgeted] blasting would be required to remove what they judged to be bedrock, but which was really a matrix of soil and boulders, the geotechnical consultant was blamed for the increased earthwork cost.

CASE HISTORY 24

A mining company planned to construct a tieback retaining wall to create a platform for new mining operations on the side of a steep slope. The wall was much less costly than the alternate approach which involved more extensive cut and fill, but still required the placement of 25 to 50 ft. of earth fill. The geotechnical engineer stated it was essential that the fill be properly compacted, to avoid introducing settlement-related stress in the innovative, and somewhat risky, high-strength tieback bar anchors. Initially, the fill was placed with care and properly compacted, but as fill placement continued, the field technician was asked to observe and test other areas of the project, which reduced time spent on the wall project. The technician was later asked to further reduce time on-site to only once a week, in order to reduce costs. The technician's time was then further reduced to an "on-call" status which essentially eliminated future testing. Soon after wall completion, blasting associated with mining activities caused rocks and debris to roll downslope, damaging the ties. Other anchors were left untensioned. An as-built report was written by the engineer, but it contained no warning of consequences if the anchors were not properly repaired. The wall failed the following winter because of fill settlement and freezing of water trapped behind the wall. Ultimately, the engineer paid a high price to settle the dispute that followed.

CASE HISTORY 27

A 12,000 sq ft addition was to be constructed onto an existing educational building. The subsurface exploration encountered uncompacted fill throughout the planned addition's footprint, and the report recommended its undercut and replacement to 10 feet outside the planned building lines. The contractor staked the area to be undercut and removed the old fill, exposing a stable subgrade. The undercut was backfilled with properly compacted and tested soil that looked virtually identical to the fill that had been removed. Construction of footings was completed soon after, with no involvement by the geotechnical engineer. A few weeks later, one wall began to settle, and the contractor immediately blamed the engineer. In a meeting with the contractor and architect, it was learned that that building lines had been extended 10 ft beyond those shown on the original plans. The geotechnical engineer elected to conduct his own evaluation of soil conditions by drilling borings inside and outside the building lines. The exploration determined that fill inside the building was stable, but outside was not compacted. It seemed reasonable to conclude that some footings had been constructed to bear on old, uncompacted fill, probably due to layout error, but this could not be proven. To avoid likely litigation, the engineer worked out an agreement with the contractor to share the costs of underpinning the affected areas of the addition.

CASE HISTORY 28

A municipality planned to construct a new library. The geotechnical engineer conducted a subsurface exploration, and determined that the site contained old, rubble fill. The engineer recommended that the fill be undercut and replaced, that the excavation extend 10 ft outside the building perimeter, and that side slopes be laid back at 1:1. Based on experience gained from Case History 27, they also recommended that the contractor be required to survey the building footprint and install batter boards for construction control. Bid documents required the contractor to retain the geotechnical engineer for field testing, and that the engineer would report to the Architect. Construction began and the contractor refused to install the specified survey control, which the engineer documented in writing. Two months later, the contractor reported they had encountered concrete obstructions, supposedly seeking a change order. The engineer directed the contractor to

stake out the building as specified, which was done. It soon became apparent that the contractor had made a 10 ft error in staking. It was also learned that the Architect had told the contractor that the specified 1:1 lay-back was not necessary, which resulted in some backfill at the edges being under-compacted. In a library Board meeting, the Architect placed full responsibility on the geotechnical engineer, because they had professional liability insurance which would pay for the extra work required. The geotechnical engineer arranged a meeting with the Architect and Board chair, clearly stated that they would defend any suit brought against them, and emphasized that the contractor had ignored the survey specifications and had staked the building improperly. No action was later taken against the engineer.

[CASE HISTORY 29](#)

This is a rather complicated lesson that involves the installation of a 15 ft high and 25 ft wide corrugated metal culvert pipe at a coal fired power plant. Involved parties included the manufacturer of the pipe; the in-house engineer they assigned to monitor its placement and backfilling; the overall project's design engineer; and the Member Firm geotechnical consultant who provided density testing (only) for the pipe manufacturer, as directed by the design engineer. The manufacturer provided the specifications for backfill placement below, alongside, and above the pipe. The Member Firm was not asked to comment on the design, plans, or specifications. Earth fill placement for a road crossing had to be expedited to provide access to other construction areas on site. When fill placement was completed in this area, the pipe experienced almost 2 ft of deflection. About \$65,000 (in 1980 dollars) was spent to excavate and reinstall the affected section of pipe. The manufacturer then proceeded to sue to Member Firm for the entire cost of the repairs. Ultimately the Member Firm prevailed, and was awarded their testing fees, but the judge denied their request for reimbursement of defense costs, which were about 5 times greater than their testing fees. This case history provides good insight into the need to keep the "big picture" in mind, both technically and contractually, when taking on a project.

[CASE HISTORY 33](#)

This story involves the construction of a multi-building educational facility. The Member Firm submitted a proposal to a large, out-of-town architectural firm and was engaged to provide geotechnical exploration and construction observation and testing services. The project site had steep topography which included a 70 ft deep canyon that bisected the property. The architectural design ignored the geotechnical characteristics, and located the parking lot in an area of favorable geologic conditions and placed the buildings in the area of deepest fill. The member firm recommended a high degree of fill compaction, and the installation of settlement monitors to determine when consolidation of the deep fill ceased. The excavator that was contracted to complete the sitework did not have a particularly good reputation. The timing of the project happened to coincide with a very busy work schedule, and the Member Firm's most experienced (and trustworthy) field technicians were on critical assignments. As a result, the Firm had to assign a technician who had several years of experience, but who had only been employed by them for six months. They assigned one of their senior technicians to initially visit the site on an almost daily basis and check the work of the newer employee. Since earth fill placement seemed to be going well, the frequency of visits was reduced to once or twice a week. The structures were built, and eventually, some areas experienced about six inches of settlement. After the Member Firm was named in a lawsuit, follow-up testing and inquiry of involved parties determined that the newly-hired technician had been "paid off" by the excavator and promised a "high-paying" job as

soon as this one was finished. Only the good test results were shown to the senior technician who visited the jobsite. The Member Firm's professional liability carrier eventually settled for the \$500,000 limit of the Firm's E&O policy.

CASE HISTORY 41

Ten two-story apartment buildings were to be developed. A subsurface exploration performed for the residential developer encountered old fill material over a material that caused auger refusal on what was assumed to be terrace deposits by the CoMET firm's geotechnical engineer. During site grading, the CoMET firm assigned an inexperienced field technician to observe removal of old fill material and evaluate the native soils prior to structural fill placement. Six years later, additional grading was performed for two more buildings in the area initially graded. The CoMET firm was not available and referred the developer to another CoMET firm that monitored the additional site grading, but did not review the previous reports. Four years later, the two additional buildings experienced excessive settlement due to consolidation of soft native soils not properly identified during the subsurface exploration or during initial site grading. The CoMET firm was blamed and experienced significant losses through a lengthy legal battle.

CASE HISTORY 56

A 250-lot single-family home residential subdivision was to be developed. A subsurface exploration performed for the developer recommended shallow pier foundation support due to the presence of expansive soils, and included extensive grading specifications that required off-site disposal of surface organics. The grading contractor started earthwork before the CoMET technician arrived and disposed of surface organics in large trenches that were covered with soil. The trenches were inadvertently located by the contractor in planned in house footprints. The technician did not verify that the surface organics had been disposed off-site as specified. Grading continued and the CoMET firm sent reports stating that grading had been performed in compliance with specifications. Organic soils were discovered during foundation installation, and the CoMET firm was partially blamed, and participated in paying for corrective repairs.

CASE HISTORY 62

The Member Firm submitted a proposal to a general contractor which won a contract to construct a make-up water lake for an electric utility. The firm proposed to provide earthwork testing during construction and engineering consultation and testing supervision on an as-needed basis. The contractor only selected the field testing services and insisted on use of its own contract which included a very broad indemnification clause. The contract was accepted. Because of wet weather, the contractor was behind schedule and he began working two ten-hour shifts. The engineer assumed that an additional technician would be authorized, but the contractor directed the engineer to increase the number of tests during one shift to meet the specified number of tests per thousand cubic yards of fill placed. The project was stopped for several months during the winter. Due to a dispute about monthly charges for field equipment during the shutdown, the engineer terminated their involvement with the project. The contractor retained another firm for construction testing based on an oral agreement. The earth dam cracked while the lake was being filled, creating stability failures, and the lake was immediately drained. Multiple claims and counterclaims were filed involving the contractor, the owner, the dam designer, both testing firms and some of the insurers. Many of the claims were dismissed for various reasons, but the Member Firm was

obligated to participate in the suit due to the indemnity provision, facing defense costs in excess of \$1 million. The contractor dismissed the suit against the Member Firm, primarily because they threatened to testify that the contractor did not follow specified procedures during construction. The general contractor won the litigation, the owner was required to pay all amounts not previously paid, and the contractor incurred no liability for failure of the dam.

CASE HISTORY 63

The engineer was retained by a regional drainage authority to investigate and determine the cause of settlement around tunnel shafts and develop solutions, take bids, observe implementation of repairs, and otherwise help the client resolve the situation. The firm recommended several alternative solutions. The client and the engineer decided to inject cement-based grout to fill voids in the backfill and provide better support for the pavement. The engineer developed plans, specifications, and bid documents. The lowest bid came from a company located outside the state, and it was only about $\frac{2}{3}$ of the engineer's estimate. Nevertheless, the contract was awarded to the low bidder and the engineer assigned personnel. The engineer's field representative was a new hire, and was responsible for observing the contractor's work and recording grout takes. The contractor notified all local utility companies except the sewer authority. Grouting operations began, but the engineer's field representative noted large grout takes at several locations. However, the field representative and the project engineer did not notify the experienced project manager about the situation.

Several weeks later, there were reports of numerous sewer line back-ups causing significant damage in nearby homes. It was determined that several sewer lines were partially or completely filled with grout. The blockages were fixed using a variety of methods at an appreciable cost. The engineer determined that the sewer authority had not been contacted, the engineer's field representative had directed the contractor where to drill, and the field representative instructed the contractor to continue grouting even when the contractor expressed concern about large grout takes. The engineer's project manager met with the client to provide assurance that his firm would resolve the issue with the contractor. Due to liability exposure for both the engineer and the contractor, the engineer and the contractor ultimately agreed to split the cost. The client was pleased that the matter was settled quickly and without the involvement of lawyers. The client retained the firm on future projects.

CASE HISTORY 67

The geotechnical investigation for a 100-acre industrial park included numerous test borings and considerable laboratory testing, the results of which indicated highly plastic soils which were susceptible to shrink/swell activity from changes in moisture content. Several months after the report was completed, the engineer was retained for construction observation and testing for a single story speculative building, but only the shell of the building was completed. The slab was to be completed later, with the design dependent upon the specific use. Three years later, the building shell was purchased, and a general contractor (GC) was retained to complete the construction. By that time, significant tension cracks several feet deep had developed in the slab subgrade. The GC hired the original engineer via written contract to conduct a plate load test to determine the subgrade modulus for slab design. The testing was completed and a report was issued concluding that the cracks were caused by desiccation and recommending that the soil be re-worked and re-compacted (with no depth provided). The GC then hired the engineer via an oral

agreement to observe the re-conditioning of the soils to a depth of only two feet and observe construction of the floor slab. About one year after occupancy, the floors were observed to be heaving unevenly, and the occupant hired his own geotechnical firm which concluded that the soils were swelling due to moisture changes. Portions of the slab and subgrade soil were removed and replaced, and the GC demanded that the original engineer pay for the reconstruction costs and other damages. The engineer refused, and the primary legal argument which ensued involved the limitation of liability in the engineer's written agreement and its applicability to the oral agreement which was made with the GC.

CASE HISTORY 75

A state OSHA inspector issued a number of citations to the Member Firm whose personnel were inspecting caisson construction. Most of the citations were for various tasks that simply had to be done if caissons were to be inspected. The OSHA personnel's attitude was that caisson inspection was inherently dangerous and should not be done. The Member Firm learned the importance of dealing with OSHA by engaging an attorney who understands the issues.

CASE HISTORY 76

"No good deed goes unpunished" was the lesson learned by this Member Firm, whose project manager did a favor for a friend. When the friend failed to follow the project manager's recommendations, the friend forgot that the project manager had ever made any recommendations and filed suit. During discovery, a small note that should have been originally purged from the file gave the plaintiff the right to recover treble damages, the client said. "We'll win this in court" the Member Firm said". It didn't.

CASE HISTORY 80

Knowing how "tricky" serving a housing developer can be, this GBA member took pains in contract formation, dotting every "I" and crossing every "T". The firm was also pretty effective when it came to L's having its client accept a \$25,000 limitation of liability (LOL) provision. The contract also detailed the scope of services to prepare a comprehensive geotechnical engineering report, but did not include any construction-phase CoMET field services. The soils were soft in a number of areas, as the member's report pointed out, and the client wanted some additional help. "Send an engineer", came the request, and the member obliged. The member's engineer visited the site and prepared a report with recommendations. The client said it followed the recommendations, but problems occurred nonetheless. And that's why the client sued, saying the problems should not have happened. The member firm tried reason, but that didn't work. It then said that the LOL applied. The client disagreed, saying that the site visit comprised a separate project based on an oral agreement without an LOL. A trial judge agreed with the member, but the developer appealed and won.

CASE HISTORY 81

After the Member Firm submitted a written Agreement outlining the scope and fee to a new precast supplier client, the supplier verbally accepted the Agreement. The Member Firm met with the client to create a custom test data sheet. A field representative was assigned to provide testing during batching and casting of the precast elements. After the Member firm's staff engineer reviewed the data, the data reports were mailed to the client. After a few visits for testing, the member firm received a phone call from an upset plant manager, stating that the air content reported was below specification, and that the CoMET field technician did not alert them of the low air test while at the site. A meeting was held to discuss changes to reporting protocol, including immediate oral notification of failing tests. Later, after the Member Firm called about a late invoice, the client said they were refusing to pay because some of the precast elements had been rejected, and they were not notified promptly about the failing tests. At project completion, the client sent a letter demanding \$200,000 from the Member Firm for the cost of refabricating the elements. The Member Firm also learned later in the project that the precast elements were for a nuclear power plant, requiring the strict specifications.

CASE HISTORY 85

After providing a geotechnical study for a new developer client on a residential subdivision project, the Member Firm was asked to submit a proposal for CoMET services. The services were to include field moisture and density testing during backfilling of utility lines. Excavated soils were used as backfill. The project civil engineer's resident, who was not on site full time, scheduled the "on-call" testing. All tests and re-tests met project specifications. Ten months after completion, three areas exhibited settlement along the utility routes. The developer, civil engineer, and contractor looked to the member firm to determine the cause, method of repair, and provide reimbursement for the repair. The Member Firm's quick response and firm communication with the contractor helped to avoid a claim.

CASE HISTORY 87

The Member Firm provided a geotechnical study for a long-time grocery store client, for a new grocery store and replacement of the parking lot at a remote site. The Member Firm had not worked with the contractors before. Considering the owner's desire to keep costs low, the Member Firm, did not recommend compete reconstruction of the parking lot, which would have been the best approach. Rather, several less costly options were offered. The contractor selected the least cost options. The Member Firm issued a letter indicating the higher risks associated with the less expensive options, which including re-use of existing materials. The Member Firm was hired by the owner to provide CoMET services on the new parking lot at a schedule and frequency controlled by the contractor. An ineffective submittal process and reduced level of observations and testing led to the use of the wrong materials and ultimately, the failure of the parking lot. Repairs to the parking lot cost \$100,000 and the owner arranged for mediation to determine who owed what to whom. The Member Firm went into the mediation believing they would come out nearly whole. However, they came out of mediation sharing \$20,000 of the repair costs on top of absorbing the \$50,000 value of its post-failure forensic and CoMET services.

[CASE HISTORY 89](#)

A national HMO health care provider planned to construct a new, 3 story medical building and two adjacent parking lots. The Member Firm was asked by the HMO to prepare a proposal for a geotechnical study, and eventually, for CoMET services. The Agreement included a \$50,000 LOL, and was signed by the client's engineer. When construction began, communication and cooperation between the Member Firm and the arrogant, demanding Architect did not start well, and became poorer when the Member Firm's experienced field technician used reasonable judgement on-site which did not always explicitly follow the plans and specifications which in many cases ignored the Member Firm's written recommendations. They were directed to stop making field decisions and to follow plans and specifications to the letter. One of the Member Firm's geotechnical recommendations had been to include a comprehensive system of underdrains in paved areas, but that recommendation had been ignored by the owner and the architect. The first winter after construction was complete, the pavement experienced severe frost heaving, which affected about 25% of the pavement surface. The owner engaged a civil engineer to determine the cause of the distress. The engineer proved to be a "hired gun", who recommended that the entire pavement be removed and replaced at a cost of more than \$500,000. The dispute proceeded to mediation, and the mediator tried to convince the Member Firm to contribute at least \$100,000 to the repairs. For Lessons Learned, read the entire Case History.

[Case History 93](#)

A geotechnical engineer was engaged to serve as the owner's representative during earthwork operations on a five-city-block cluster of high-profile, mixed-use, high-rise buildings. The scope of services included review of the shoring system design and observations of the design's execution (i.e. limited construction materials engineering and testing [CoMET] services). The foundation subcontractor claimed a changed condition when the project's soldier-pile and tied-back anchor system began to collapse. The geotechnical engineer suggested a study to learn why the collapse was occurring. When the developer refused, the geotechnical engineer demonstrated "financial fortitude" and undertook the investigation on his own. The engineer learned that the problems occurred because the subcontractor modified the composition of the lean-mix concrete used for backfill, resulting in the general contractor and the foundation subcontractor paying the extra cost; close to \$5 million. The developer insisted that the general contractor also pay for the engineer's study.

[Case History 95](#)

A rack-system supplier retained the GBA-Member construction materials engineering and testing (CoMET) firm to test the welds of a preproduction rack assembly. The welds failed to meet specs and the Member Firm reported that result. The client paid the less-than-\$1,000 fee and shortly thereafter retained the firm to test a welder's qualifications. Three years later, the GBA-Member Firm was sued because of its involvement in the \$100-million collapse of an automatic rack-storage system. Making matters worse, the collapse killed an employee of the warehouse where the system was installed. A representative of the client lied by saying the Member Firm had approved the qualifications of the welder whose work was faulty. The Member Firm's documentation, which could have been better, was at least good enough to permit a comprehensive investigation whose findings ultimately helped get the firm off the proverbial hook, but at a cost exceeding \$25,000 and many sleepless nights.

[Case History 96](#)

A Member Firm made the mistake of agreeing to work for both the owner (a school board) and its retained architect. Complicating matters, the architect refused to sign the Member Firm's contract and the Member Firm refused to sign the architect's. The strained communications grew even tenser when the contractor and excavating subcontractor apparently did not understand the specs. The Member Firm tried to help out, but – by doing so – wound up giving the contractor specific excavating instructions relative to rock excavation, generating even more misunderstanding and liability. Many of the difficulties could have been dealt with quickly if only the Member Firm had been retained to provide construction materials engineering and testing (CoMET) services, but the effort to “sell” that service proved too little too late. Ultimately, \$1,175,000 changed hands, with \$800,000 going to fund the cost of litigation.

[Case History 97](#)

A construction-management company retained the GBA-Member Firm to perform a geotechnical engineering study for a simple structure that involved somewhat complex subsurface issues. The Member Firm later submitted a proposal to provide construction materials engineering and testing (CoMET) services, but the client instead asked the Member Firm to sign a purchase order that included several troublesome conditions. The Member Firm refused, but – having worked with the client before – agreed to move forward. Serious problems arose, but none was caused by the Member Firm. During auger cast pile installation, a sewer lateral not previously identified by the surveyor who had been retained by the construction-management company was penetrated. The Member Firm was named in the suit nonetheless and agreed to participate in mediation. The firm's CEO argued that the firm was blameless and so owed nothing. The owner's attorneys said they didn't care; the firm would have to pay something. It did, and because it was accommodating, it retained the good will of both the client and the owner.

[Case History 98](#)

The GBA-Member Firm signed an owner-drafted contract, agreeing to provide construction materials engineering and testing (CoMET) services “as needed,” a phrase neither party defined. Because of significant grade changes, the project required construction of three retaining walls. The member firm provided relatively few CoMET services on one of these walls, because the Member Firm's senior field representative believed the wall was far less important than the other two. A few years later the wall began to fail, principally because the contractor had mixed clay with the specified backfill material. The owner repaired the wall and then sued the excavator, construction manager, and Member Firm to recover its costs. In interrogatories, the contractor stated that “if the backfill approved by [the GBA-Member Firm] did not meet project specifications, it could be inferred that [the GBA-Member Firm] did not properly perform its duties.” The GBA-Member Firm argued that the excavation contractor was responsible for backfilling the wall as specified, whether or not the Member Firm performed observation and testing. All parties realized that establishing cause would be difficult, so they agreed to mediate. Ultimately, the owner reduced the amount of their claim by about one-half, the excavation contractor paid \$75,000, and the Member Firm paid \$15,000.

[Case History 99](#)

The GBA-Member Firm agreed to provide geotechnical engineering and construction materials engineering and testing (CoMET) services for a contractor hired to construct a two-story office building on a 60-foot fill slope. “The owner can’t afford to build this,” the contractor said when reviewing the Member Firm’s recommendations.” The firm agreed to eliminate a geogrid it had recommended and to use spread foundations instead of caissons, given the contractor’s promise to lower the pad elevation by 10 feet and locate the building an additional 20 feet back from the top of the slope. Required by the local government to review and stamp the final grading plan, the Member Firm did so quickly, at its client’s request, because the project was behind schedule. Unfortunately, the Member Firm failed to note that the contractor did not keep its promise about lowering the pad elevation and the building’s proximity to the top of the slope. Soon after construction, during which the firm provided part-time CoMET services at the contractor’s request, the owner became concerned about stability issues and spent more than \$1 million on repairs and then sued the Member Firm to recover its costs. The Member Firm’s experts established that global stability was not an issue and the stability measures the owner took were ineffective and unnecessary. Nonetheless, even though allowing that placement of the building near the edge of the slope had no real effect on stability, it was a mistake and that impelled the Member Firm to settle during trial. Its overall expense exceeded \$2.25 million. Haste makes waste.

[Case History 100](#)

A civil engineer in 1992 contacted the GBA-Member Firm asking if it could provide pile-driving criteria for a hotel to be located on a site the firm had studied three years before, for a different owner. The economy was in a down cycle, encouraging the firm’s engineering-department manager – an experienced, licensed professional – to enter into an oral agreement for a \$100 service. Two days later, the manager issued pile-driving criteria, then later helped the civil engineer evaluate blow counts and review driving logs (recorded by others). The Member Firm never visited the site nor provided construction materials engineering and testing (CoMET) services during construction. The civil engineer left town when his work was done, and the Member Firm wrote off its small fee as bad debt. It learned how bad several years later when a flood washed away a portion of the hotel’s foundation, causing serious cracking. The hotel owner retained experts who reported that the hotel was settling differentially because of various problems with the piles. The hotel owner sued the pile-driving contractor, the architect, the civil engineer, and the Member Firm to recover the \$2 million cost of repairs. The pile-driving contractor settled. The architect and the civil engineer had no significant assets and no professional liability insurance. That left the GBA-Member Firm which, try as it might, could not locate a reputable expert to declare it had met the standard of care. At the recommendation of its professional liability insurer, the firm settled for a seven-figure sum on a project in which the lone invoice (\$100) was never paid.

[Case History 101](#)

When a GBA-Member Firm realized it had committed a serious error while providing construction materials engineering and testing (CoMET) services for a new hospital building, it knew it was in trouble. Inconsistencies in testing of grout placed beneath column base plates, relative to the requirements of ASTM C109 and C1107, were identified; however the impact of those inconsistencies could not easily be determined without additional laboratory and in-situ testing. The project, a 738,000-square-foot hospital, was the key element of a high-profile, \$600-million

project and the constructor-in-charge faced significant penalties if it failed to complete its work by the targeted date. The errors made by the CoMET firm were likely to cause a significant delay that would result in major penalty payments, plus a serious cost overrun, all of which the GBA-member CoMET firm feared it would have to pay for. Applying what it had learned from GBA, the firm reported the issue and developed a comprehensive and aggressive approach to solving the problem. By doing so, it maintained its relationship with the involved parties and its reputation for excellence.