

Holding the Hand of General Contractors for Fun and Profit

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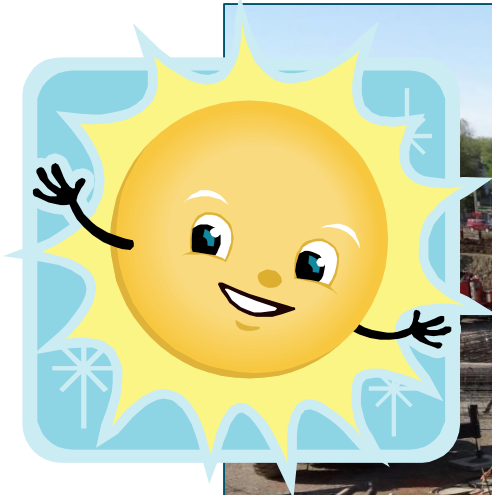


Committing to Continuous Improvement...



... Put a Silver Lining on a Cloud

The Best Part of My Job!



Working Directly for the General Contractor



General-contractor-oriented geotechnical peer reviews

Geotechnical engineering and support services during construction

Why Do They Pay for This?



Risk =  Profit

- Mitigation of problems before construction starts
- Better preparation for questions, schedule revisions, legal claims, and change orders during construction
- Leverage against unresponsive engineers

Problem and Opportunity
Solution
Value
Risks
Business Aspects

The Problem and Opportunity is Commoditization



Contractors are sometimes blamed for bad engineering.



What is the Solution?



Add a geotechnical engineer to the contractors' team

Phase 1: Geotechnical Peer Review (GPR) for the General Contractor prior to start of construction (or at their proposal time).

Phase 2: Support the contractor and stay on their team throughout the project.

Which Contractors?

- Best opportunity is with large general contractors. #10 to #100 on the ENR “Top 400” list.
- Many of the very largest general contractors have in-house geotechnical engineers.
- Smaller contractors are not as financially attractive.

Which Projects?

Where geotechnical services have been experienced commoditization.

Medium sized projects.

- New schools or hospitals.
- Multi-story buildings.
- Industrial facilities (e.g., oil & gas terminals, wind power)
- Small transportation projects

What is a Geotechnical Peer Review?

- Review geotechnical report, specifications, and drawings before start of construction
- Review geotechnical calculation and shop drawing submittals, but don't approve them
- Summarize in a brief written report
- Provide a second opinion. **NOT** becoming the Engineer of Record
- Not the same as Value Engineering
- See my attached paper for more details.

Common Concerns

- Overly conservative recommendations
- Structural engineer and geotechnical engineer did not communicate.
- Ambiguous or incomplete discussions
- Bad ideas on mitigation of expansive clay, existing fill, compressible soils, etc.
- Poorly written specs

How to Say It

- Put away your ego and any desire to make a competitor look bad.
- Be professional, careful, and mature.
- Remember that written communication is always colder than oral communication.
- Give others a way to “save face” if they’ve done poor work. “Firm X should reconsider...”

Think Like a Contractor!!!

- Everything is a potential change order.
- Safety, safety, safety
- Overly conservative engineering or some other “concerns” might increase the contractor’s profits.



Value of General- Contractor-Oriented GPRs

Value for the Contractor

- Fix problems before construction starts, making projects go more smoothly
- Avoid getting stuck with unexpected costs
- Better preparation for questions, claims, and change orders
- Leverage against unresponsive engineers and architects
- They can pocket the reduced construction costs.

Is this “Insurance” Worth Your Fee?

In my experience:

60% of the projects: no significant benefit

20%: Intangible benefits

15%: Cost savings by fixing problems early or cutting away overly conservative engineering

5%: Significant issues identified and mitigated



Quotes from Contractor PMs

“Helps with things we do not see”

“Helps us increase scope”

“Ensures that errors are caught before it’s too late”

“Cost savings”

“Opens up the dialog with the design team”

“Fast solutions”

“An ounce of prevention is worth a pound of cure”

Value for You



1. Profit
2. Work on interesting projects
3. Learn from other geoprofessionals
4. Understand how contractors work
5. Build enjoyable relationships; become the “Trusted Advisor”



What if the contractors' or owners' savings from your input is far greater than your fee?



Risk



Your Risk

- Taking on liability for a relatively small fee
- Interrupting other project schedules
- Creating conflicts of interest
- Irritating potential clients and teaming partners
- Not being considered for the full geotechnical or CoMET scope of work.

Reducing Your Risk

- Use limitations language:
 - The GPR is not the EOR.
 - The GPR does not revise any recommendations in the geotechnical report or details in the plans.
 - All final decisions must come from the EOR
 - Don't use your PE stamp unless state rules require it.

Laws Limiting Peer Review Liability



NSPE Position Statement No. 1780 – Peer Review Legislation

Adopted: March 2017

Latest Version: New

NSPE Contact: Committee on Policy and Advocacy

Position Statement: NSPE supports the enactment of professional engineer peer review statutes in each jurisdiction. Further, NSPE believes that professional engineers participating in peer review and post-project review processes should be protected by appropriate legal immunity and legal privilege. Peer reviews include the review of designs by a third-party prior to project completion, as well as in-house post-project reviews of completed projects to identify engineering best

Staying Independent

Will you become a
“paid advocate”
who is saying
whatever the GC
wants you to say?



Staying Independent

What if they tell you to remain quiet about a certain topic?

Every PE's first priority is to protect the public.



Business Aspects

- Bill at **FULL FEE**
- The GC values your advice!
- Cheap engineering can't be mitigated by a cheap review!

Contracts / Legal / QA

Contractor shall indemnify and hold harmless Consultant against any claims brought against Consultant arising out of the Services provided by Consultant to Contractor under this Agreement. This indemnification provision shall apply only to peer review services and shall not extend to any other services provided by Consultant outside the intended scope of this Agreement.

J.E. DUNN CONSTRUCTION COMPANY



Signature

Thomas F. WUTTAKER
Sr. V.P.

Title

KLEINFELDER Central, Inc. f/Kla^{bp}
GeoSystems Engineering, Inc.



Signature

Joel G. Carson
V.P.

Title

Phase 2:

Geotechnical engineering and support services during construction

“On Call” to PMs and Superintendents during construction



- Excavation stability and safety
 - Underpinning
 - Crane bearing capacity
 - Claims and RFIs
 - Subcontractor claims
 - Frost heave
 - Dewatering
 - Unexpected seepage
 - Soft subgrades
 - Broken utility lines
 - Excessive settlement
 - Crumbling old retaining walls
 - Expansive clays
 - Rubble fill
 - **Blunders**
- Unexpected subsurface conditions
 - Settlement monitoring
 - Review of shoring designs and installation
 - Earthwork quantities
 - Cracked floor slabs or pavements
 - Problems with fill compaction
 - Temporary roads
 - Design team disagreements
 - Simple questions

Excavation Stability and Safety



Crane Bearing Capacity and Rock Excavation



Earthwork Shoring Seepage



Forensic / Expert Work - Slope Failure





“How much money do you need to put that on a letter, sign it, and put your PE stamp on it?”

Conclusion: The **value** of a geotechnical support for a general contractor is:

- GPR saves the GC **money** and **time**.
- Geotechnical support during construction helps the project go more smoothly.
- The geotechnical engineer:
 - Earns profit.
 - Works on many interesting projects.
 - Builds enjoyable relationships

Any Questions?

Thank you!

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