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WHITE PAPER

**HIRING THE RIGHT GEOTECHNICAL ENGINEER AND
DESIGN-BUILD SPECIALTY GEOTECHNICAL CONTRACTOR:**
Some Insights for Owners

HIRING THE RIGHT GEOTECHNICAL ENGINEER AND DESIGN-BUILD SPECIALTY GEOTECHNICAL CONTRACTOR: Some Insights for Owners

INTRODUCTION Unforeseen conditions, delays and cost overruns, excessive foundation settlement and failures. Unfortunately, these are all too common in our construction industry, and they lead to disputes and legal battles that are costly and time consuming. This is particularly true on design-build projects.

BACKGROUND How can owners protect themselves and reduce such risks? Every member of the design-build team has a vested interest in anticipating project risks to help optimize the performance of the project.

Where do most of the risks arise from? Well, most likely, from foundations and geotechnical works. Risks associated with unexpected ground conditions are responsible for more claims than any other project scope item.

Because of the inherent unpredictability of geotechnical conditions on a project, owners cannot completely eliminate these risks. However, with a top-notch geotechnical team, owners can confront the risks upstream and keep them under control.

A risk-aware owner can make smart decisions:

1. Select your geotechnical engineering firm and design-build specialty geotechnical contractor (ground improvement contractor, support-of-excavation contractor, deep-foundation contractor) based on the technical, professional and business merit of the staff members who will constitute the team that will work with you throughout the project. It is very important to select a team with

knowledge of local ground conditions and the type of construction involved.

Do you feel confident in your geotechnical engineer? Build a solid and long-lasting relationship with your geotechnical engineering and construction partners, as they will continue to be your trusted advisors throughout the project.

2. Develop a scope with your geotechnical engineer and specialty geotechnical contractor that is in line with the known risk inherent in the project. For example, investing in a comprehensive geotechnical investigation up front can save you a lot of problems down the road and prevent claims for unforeseen soil conditions. The more information you can provide to your specialty geotechnical contractors, the more optimized the design and solutions they will propose to you.
3. Encourage your geotechnical engineer to be actively engaged in discussions and coordination with other members of the team. Your structural engineer and geotechnical engineer need to be in close contact. It is important that they understand what the other needs.

Also, make sure that the design of

your foundation is aligned with the geotechnical report recommendations. You need to provide your specialty geotechnical contractor all the information they need to fine-tune their design and proposals.

4. Realize that the recommendations provided in the geotechnical report are provisional and may change once the construction has started. The geotechnical recommendations are often based on an unreasonably small number of samples. It is relatively common for borings to differ from actual site conditions.

You, your geotechnical engineer and your specialty geotechnical contractor need to be able to quickly react to differing conditions. The quicker the reaction, the smaller the impact on the overall budget. This is why it is very important to include in the budget and scope of services sufficient on-site oversight by the geotechnical engineer during the work.

5. Try to engage the geotechnical engineer from the same geotechnical firm you've been working with since the inception of the project so that they can conduct on-site geotechnical inspection/peer-review during construction. If you select a different firm for your inspection and material testing, you need to ensure that there is a two-way dialogue between the different engineering firms and a full transfer of information.

It is not uncommon for a different

firm to offer on-site review/ inspection services as a “loss leader” (low cost) in order to gain access to a new client and hope for a larger scope of services as the project progresses. While this seems to provide instant savings for the owner, the consequence of a lack of communication between the engineer-of-record and the on-site inspection agency can be catastrophic to a project. Engineers are often reluctant to reach out to what they see as their competitor (the other firm) to seek out advice, information or clarification about a project they are both working on.

Do not unnecessarily clutter the lines of responsibility on the project. By having one and only one engineering firm providing the full scope of services on a project, you ensure that in case of any issues, you will minimize the risk of “finger pointing” and any attempts to transfer the liability between different engineering firms.

The same is true when you hire your design-build specialty geotechnical contractor, whether it be for ground improvement or deep foundations. Most likely, they will become the engineer-of-record for their portion of the work, so you need to ensure that they have understood all the parameters of the project and have had in-depth discussions with your geotechnical engineer. The design product from your design-build specialty geographic contractor will rely on the information in the geotechnical report for the site.

Some design-build specialty geotechnical contractors know how to play the “blame game.” They have a design company providing a design to a third-party installer,

without any legal ties between the two. When a problem arises, the designer will more often than not point to the faulty workmanship of the installer, while the installer will blame the design. The truth is, both have probably contributed to the problem. As the owner, you are caught in the middle of this family feud. Hiring an integrated firm with both design and build capabilities will pay off in the long run.

Tame Your Risk

You want to tame your risk? Hire a geotechnical engineer or a design-build specialty geotechnical contractor that you trust and that trust and respect each other. Some engineers recommend a specialty geotechnical contractor or even a technique solely based on the fact that they heard or read about it or because “they don’t know much about it, but other people have recommended it in the past.” Beware! It is best to select firms you have already worked with or that have worked with each other. Giving the work to the lowest bidder systematically without the proper research is increasing your risk. Geotechnical engineering is a high-risk environment, so keep risk under control as much as possible by hiring true experts in their field.

The development of the scope of work is probably the most important element when engaging a geotechnical engineer or contractor. It addresses an array of important project risk items and how they will be dealt with. For example, the working platform is one of the most critical aspects for geotechnical construction work, yet it is sometimes relegated to the fine print of a contract, or even worse, not dealt with at all.

As an owner, you have the duty to provide your contractors with a safe work environment. Placing a safe working

platform on your job will not only reduce the risk of an incident but will also help the contractor be more productive (which in turn helps your project schedule). Additionally, it will improve the quality of the work and reduce the risk of rework, or even worse, faulty construction. A good working platform is a necessary investment to ensure that your project will be safe, on time, and of good quality. Be wary of subcontractors that do not request a safe working platform and accept to work without one. It is often the telltale sign of poor safety and/or quality.

Ask yourself: “Are the savings I am realizing now worth the additional risk I will have to bear during and after the job?” Most likely, the answer is “no.” This likelihood has been demonstrated by thousands of lawsuits in our industry.

Each project is unique and requires a detailed and specific scope negotiation. This will also alleviate the risk for subsequent claims and change-order request games that some like to play because they manage to negotiate a vague and incomplete scope of work.

CONCLUSION Even the most quality-conscious project teams may find themselves in situations where price is the governing factor in the selection of the geotechnical engineer and subsequently the design-build specialty geotechnical contractor. As an owner, you should ensure that when comparing two or three proposals, you always compare apples-to-apples and make sure that there are no out-of-scope items lurking behind a quickly crafted, cheap proposal.

This is why a qualification-based selection process is always preferred, as working with a trusted team will allow you to discuss value-engineering solutions and cost-saving ideas more easily and openly.

GOING FORWARD As an owner, reduce your risk while saving overall project costs: Hire the right geotechnical team!

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