

Take Time to Save Time

Lessons Learned for Planning a Successful Structural Investigation

By Heather Todak, P.E.

The client is on board, the contract is signed, and all eyes are on you – how can you ensure your upcoming structural investigation is successful? After participating in many on-site investigations from coast to coast, here are some tips for successful planning and execution from the author's perspective as a young engineer beginning to lead project teams.

Choose the Right Team. Assembling the right people for your project is arguably the most crucial decision you will make. Ideally, craft the perfect mix of individual backgrounds, technical expertise, and experience levels. Having all the right colleagues on the job site with you may not be the most cost-effective approach, but extra costs associated with seniority and travel expenses pay off in the end. Make sure each team member has a well-defined, unique role and communicate to your colleagues why they are on the team.

Set Expectations. As soon as the team is established, hold a pre-visit meeting before embarking on the trip. A lot goes into planning a successful structural investigation, so enlist the team to assist. Assign pre-investigation tasks that team members can own; this is an opportunity for them to be engaged at the beginning, not just when they arrive on site. For example, junior team members can familiarize themselves with the project scope by developing field sheets, procuring equipment, or collecting existing structural reports and drawings.

Before the site visit, ensure the team knows what to expect regarding how the field investigation will unfold: How long will the days be? What are the working conditions? What if we do not finish in time? What kind of follow-up or reporting assistance is expected of them after the investigation is complete?

Establishing expectations with the client is just as important – if not more important. Although your project goals and deliverables should be clearly outlined in your signed proposal, take the opportunity to review your intent with the client ahead of the on-site investigation. What are the limitations of your structural investigation or testing techniques? Is the client providing access, notifications to tenants at the property, coordination with a contractor, or any other necessary support? Be sure to address any essential matters, such as special safety considerations or protocols.

Lastly, re-confirm your deliverables. Are they expecting a verbal follow-up, a 40-page written report, or something in between?

Select the Right Equipment and Tech. Ensure that the team is well-equipped with the most appropriate equipment, materials, and technology for the job. Depending on what type of structural field investigation you are conducting, this may mean anything from a basic tool bag to surveying tools or nondestructive testing equipment.

Keep an eye on the prize – what are the primary goals of the investigation? Keep your focus on the final deliverables – do not plan a ground-breaking science experiment for a client who has asked you to crack-map their parking garage. If your project involves more advanced testing, such as ultrasonic testing or ground-penetrating radar scanning, use equipment your project team is experienced and familiar with. If the equipment is new to the team, arrange a tutorial with the manufacturer and set aside time to learn the platform. While some level of troubleshooting equipment on site is expected, make sure you are well-prepared to avert disaster on the job site, where your time is most limited.

All structural investigations require an effective way to document observations and findings. This may mean traditional pen and paper or tablets with applications loaded with project-specific toolsets. Higher-tech approaches can be great for large-scale investigations, where multiple users can work on the same document simultaneously. Think through the process dictated by your documentation method and final work product. For instance, if you plan to take notes on paper field sheets, will you end up digitizing them to include in the report? In this case, working on a digital platform may save hours of work down the road. Like selecting the right tools and testing equipment, be sure to consider the comfort level of your team members with various documentation techniques.

Lastly, if you are hitting the road or traveling by plane for your investigation, do not be afraid to overpack. That extra checked bag containing backup batteries and extra tools is a lot less expensive than sacrificing your

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valuable time on-site to run to the nearest hardware store for a plumb bob.

React, Revise, and Reset. No matter how much you have planned your structural investigation, there is no way to prepare for everything. The best advice is to plan for the investigation *not* to go as planned.

Every on-site structural investigation should be designed to be fluid and adaptable. Plan a mid-morning check-in with the team on the first day to re-evaluate the investigative approach relative to the schedule. Will unpredictable conditions require the scope to be adjusted to accomplish the original goal? Take that opportunity to make sure everyone is comfortable with their designated roles in terms of technical expertise and physical demands. Then, adjust accordingly, build in breaks, and keep your team happy.

Keep your client informed without pretending to know all the answers just yet. Lastly, before you leave the job site, take the time to write a “mental report” in your head before de-mobilizing. Did you collect enough information from your client to prepare an appropriate project background? Have you addressed all tasks outlined in your proposal? Did you collect representative data, overall photos, or other visuals to include in your report? Asking yourself these questions while on-site can prevent unnecessary heartburn when back in the office.

Learn for Next Time. Once you have finalized your deliverables, take the time to debrief your team and see what you can take away from this project to help improve processes and efficiencies for subsequent structural investigations. ■



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