

# HEALTHCARE DESIGN

## Can't we all just **get along?**

BY **SCOTT CLEIN, PE, PA, LEED AP**

**W**e've all heard (or told) jokes about the differences between architects and engineers. One of my favorites mentions that an architect sees a glass that is half full while the engineer sees a glass that was oversized by 50%.

It is safe to say that architects and engineers are generally different in the way each approaches projects. When that project requires a multidisciplinary team—such as in the design of a new medical facility—this diversity in thinking is critical to the successful completion of the project. But it also can lead to bumps in the road.

This relationship is seemingly dogged by a series of myths. Left unchecked, they can drive a wedge between the architect and the civil engineering consultant, and threaten the success of the project. In the spirit of friendship, I therefore attempt to unravel a few of the most common myths. Think of it as couples counseling for the sake of our clients.

### **Myth 1: The civil engineering consultant must be local**

This is one of the biggest misconceptions, but also one of the most difficult to dispel because there is some validity to it. When a project is faced with the blinding bureaucracy of some of our country's largest cities, having a consultant who is familiar with local ordinances and operating procedures is a big advantage. For instance my firm, with nearly 15 years of experience working in the city of Detroit, will have a much better understanding of the processes and the people than a firm from, say, Ohio.



That being said, the reality of today's communication tools and the availability of fast business travel options quickly minimize the need for a local presence. A modern engineering firm should be willing to send the appropriate staff members on trips, as appropriate, to benefit the project. It should also be leveraging today's technology to take advantage of added mobility.

But proximity is not the only part of this myth. There is a feeling that only a local civil engineer can understand the local ordinances, which borders on insulting. It's our job as professionals to research and understand the codes and requirements to which our clients must adhere. We're responsible for this in the same way mechanical and electrical engineers are responsible for understanding local code implications. (Truth be told, most ordinances related to site improvements are based on the same tried-and-true engineering principals used by everyone around the country.)

There is actually a real benefit to hiring a civil engineering consultant in proximity to the architect's office. An architect can eliminate

a lot of personal headaches by choosing a civil engineer close enough to meet with regularly. Wouldn't your design team be more collaborative if every consultant worked in the same time zone and could regularly meet without plane trips or conference calls?

Take, for example, my firm's recent experience with the federal government. We teamed with a talented architectural firm, within a five-minute drive from our office, to design dining halls at multiple military bases around the country. We sent staff to each base (including engineers and survey crews) to meet with appropriate personnel and get a better sense of each project. Back home, we were better able to coordinate all aspects of each project because of our proximity to each other. We were also able to leverage shared experiences between each project, saving both time and money.

### **Myth 2: The owner should provide a survey to our civil consultant**

In my experience, the project survey is usually prepared at the

owner's direction or is contracted separately by the architect during schematic design. The owner or architect will usually call a surveyor they've known for years or send out a request for proposal to several firms asking for a "survey." This is done, in many cases, because the architect doesn't want any liability for the survey in the event that it is incomplete or inaccurate.

In these cases, more often than not, the job will go to the low bidder who will generally quote a minimum standard ALTA survey (or similar scope of work). This scope of work generally leaves out information (e.g., spot elevations, utility lines) vital to the proper design of a project from a site perspective. Unless the owner or architect is savvy enough to ensure that the scope of work includes everything the team will need for design, things can be missed.

By this time the civil engineering consultant has been chosen and is authorized to proceed with the site plan process based on the survey prepared by another firm. Here's where the fun starts. The project architect will now likely

be informed that the survey is incomplete (or worse, inaccurate) because vital information is missing. Then, the architect must request more information from the surveyor, which usually results in a headache for everyone and higher costs for the owner.

But these issues can be avoided by hiring a full-service civil engineering and surveying firm at the beginning of the project. This allows the civil engineer to communicate what he or she needs for design, thereby avoiding the whole mess. It would also avoid any finger pointing between firms down the road, should there be a problem with the survey.

**Myth 3: The civil engineer doesn't need to be involved until design development**

If the surveying example isn't reason enough to involve a civil engineer during schematic design, here's another one to consider. A new project has begun and the architect holds a team meeting to kick off the schematic design phase. Included are the architectural design staff, interiors, project management, LEED-accredited personnel, mechanical, electrical, and structural leads.

Who's missing? The probable answer: No one. The architect can prepare the architectural site plan.

Most architects do prepare the original site layout for their clients, and most of them do a great job. My contention is not that architects cannot prepare the layout, it's that they shouldn't. An architect wouldn't prepare a schematic wiring diagram would she? No, she would use the talents of her team to provide the most accurate plan possible.

Including the civil engineer in the schematic design process will foster a more collaborative environment for the entire team. It will also help identify site-related issues early on in a project.

He or she can help anticipate site issues (e.g., ordinances, physical constraints, ADA compliance) and can recommend easy ways to potentially save the client money.

Additionally, having a civil engineer on board from the beginning helps in building a green design that's LEED certified. Just as good architects rely on a mechanical engineer for energy efficiency credit interpretation, they should lean on their civil engineer for sustainable site credits.

My team is currently working on the design of a new pediatric medical office building for a large healthcare provider in Michigan. We were fortunate that the project architect valued our services and engaged us for schematic design.

The original site plan that the architect prepared was well conceived, but was slightly inefficient in its use of pavement in comparison to the placement of parking spaces. We worked with the architect and the owner to increase the number of parking spaces while decreasing the amount of pavement. We also increased the amount of landscaped area, which helped in our pursuit of LEED Silver certification. Working together from the beginning resulted in an end product that was more functional, aesthetically pleasing, and less expensive.

And with that final example, I'll bring our joint counseling session to a close. In this economy, it's critical for civil engineering and architecture firms to form close relationships and work together for success.

So whether you're a glass half full or 50% overdesigned, I encourage you to foster a more collaborative relationship in all of your future projects. **HD**

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