

NOTES FROM AN E IN AN A/E WORLD

BY ASMA MOMIN

Being an engineer at an A/E firm involves lots of challenges—but also plenty of opportunities that might not be available at an engineering firm.

WHEN MANY OF MY ENGINEERING FRIENDS

ask me what I like about working for an A/E firm, the first thing that comes to my mind is that I prefer to work with architects rather than engineers. I am only half joking. What I am getting at is this: I prefer having the architect as a *colleague* rather than a *client*. I have a lot more influence on projects with regards to schedules, among other things.

I remember my first job at a structural engineering firm. I was working on multiple projects with multiple architectural firms, and they all had short deadlines. Of course, everyone wanted everything yesterday, and when the architect is your client you do not have the luxury of telling them their project is not on the top of your list but you'll get to it eventually. You cannot negotiate schedules by stating the obvious: that you are working on another project, for another architect, at another firm. I remember the principal at my engineering firm telling me that you can't say "no" to the architect's schedule, nor can you even allude to working on any other projects.

What do you do, then, when the architects have impossible schedules, and you have to meet impossible deadlines? There's not much you can do. You are working on a tight deadline and waiting for the architect to send you their background. And as soon as they send it, they change it. Honestly, when it comes to sharing information and files,

I do not even remember how I managed to coordinate my projects at an engineering firm. I must confess that, in addition to coffee, the ability to readily access the updated architectural/mechanical files is a necessity for me.

Along the same lines, I like the opportunity to be able to walk across the office to discuss plans, sections, and details in person. I get more answers that way. It is hard to avoid a person standing over you. I don't have to drive across town for coordination meetings, I don't have to coordinate over the phone and guess what they are looking at, and I don't have to play phone tag. I save a lot of time not running after the information. This goes not only for architectural coordination but also for mechanical and other disciplines, which brings me to my next point.

Someone told me that diversity brings an opportunity to grow and learn. This is definitely the case at an A/E firm. Through conversations and discussions with other disciplines, I am more exposed to a global building perspective that is very different than the microscopic world of structural engineering. At an engineering company, it is easy to get sucked into the idea that a building begins and ends with structural engineering. The projects get into the books when the structure is ready to be designed and off the books when the structure is built. Everyone is talking, eating, and walking *structure* all the time. But in an A/E firm, you are constantly engaged in solving interdisciplinary problems, and therefore you become more aware of how your structure affects other disciplines. In A/E firms, I have been involved with the construction process at more levels than at straight-up engineering firms. It has been an enlightening experience that helps you become a better engineer.

At this point, you must be wondering what, if anything, I miss about working for an engineering firm. At times, I do miss certain things. Many of the A/E firms I have come across do not have large structural departments, and structural engineering is not their core business. Many people would argue that this correlates to job security. I must confess that I have heard of a few A/E firms laying off engineering departments during rough periods. However, I am not too concerned with that. It is in the best interest of an architectural firm to have an in-house engineering department. Not only is it a selling point to the clients, but it also keeps profits that would otherwise go to another company, in-house.

The abundance of structural resources available at an engineering company far exceed that of an A/E firm in terms of people, books, seminars, and technology. The structural departments of A/E firms I have worked with housed, at most, six engineers. I miss the abundance of structural minds and the plurality of structural opinions that you find in a structural engineering firm. There was always someone there with whom I could discuss project-related issues and concerns. Partially because it is the core business, there is a bigger appreciation for engineers and their contributions at an engineering firm.

There is also something to be said about being too available to the architects. As I mentioned, it is hard to

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avoid someone who is standing over you. Somehow, in an exclusively engineering world, I felt sheltered from the mundane and miscellaneous world of architectural detailing. In an A/E firm, the lines between the architect's and engineer's responsibility become skewed and fuzzy. I have taken on more design responsibility in my work with A/E firms. I have been asked to look at curtain wall details, interior partition wall details, and ceiling details. I have even detailed and sized framing for bathroom vanities. This partially comes from an industry-wide misunderstanding that all elements having any sort of gravity load are a structural responsibility. We all know that everything thousands of feet above the earth's surface has gravity loads, but I am not designing everything thousands of feet above the earth's surface. (I can't help thinking that if I weren't sitting within just a few feet the architect, somehow they would find a way to frame the architectural details.)

Additionally, structural engineers in an A/E firm take on more responsibility because, unlike engineering companies, there are no contracts outlining the project role and responsibility of the structural engineer. Engineering companies can ask for more money to design elements that were not initially called out in their contract. For example, if you're dealing with non-structural elements—as in the case of the bathroom vanity—the architects would figure out how to address the issues without structural input, or they would renegotiate the contract. Either way, this process keeps elements that are not part of the building frame design—and are traditionally allocated to architects—from landing in the structural engineer's lap.

Having said all this, I must point out that it is perhaps a generalization based on my personal experiences. I recognize that variances exist among individual engineering and A/E firms. In the end, the management and the culture of the firm you are working with will strongly dictate your experience. A willing and supportive management goes a long ways and is definitely not a disadvantage. A culture that appreciates and recognizes what you have to offer as a structural engineer is always a benefit. MSC