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WHITE PAPER

Exploring the Critical Role of Fabrication in Architecture

How a good fabricator bridges the gap between material manufacturing and design.

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A Little Background

Architectural panels changed the nature of building facades, by separating the load-bearing wall from the aesthetic of a design. The substrate could be built on the construction site, while the panels could be prefabricated off-site, giving way to greater efficiencies, improving precision, and enabling advancements in finishes, sustainability, and safety. The design possibilities became practically limitless as products like metal composite materials (MCM) entered the arena. With an astounding versatility and expansive palette of colors and gloss, these innovative materials have become the face of buildings around the world.

For designers looking to build with architectural panels, it may be surprising to hear that while the material manufacturer may produce the product to meet the exact look and performance needs required, it likely does not produce the cladding system. Rather, skilled fabrication teams use architectural materials to create complex forms and assemblies that make building exteriors both safe and beautiful.

It Starts with the Specification

Cladding is just one component of the wall assembly described within a project's specification — the framework that details the scope, materials, and methods required as found in MANU-SPEC Section 07 42 13 Metal Wall Panels. This specification may require a certain cladding system, paint system, warranty coverage, or fire testing standard. General contractors receive the specs and then get subcontractors to bid on the work. Enter the fabrication team.

"Architects will specify a list of products for a given project. For a façade featuring MCM, that might mean the finish

criteria or attachment systems," explains Chad Patterson, architectural sales manager for ALPOLIC MCM. Once a part of the fabrication world, he uses his extensive background in project management, drafting, estimating, and installation to help educate designers and get them in touch with quality fabricators in their region.

The Right Fabricator for the Job

In the architectural, engineering and construction community (AEC), there are numerous fabricators with varying capabilities in both their range and quality of work. In theory, anyone with a CNC table can route and return a sheet of MCM to create a panel. The differentiation is in the fabricator involvement in the entire process from start to finish. Perhaps, for example, a smaller shop might pass the fabricated materials on to an installation team. At the other end of the spectrum, large fabrication companies may have teams dedicated to providing a more full-service experience. From drafting

services to 3D scanning, to engineering proprietary extrusion systems and wall assemblies tested to the latest fire safety standards, these sophisticated operators act as collaborators to the design team and project managers, aiding the general contractor.

Reconciling Design with Constraints

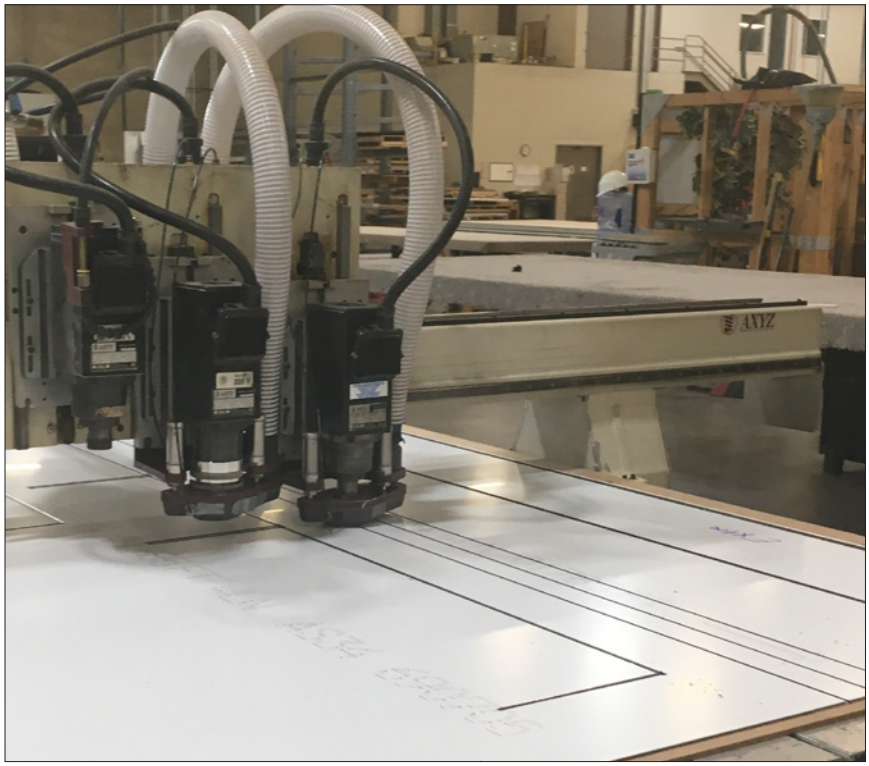
Patterson explains that often the first step for fabricators considering cladding applications is interpreting the architect's drawings. "These give fabricators a rough idea of what the architect wants the end product to look like. From there, the fabrication team would draw it to be more specific to the products offered. So, it would be the fabricator's details, attachment methods." Chad describes project management as reconciling the design with the build constraints while making sure the project stays on schedule and within budget. "It's a matter of trying to get it tailored to fit. Fabricators know what the job needs and what the client wants."

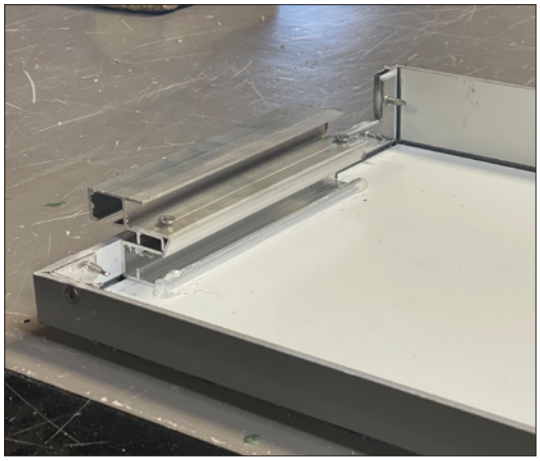
It is often the fabricator, with the expertise in understanding what products and systems are required for the project, that will bring the design dream into reality. Perhaps, even suggesting an alternate architectural material.

Collaborating to Make a Lasting Impact

After submitting drawings to the general contractor for approval, the actual fabrication process can begin. Routed and formed into panels, the materials are shipped out to the job site where the erection team can install them. The entire process is a testament to the collaboration between the fabricator and the general contractor, the designer, and the material manufacturer to create code-compliant construction. Fabricators are the key to meeting the requirements of a client and delivering a finished wall assembly that will be the lasting impression of a build.

Every construction project is unique, but one thing remains true. The right team, using the right materials matter.





About the Author

Michael Bowie is the technical services manager for the ALPOLIC division of Mitsubishi Chemical America. With 12 years in the MCM industry, he is an invaluable resource to the AEC community and serves as a member on numerous industry organizations focused on safety and code compliance in the architectural space.