Modern Materials
Inspired Product + Material Choices

The Smithsonian’s most recent addition includes a façade composed mainly of an intricate aluminum screen. Coloring and coating this new national treasure was an equally detailed process.

National Museum of African American History and Culture
Value Beyond Building in Precast Performs

Savvy builders know the true value of a building product must consider a combination of the purchase price, the installation cost and the possible long-term operational savings the product provides to the owner during its lifecycle. At Enterprise Precast Concrete of Texas, operations manager, Scott Davis is certain that a high-performance building envelope is one of the wisest investments that can be made on any commercial construction project regardless of client or purpose.

"I'm confident that there is no better value for a wall system than an insulated architectural precast panel," says Davis, who has been in the construction industry for more than 18 years and now is the operations manager at Enterprise's Corsicana, Texas office. Davis' confidence in insulated precast panels is shared by general manager, John Arehart, who has seen the significant evolution of architectural precast panels over a 29-year career.

Value analysis of any building system requires a holistic view of the project and the objectives the client appreciates the most.

"High-quality concrete additives have really improved the performance and possibilities of architectural precast," says Arehart, who recalls that in 1988 large panels were 10-ft. × 10-ft. while today panels can easily span 12-ft. × 50-ft. and 15-ft. × 35-ft. Arehart has seen the increased size of precast panels compel a cultural shift across the construction industry affecting virtually everything from site logistics and crane operations, to trucking access, delivery sequencing, the equipment required to move massive panels and the skilled labor that secures them in place.

"Insulated precast panels didn’t exist when I started in the business and today they account for more than half of all of our production," continues Arehart, agreeing with Davis’ assessment of architectural precast’s value in commercial construction. Between an exceptional range of finishes, materials, colors and textures, the possible combinations are limitless for designers. Among countless architecturally significant projects, Enterprise has been a part of the Kauffman Center for the Performing Arts in Kansas City where a combination of insulated and solid panels, including curved shaped pieces, were transported to the jobsite on specially-made panel racks. While at the Bloch School of Business, the use of insulated precast panels resulted in substantial cost savings over rainscreen framing systems that designers originally envisioned.

Insulated precast panels are very well-regarded for their environmental benefits, which begin with being fabricated in a controlled production facility with virtually no waste. Enterprise’s insulated panels also provide a complete thermal break between the interior and exterior façade, so they are a great way for architects to meet building codes, while supporting sustainability with a high-performance building envelope that works well in any climate. During construction, large sections of exterior walls and floors are hoisted into place by cranes, allowing the building to be dried-in quickly for year-round progress on interior components.

Enterprise uses a highly-specialized and proprietary wall system, called the Altus CarbonCast panel developed by a conglomerate of architectural precast producers with ownership of the technology. Founded in 2003 under a “co-opetition” model, AltusGroup companies like Enterprise engineer, manufacture, validate and market precast innovations and then compete against one another for contracts when their service areas overlap. Using carbon fiber technology, the award-winning Altus CarbonCast panel sandwiches the insulation between the architectural exterior wythe and a gray concrete interior wythe as a form for acid-resisting action for structural capacity. With all of the forming, mixing, pouring and curing technology in-house, Enterprise relies on Foam-Control Expanded Polystyrene (EPS) ridged foam insulation as the most effective core for their CarbonCast panels and generally achieves an R-value of between 4 and 5 for every inch of EPS foam thickness.

"ACH Foam Technologies is an EPS insulation manufacturer we have come to count on for a few reasons," says Arehart. "Frequently, our projects involve panels of many different sizes and material compositions. They are able to manufacture rigid foam insulation in a tremendous array of lengths, thicknesses, densities and compressive strengths, which allows us to fabricate any panel on any project with ease and little waste."

ACH Foam Technologies is currently supplying Enterprise with a steady stream of their Foam-Control 130 product for CarbonCast panels going into a new $1 billion data center for a well-known technology company building out more than 250,000 square feet of new space in Fort Worth, Texas. With operations and production responsibilities, both Arehart and Davis appreciate ACH Foam Technologies’ willingness to organize and develop detailed product numbering systems for each order to Enterprise’s specifications. This organization allows fabricators to quickly pull the required insulation pieces and build each panel’s insulated interior in a repeatable process. ACH Foam Technologies understands that construction is a fluid, dynamic process and being flexible to their customers’ schedules is a brand strong suit.

Finding a balance between cost, schedule, quality and appearance shouldn’t feel like a compromise on any commercial building project regardless of scope or complexity. Thanks in part to the dynamic range of possibilities of today’s insulated architectural precast panels, clients, designers and builders can realize virtually any design imaginable with a high-performance building envelope that builds quickly and is in line with market costs.