



42 CUSTOM DOORS

Why are they becoming so popular?

46 MISSION BBQ

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Custom Doors for Better Buildings

BY JEFF WHERRY



“What do you have in stock?” is something steel door distributors are hearing a little less these days. While there will always be demand for stock products, architects are increasingly choosing to customize - whether for acoustics, bullet resistance, or to add a modern touch with slim profile frames.

Custom doors and frames may be selected for a variety of reasons:

Unique Dimensions - Wouldn't it be nice if every opening was a perfect 3'x7'? That's not reality though. Oversized and other nonstandard dimensions come up all the time, for example, in special use buildings and retrofits.

Enhanced Performance - Door assemblies can be upgraded for additional safety and comfort. They may offer protection from Mother Nature - hurricanes and tornados - or from people, such as sound reduction, forced entry, and bullets. Generally, these doors look just like regular doors because the performance comes from the door core and hardware.

Aesthetics - Steel doors can have embossments or attractive panels. Some architects like to have millwork affixed to the trim or have a faux wood finish with woodgrain etching. There are countless ways to customize the appearance. Custom doors don't have to be complicated.

To pass along some ideas, here are recent custom projects completed by SDI-certified manufacturers:

STEELCRAFT

The Bahamian government was planning the construction of a tourism building - an industry that accounts for almost half of their economy. Building in tropical environments is not without its challenges, namely the 80-90 percent humidity, rain, and not to mention the occasional hurricane.

With that in mind, the architects were seeking doors and frames that could withstand the climate, while also looking attractive in such a prominent tourism building.

They ended up contracting with Steelcraft, based in Cincinnati, Ohio, to produce 160 steel doors and frames with an embossed wood finish that emulates a real wood look through an engraving process in the door panel. A mahogany finish was selected for its rich appearance. Being in a humid environment, the standard galvanized material type was a perfect match along with the strength of steel for a lasting solution.

The doors and frames had exactly what they wanted: the warmth of wood and the strength of steel.

DEANSTEEL

Engineers from a nuclear power plant in Bahrain flew to Deansteel's facility in San Antonio, Texas with specs in-hand of exactly what they wanted. And their request was unique. They were seeking approximately 40 door assemblies that were blast resistant and bullet resistant to UL 752 Level 8. Usually you see just one or the other, not both.

The doors were a variety of sizes depending on the opening. In order to accommodate the blast conditions, parts of the frames were reinforced with solid steel blocks - no 20 gauge found in these doors! Some of the doors were up to 2-1/2" thick, many of which even had vision lights of 84mm thick specialty glass. The glass was layered instead of one solid chunk to meet the stringent blast and bullet resistance requirements.

The engineers at the nuclear power plant could have obtained these doors from Europe or any number of places, but they chose an American manufacturer because they liked what they saw when they toured the facility. Three months later they received the products, exactly to spec.

MPI

A commercial property owner wanted their buildings constructed with integrated concrete forms (ICF), which is a way to build exterior walls using a foam form reinforced with a web between the foam layers. This

construction method saves time by eliminating the need for plywood forms for pouring concrete walls. The ICF manufacturer wanted to take their system a step further by also eliminating the need for plywood forms at the door and frame openings.

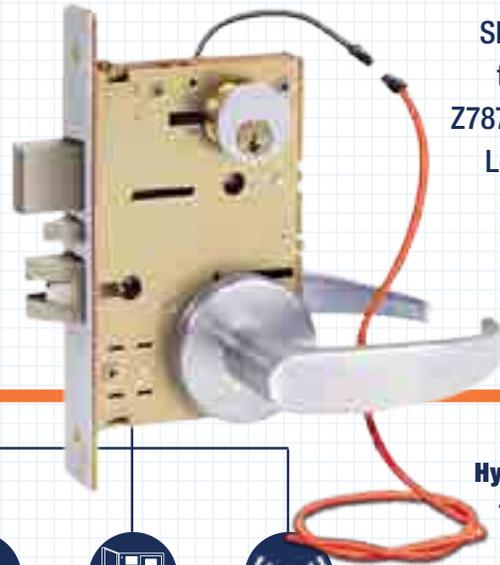
Standard door frames aren't compatible with ICF, so the manufacturer contacted MPI in Corbin, Ky., to produce a custom solution. MPI produced custom

integrated frame assemblies that would hold tight to the foam forms. The walls were poured with concrete and their custom frames became a solid part of the wall that meets all fire procedures and other industry requirements.

CECO DOOR

The U.S. Army was breaking ground on a new Army Cyber Command facility that would draw together their

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A former Sears warehouse was converted to retail, offices and residences. More than 500 doors in various sizes and styles were used in the project.

Left: Eight-foot entry units installed in custom drywall frames.

Right: Inside a corridor with a pair of eight-foot fire-rated doors using closers and a door coordinator. Doors installed in custom drywall frame profile.

operations, capability development, training, and education in one location. Due to the high security nature of cyber operations, this command facility required a variety of highly specialized door opening solutions.

Ceco Door provided several types of acoustical openings including STC 45 and STC 50 ratings that required different sound seals, thresholds and door bottoms to achieve the required sound performance for the highly classified rooms. Radio Frequency Shielding openings were also supplied to ensure sensitive information is contained. The RF Openings provided 40 decibels of shielding along with STC 50 acoustical ratings. Blast resistant doors were also provided on particular exterior openings to meet the Department of Defense specifications.

Even though requirements on this project meant that some openings would require multiple performance attributes, Ceco was able to supply the variety of specialty openings that the Army needed to successfully complete the project.

PREMIER STEEL DOORS AND FRAMES

Since 1926, a 16-acre property on the outskirts of Atlanta was home to a massive Sears, Roebuck & Co warehouse. Anyone who lived in the Southeast and ordered from Sears, their product came through this facility. The building was later vacated in the 80s, then used for the 1996 summer Olympics, and once again vacated with an annual cost to taxpayers of \$600,000.

In 2010, an ambitious developer purchased the property to convert it into 1.1 million square feet of retail, offices, and residences - the city's largest adaptive reuse project ever.

As you can imagine, the 85-year-old building was full of unique wall thicknesses, dimensions, and jamb depths. When all was said and done, the developer purchased more than 500 doors in various sizes and styles, including custom 8' tall entry doors and frames. The doors were manufactured by Premier, who made them on a floor-by-floor basis to simplify storage during construction.

PIONEER

In January 2015, ground broke in downtown Denver on a new high rise called The Confluence. Fast forward three years, and a new 34 story tower of luxury apartments now graces the Denver skyline. The building boasts 288 units of studios, one, two, and three bedroom apartments that are available for \$1,500 to \$12,000 per month.

A prominent door distributor in the Midwest, along with a local wholesaler, partnered with Pioneer Door to manufacture 700+ steel door frames of varying heights, widths, and depths. But there was a catch... isn't there always? They wanted the frames to be made without returns and welded together to allow for millwork trim to be affixed to the frames.

Not only did Pioneer produce the custom frames and millwork on time, they adjusted their production schedule

to make the logistics feasible for frame installation at The Confluence.

DCI HOLLOW METAL

Construction was underway in the heart of downtown Los Angeles on what would become the tallest building in the West Coast. The project took immense logistical creativity due to the density of the location and the structure's expansive footprint on the property. There were only a couple of loading docks and a perennial line of trucks waiting to drop off their materials, and without a convenient place for them to be stored.

The building required custom glazed elevations and thousands of standard, fire rated, and custom hollow metal doors and frames. Due to the lack of storage space, the GC was dreading having to manage and catalogue all of the products.

In light of this, the manufacturer, DCI Hollow Metal on Demand, offered to deliver the products in smaller batches as needed. They would deliver 50 one day, another batch the next, etc. so the GC could install them as received rather than manage thousands of doors and frames on site. While the products were on time and made to spec, it was the custom delivery schedule that saved the day.

CURRIES

U.S. Naval facilities were undergoing an extensive renovation to update their barracks to the Defense Planning Guidance and Unified Facilities

Criteria (UFC) 4-010-01 and the Department of Defense (DoD) Minimum Antiterrorism Standards. All major building systems needed replacement, including the exterior openings. As an upgrade, the Navy required all exterior openings to be blast resistant.

CURRIES supplied more than 350 blast resistant openings to meet the required code standards of this project. The specialty doors were constructed to withstand from 12 psi to 34 psi of peak pressure to provide extra protection against explosions and excessive force.

In addition to needing the over 350 blast resistant openings on the project, the Navy also required the doors and frames to be delivered on a very strict and short schedule. To meet the challenge,

CURRIES provided a shipping schedule that the distributor and contractor were able to work with to meet the Navy's demands.

REPUBLIC DOORS AND FRAMES

HopeHealth hospital network has 12 locations throughout South Carolina. They offer a complete range of health services including primary care, dental, chiropractic, substance abuse and more.

Their facilities organization was interested in acoustic doors that would limit the transmission of sound throughout

the building. In addition to patient privacy, this would also comfort patients from the constant sounds of pacing personnel, noisy carts, and beeping machines.

HopeHealth ended up purchasing the acoustic doors from Republic Doors and Frames in McKenzie, TN. They produced doors with a variety of STC levels to suite the various openings, each with the necessary seals, door bottoms and thresholds to achieve the desired sound performance.

As you can see, there are countless ways to customize a door. Some architects are surprised by how easy it is to go custom. Steel door and frame manufacturers have the benefit of being able to use lasers and shears to size sheet metal to spec very efficiently.

The next time you're wondering what's in stock, consider if it's worth going custom instead. +



JEFF WHERRY has been Managing Director of the Steel Door Institute (SDI) for more than two decades. For more information on how SDI Certified manufacturers can contribute to your next custom project, visit www.steeldoor.org.