Commercial Architecture Magazine, September 6, 2018 "Designing With Direct-To-Glass Digital Printing"
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Designing With Direct-To-Glass Digital Printing

by **Commercial Architecture** on September 6, 2018 in **Featured**, **Windows & Doors**

Almost any design can be created and reproduced.

When it comes to creating unique signature designs, architects and interior designers can explore endless opportunities with direct-to-glass digital ceramic printing. According to Stephen Balik, director of architectural sales and marketing, GGI, Secaucus, NJ (generalglass.com), almost any design can be created and reproduce on virtually any type of glass and glass configuration, including tempered, laminated, insulated, and bent glass.

Creative, elaborate, beautiful designs are produced using ceramic frit paint that is digitally jetted onto the surface of the glass, then fused into the glass during the tempering process. The result is a durable, decorative, and functional glass solution that can be used for exterior and interior applications.

Direct-to-glass printing offers several important benefits over traditional silk-screen printing and printed interlayers, Balik said. Among these are:

• **High durability.** Ceramic frit is fused into the glass creating a permanent design; images are UV-, fade-, and scratch-resistant—suitable for any interior or exterior application and ideal for public art displays.

• **Digital files.** No screens, setup, or storage fees are needed; variable data and unique panel sizes and shapes are easily incorporated into the design; files are saved electronically and can easily be accessed and reprinted at any time.

• **High-resolution printing.** Suitable for producing fine lines, typography, and complex images; useful for reproducing photographs, artwork adaptation, and material imitation.

• **Precision processing and printing.** Images can be printed in layers, creating different views on each side of the glass; single images can be tiled across entire facades and walls, with accurate alignment between panes; the layering of three or more designs is also doable, adding more dimension to the design.

• **Insulated for greater functionality.** Direct-to-glass printing can be incorporated into insulated glass units for building facades, with a high-performance low-e on the outboard lite for energy-efficiency, or fire-rated and other protective glazing on the inboard as needed to meet fire-safety or impact code requirements.

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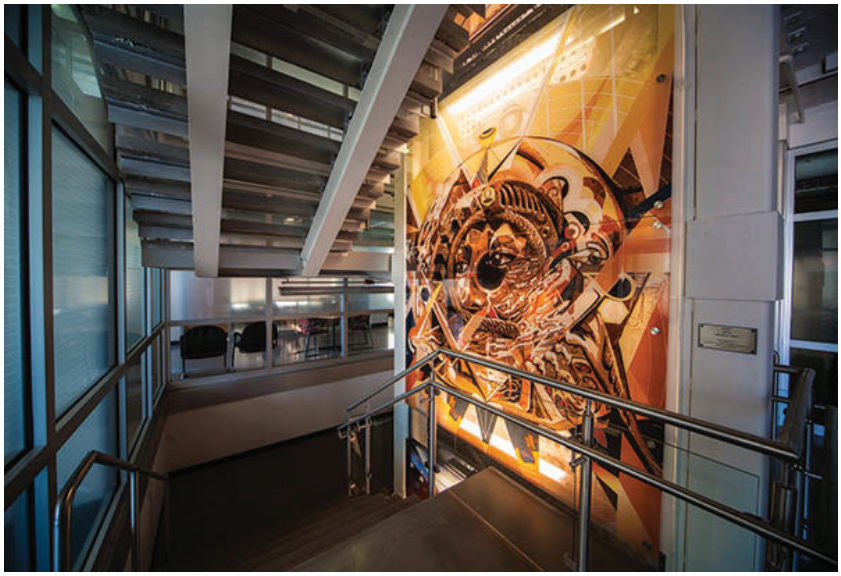
The following projects illustrate the direct-to-glass printing technique.

Harlem Hospital, New York, NY

In this design, 429 completely unique, laminated, insulated, digitally printed pieces of glass come together in a 13,000-sq.-ft. modern masterpiece that pays homage to historic murals. Careful testing occurred to determine the varying opacity levels needed for the digital imagery. This helped control the light levels required to maintain privacy in the building, while creating a marvelous glow, inside and out.

Architect: HOK New York (hok.com)

Glazing Contractor: W & W Glass, Nanuet, NY (wwglass.com)



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Ma Stair Plan, El Paso, TX

This 40-ft. public art project commissioned by the City of El Paso required complex color matching to accurately render the work of the prominent graffiti artist WERC. It is an example of the color and intricate detail that can be achieved using direct-to-glass digital printing. It also demonstrates the cost-effectiveness over using screen printing when the design incorporates multiple distinct images.

Glazing Contractor: Arrow Building Corp., El Paso (arrowbldg.com)

Artist: WERC (wercworldwide.com)

Palo Alto Medical Center, Sunnyvale, CA

Digital imaging can create biophilic designs that effectively connect people with nature. This custom-leaf pattern inspired by a William and Morris wallpaper design is digitally printed on the glass, turning a structural façade into art. The direct-to-glass printing process allows the pattern to fade as it moves upwards. This helped fulfill the architect's vision of creating an interior garden by animating the interior space with a shadow play of light, combined with an energy-efficient low-e on the outboard lite to control solar heat gain.

Architect: Hawley Peterson Snyder, Sunnyvale, CA (hpsarch.com)

Glazing Contractor: Exterior Cladding Systems, Corona, CA (ecsinc-usa.com)

Artist: Larry Kirkland, Washington, DC (larrykirkland.com)

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2 Gatehall Dr., Parsippany, NJ

A feature wall showcases a gradient of various shades of yellow and brown that, when seen from a distance, creates the illusion of a landscape. With 15 glass panels and back lighting, the wall creates a compelling abstract design and adds warmth to an otherwise minimalistic building lobby.

Architect: Studio 1200, Short Hill, NJ (studio1200.com)

Glazing Contractor: AMC Precision Glass, East Hanover, NJ (abraprecisionglass.com)

Photography: Brett Beyer, New York (brettbeyerphotography.com)

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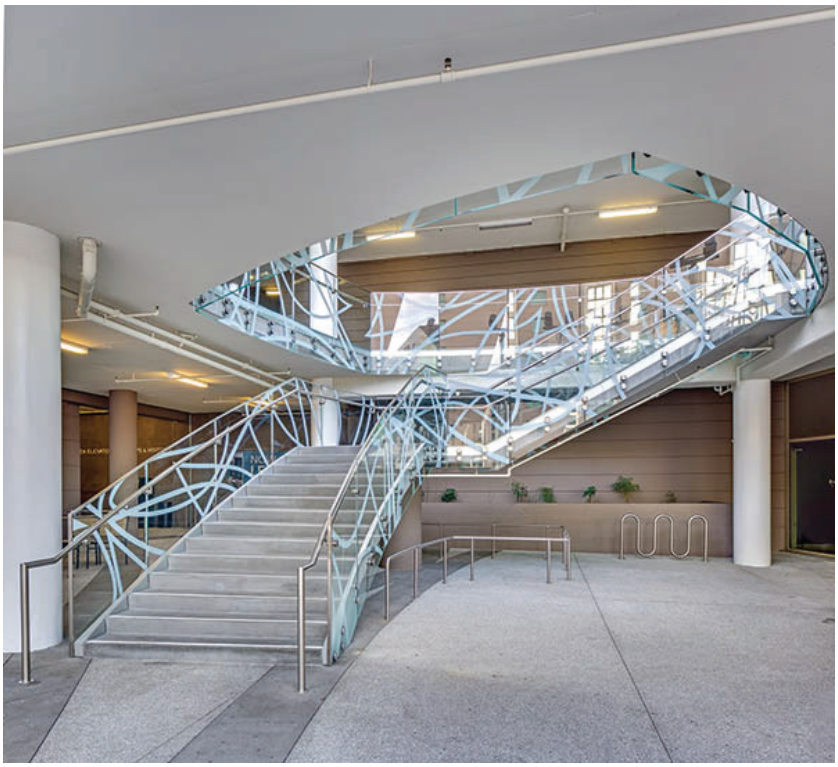

The Vermont Hotel Staircase, Los Angeles

Artist Cliff Garten worked with Jerde Partnership to ensure the artwork on this unique staircase would complement the “Heart of Compassion” public art display suspended over the entrance of The Vermont Hotel. The staircase consists of 1-in. thick tempered, laminated, low-iron glass panels on each side, with an intricate design digitally printed on each panel using ceramic frit paint. This illustrates the strength and visual unity that integrates the art and architecture as the staircase flows throughout the building.

Architect: Jerde Partnership, Los Angeles (jerde.com)

Artist: Cliff Garten Studios, Venice, CA (cliffgartenstudio.com)

Glazing Contractor: Walters & Wolf, Los Angeles (waltersandwolf.com)