

# Metal Architecture

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# The Day Residence, Chicago

Atop one of Chicago's prestigious residential buildings, overlooking the city skyline, is a rooftop garden where stainless steel blooms year round with little need for nurturing.

This urban patch of designer metal sprouts artistically among the green plants and wood deck as a high-tech retreat for the family of three that lives one level below. The rooftop refuge is a short climb up their private stairway that leads from the kitchen area of their loft-style condominium.

Determined to solve a practical problem with an inspired solution, the owners—Leah Missbach Day and her husband, F.K. Day—called in a team of professionals, including the architect, metal supplier, contractor, fabricator and landscaper. Together, they created an artistic assembly of metal with two objectives: to camouflage the roof's unsightly mechanical equipment and exhaust vents and to create a contemporary sculpture with an unexpected twist.

## The Skyline in Abstract

Led by Scrafano Architects of Chicago with the help of Tampa, Fla.-based McNICHOLS Designer Metals, as well as Lawrence Construction Inc.

and C&B Welders Inc., both of Chicago, the framed steel mesh panels were created in varying heights, widths and textures scaled to replicate the very skyline the roof overlooks. It's a view of Chicago's urban scene so cherished by the Days that they wanted to bring it into their garden, abstractly speaking.

In search of materials, and assisted by Elissa Scrafano, principal of Scrafano Architects, the Days selected McNICHOLS Stainless Steel Wire Mesh, specifically Chateau 3110, 3105 and Aura 8155. For an HVAC system like the Days, the material provides sufficient openings to circulate exhaust yet is solid enough to obscure the equipment.

"Most of our architectural customers have a problem to solve and a creative vision of how metal with holes can serve a function and complement their design," said Steve Wilcher, architectural marketing manager for McNICHOLS. "Frequently, they are trying to find a material that has air and light diffusion, acoustics, security, sustainability or aesthetics. Sometimes, it's all of these."

In the Days' case, the aesthetical qualities of the wire mesh make it the topic of conversation at their rooftop social gatherings. The added value is that the stainless-steel mesh is lightweight enough that it could be fabricated off-site. It is sturdy enough to withstand Chicago's wind and climate extremes,

so it is also used as infill for the 260 feet (79 m) of guardrail on the roof garden's perimeter, where the material is capped with treated ipe wood.

## Starting with a Vision

To bring the metal sculpture to life, Scrafano created a traditional study model of foam core from drawings, elevations and photographs. The firm chose the traditional model approach over a CAD design because Scrafano views handmade models as important to their artistic discipline.

The Days' private roof occupies about one-fourth of the approximately 20,000-square-foot (1,858-m<sup>2</sup>) roof area and overlooks Oprah Winfrey's famed Harpo Studios. "We literally stood on the roof and visually marked where everything was located, from what exists, including the HVAC units and vents, to what is seen a mile away," Scrafano said.

As a professional photographer with an artistic eye, Leah visualized the metal patterns she wanted and articulated her preference to Scrafano. Her husband, a bicycle company executive, also appreciates the artistic features in the metal wire mesh but is attracted to its practical side.

The Days' love of metal as a design accent shows up in the interior of their loft-style condominium where it is used to create a second floor. The flooring product, McNICHOLS Expanded

Metal #9 in 10-gauge, 3/4-inch (19-mm), covers 700 square feet (65 m<sup>2</sup>) of the second floor. The same expanded metal is used as treads on the stair steps leading to the roof garden.

For the roof, the Days were attracted to the diversity of stainless-steel products McNICHOLS offers in wire mesh collection, said Leah. "We wanted stainless, and we wanted something simple and available in a range of textures, so we could create a variation of shapes and sizes."

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## Custom-Built

Armed with Scrafano's design, C&B Welders custom-built and installed each of the 70 panels, paying close attention to the areas needing gate access to the HVAC units.

"We created some of the metal as 'drop in, removable panels' so they wouldn't look like gates," said Arlan Burton, owner of C&B Welders. "I made measurements and laid out each panel, piece by piece." Mounted in stainless-steel channel frames, the panels vary in size from 42 to 62 inches (1,067 to 1,575 mm) in height to 2 to 6 feet (0.6 to 1.8 m) in width, each mimicking a distant building on the skyline.

The team originally planned to use a powder-coated galvanized mesh, but the stainless steel was the best choice for corrosion resistance, said Burton. A total of 1,250 square feet (116 m<sup>2</sup>) of wire mesh was used to complete the job.

To install the panels, Lawrence Construction used a crane to hoist the metal from a truck onto the roof, where the team assembled the parts according to work drawings.

Completed in June 2008, the Days were able to grill dinner on their deck by summer's end. Their 2-year-old son now enjoys kickball on the roof, and they can entertain up to 50 guests, all while in full view of Chicago's magnificent skyline. [www.mcnichols.com](http://www.mcnichols.com)

