

NEW YORK'S HISTORIC CAST IRON DISTRICT

As home to the world's largest collection of cast-iron clad buildings, New York City's SoHo neighborhood is named for its location south of Houston Street to north of Canal Street. Considered one of the city's most attractive and popular neighborhoods, the historic district is known for the elaborate cast-iron architecture of many of its buildings, most of which were constructed after the Civil War as store and loft structures, warehouses and factories.

The use of cast iron as a facade for buildings was an American architectural innovation described in *SoHo A Guide* by Helene Zucker Seeman and Alanna Siegfried. In an excerpt from the book, the authors explain, "Previously, bronze had been the metal most frequently used for architectural detail. Architects now found that the relatively inexpensive cast iron could form the most intricately designed patterns. Classical French and Italian architectural designs were often used as models for these facades. And because stone was the material associated with architectural masterpieces, cast iron, painted in neutral tints such as beige, was used to simulate stone."

Cast iron also had an effect on the architectural design of buildings, noted *SoHo A Guide*, which reported, "Since the iron was pliable and easily molded, sumptuously curved window frames were created, and the strength of the metal allowed these frames considerable height. Thus, the once somber, gas-lit interiors of the industrial district were flooded with sunlight through the newly enlarged windows. The strength of the cast iron permitted high ceilings with sleek supporting columns, and interiors became more expansive and functional."

According to the New York City Landmarks Preservation



Commission, "The neighborhood lost its manufacturing base after the Second World War, and by the late 1950s became a commercial slum known as 'hell's hundred acres.' Artists started converting the vacant lofts and warehouses to studios during the 1960s, and turned the neighborhood into one of the most creative centers of contemporary art in the United States during the 1970s." The area received landmarks designation as the SoHo-Cast Iron Historic District in 1973 and in May 2010 was expanded to include 135 cast iron and masonry buildings along the eastern and western borders of the existing district.

SoHo's lofts became especially appealing to artists who used the wide spaces and tall ceilings of the former factories and warehouses as studios, as well as residential spaces. Beginning in the 1980s, the neighborhood began attracting more affluent residents including restaurants and boutiques, such as Prada, G-Star Raw, Bloomingdale's, H&M, Marc Jacobs, Chanel and Victoria's Secret.

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The cast iron exteriors of several SoHo buildings have undergone restoration in recent years using high-performance protective coating systems from Tnemec. "It's a major endeavor to completely renovate the facade of a cast iron building, which is at least 100 to 150 years old," acknowledged coating consultant Phil Gonnella. "Some of these buildings were around in 1860 when Abraham Lincoln delivered his speech at the Cooper Union in New York. The restoration of these buildings is normally very extensive because the cast iron is cracked and often has to be removed in order to repair the substrate beneath it."

Prior to recoating the cast iron exterior, the surface must be chemically stripped to bare metal or pressure washed using water injected with aggregate and rust inhibitors. "You need to prepare the surface without destroying the detail, so grinding and regular sandblasting is often not allowed," Gonnella noted. "A three-coat system of zinc primer, urethane intermediate coat and fluoropolymer topcoat is usually specified."

Among the recent cast iron restoration projects in the SoHo neighborhood are buildings at 625 6th Avenue (Howard Zimmerman Architects, P.C., Raphael Bassan Consulting Engineer), 50 Warren Street and 77 Mercer Street (FSI Architecture). Following careful surface preparation, both projects received a primer coat of Series 90-97 Tneme-Zinc, a zinc-rich, aromatic urethane primer; an intermediate coat of Series 73 Endura-Shield, an aliphatic acrylic polyurethane; and a fluoropolymer topcoat using solid color and metallic Fluoronar coatings from Tnemec.

A similar coating system was also used on the 40-story George Fuller Building designed with art deco metal figures and decorative features in bronze and cast iron beneath the windows. The project featured Tnemec's Series 90-97 primer, Series 73 intermediate coat and Series 1078 Fluoronar Metallic fluoropolymer topcoat in the custom color, Fuller Bronze. In addition, the coating system included a finish coat of Series 1079 Metallic Clearcoat, an aliphatic acrylic polyurethane used to extend the long-term weathering qualities of metallic pigmented coatings. The coatings were specified by Building Conservation Associates, Inc. (BCA) New York, which specializes in the preservation and conservation of historic buildings. "We were attracted to the availability of a metallic coating that imitated a bronze powder finish," explained Ricardo Viera, BCA associate director. "We have had numerous compliments from tenants of the building," he added.

Since its creation, The Landmarks Preservation Commission (LPC) has granted landmark status to 100 historic districts and 15 historic district extensions in the five boroughs of New York City.

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