

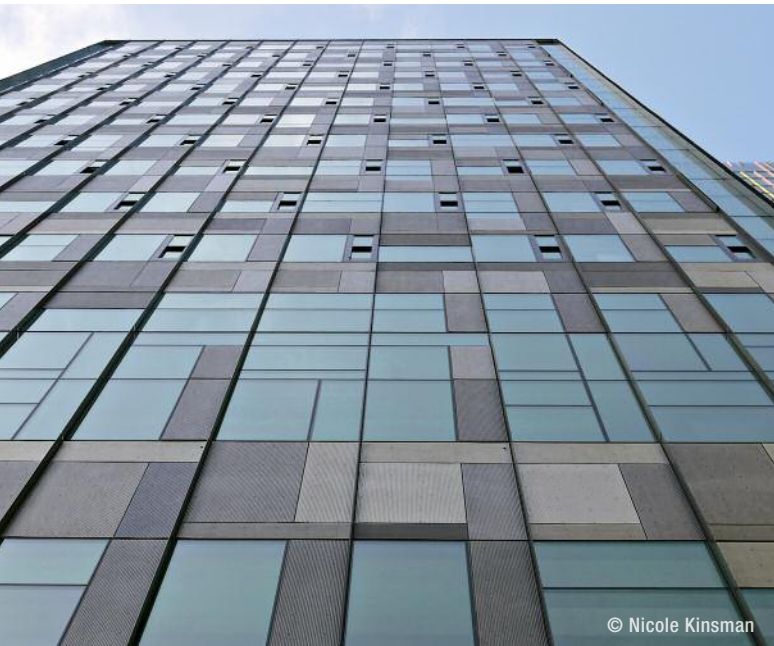


# Adding a splash of color

Who said skyscrapers must all be uniformly gray? Electrochemically colored stainless steel adds some whimsy to Seattle's new Doppler Building. The invigorating stripes of color serve as an antidote to the city's often cloudy skies. Below these stripes, a series of stainless steel sculptures at the building's base demonstrate another artistic application of this unique metal.

Rising 36 stories above Seattle's South Lake Union neighborhood is a sustainable beauty, created by NBBJ and adorned with Type 316 stainless steel. Even to 21st-century eyes, craning one's neck to assess the stature of a towering skyscraper remains a humbling prospect. And when looking up to see ribbons of color splicing the utilitarian grey, perhaps it is in admiration of the architecture of the future.





➤ A patchwork of champagne and brown stainless steel panels accent several of the Doppler's outer walls.

## Stainless, stylish, and sustainable

Perforated and electrochemically colored stainless steel “fins” separate the Doppler Building from the rest of the Seattle skyline. The building’s glass reflects an ever-changing spectacle of color, caused by variations in light playing off the vertically oriented fins. This dance of light and color draws the eye upwards. Stainless steel is used in two places: in brown and champagne-colored panels on the side of the building, measuring 1.2 millimeters thick, and in protruding red and green fin panels, measuring 1.5 millimeters thick. The reflections of these colored panels off the glass transform the structure’s 160-meter-high façade, designed by POHL, from office to artwork.

The Doppler Building houses Amazon’s corporate headquarters, but its design also enhances the overall Seattle cityscape. Its campus includes a through-block plaza with food stalls and art work. The building received a U.S. Green Building Council LEED gold certification for its ecological design and use of sustainable materials, including stainless steel. This stainless steel has a high recycled content. At the end of service, a Yale study showed that about 92% is recycled into new stainless steel with no property loss. Stainless steel’s durability and longevity are also frequently considered during USGBC LEED certification. When a Whole Building LCA analysis is conducted as part of the assessment, longevity, and maintenance must be evaluated. For example, if the colored panels were made of a shorter life material or one that required regular repainting, instead

**Electrochemical coloring** does not apply any pigments or other coloring agents to the surface that might impair the properties of stainless steel. Instead, it is achieved by thickening the passive film that naturally forms on clean stainless steel and gives it its corrosion resistance. Electrochemical coloring, patented in the 1970s, controls how the film forms and makes it more abrasion resistant and durable than chemical coloring alone. Thickening the passive film in this way does not change the color of the steel but instead filters out wavelengths of light, so it is also called light interference coloring.

of electrochemically colored stainless steel, replacement over a 65-year service life would be expected. But properly specified and maintained stainless steel panels should last the life of the building. Stainless steel offers the potential for significantly greater longevity over other materials, thereby potentially improving a building’s USGBC LEED score.

## Withstanding an increasingly corrosive environment

With a 2% molybdenum content, Type 316 stainless steel offers protection against the corrosive elements present in Seattle’s climate. The U.S. National Atmospheric Deposition Program (NADP), which collects data on the acid and salt deposited on surfaces from the air and precipitation, found that the chloride salt deposition levels documented in the Pacific Northwest are among the highest in North America. The accumulation of chloride salts on surfaces is made worse in this region by the frequency of both salt fog and very high salt content rain. Furthermore, air pollution originating in Asia is turning the once neutral-pH-rain highly acidic. While the Sound shelters Seattle and makes the environment less corrosive than areas directly on the coast, it is indeed a very corrosive environment, and the expected rise in rain acidity will only make the atmosphere more severe. Type 316 and more corrosion resistant stainless steels, like 2205 duplex stainless steel, will increasingly be needed to withstand this climate. Even with more acidic

rain and continuing assault from coastal salts, given proper maintenance, the stainless steel “rainbow” garnishing the Doppler’s façade is expected to retain its cheery color.

## Stainless steel as art

In the public plaza adjoining 6th and 7th avenues, visitors can admire sculptures created by local artist, Julie Speidel, also made with Type 316 stainless steel. The five-piece installation, called “Petros”, is a series of flat-sided, irregular polyhedrons. These beautiful, rock-like sculptures represent

unique rock formations left by a receding glacier in the area 14,000 years ago. The sleek, modern look of stainless steel contrasts with the form of ancient stones, creating a space outside of linear time at the foot of the skyscraper. Together, the ribbons of color above and metallic stones below underscore the artistic versatility of stainless steel.

Whether as sculpture or colored panel, stainless steel is a prominent visual feature at the Doppler Campus. Its corrosion resistance also helps to obtain the desired longevity of the building and its artwork in Seattle’s salty air. Visitors will enjoy the various, beautiful expressions of stainless steel present here for years to come. (Karlee Williston)

➤ This stainless steel sculpture is part of the “Petros” collection of sculptures by Julie Speidel.



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