PPG Profiles

The House at Cornell Tech
Roosevelt Island, New York

Case Study


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Owner
Cornell University; Ithaca, New York

Architect
Handel Architects, New York

PPG Metal Coatings
PPG DURANAR® MXL Coatings

Coatings Applicator
ARCONIC

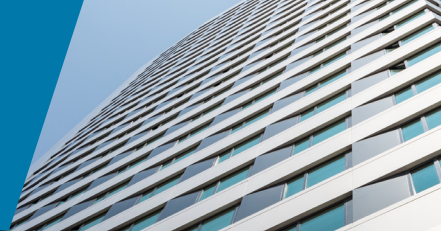
Project Overview

As the tallest passive-house building in the world, The House at Cornell Tech has earned international renown for its innovative, high-performance building envelope. Yet, few realize the metal coating that protects and beautifies that intricate assembly also is the result of novel invention.

Designed by Handel Architects, The House is a 26-story high-rise containing 352 residential units that provide affordable accommodations to cash-strapped graduate students. One of the main pathways to making the apartments affordable is extreme energy efficiency.

Wrapped in an innovative system of prefabricated metal panels, The House features triple-pane windows, mineral wool insulation, and air and vapor barriers, all factory-sealed into large, single-story curtain wall assemblies, then hoisted onto the building as fully integrated units. The result is a super-tight, super-insulated exterior wall that, combined with highly efficient heating, cooling and fresh-air circulation systems, reduces energy consumption in the tower by up to 70 percent compared to conventionally constructed buildings of the same type.

Handel Architects knew it was not enough for The House to be energy-efficient. As the tallest and most visible landmark on campus, the tower also needed a striking appearance worthy of the ingenuity hidden behind its facade. That's where PPG stepped in.



Capitalizing on their familiarity with PPG's "color shifting" coatings, the firm connected with Scott Moffatt, an architectural sales manager for the company. Moffatt suggested the use of PPG DURANAR® MXL coatings, which featured a dynamic color formulation PPG had recently brought to market. The next step was to introduce the firm to David Story, chief stylist and manager of color science at PPG, who worked directly with the design team to meet their aesthetic demands for the building.

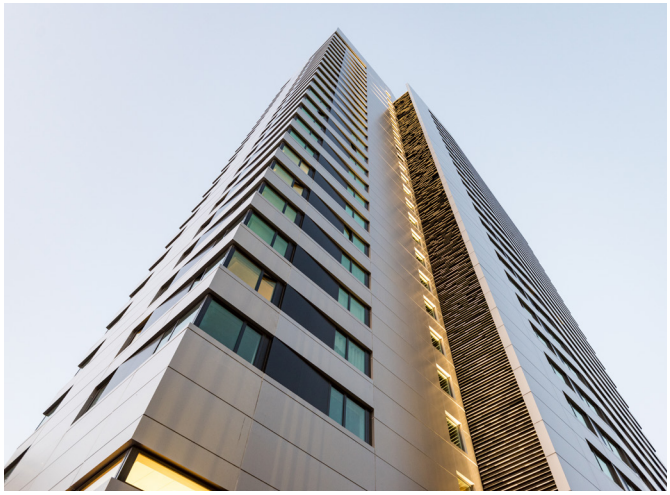
"From the beginning, we were involved with trying to style two primary colors," said Story. "One was for the primary skin of The House, which the architects wanted in a silver color that shifted to a gold or champagne color. The second was for the large window well panels, which they wanted to paint in 'a bronze with something special.'"

Ultimately, the design team selected a formulation called *Zenon Atoms* for the primary metal panels and another called *Kappa 4.1* for the window wells.

"We were looking for a paint that would be dynamic – one that would add depth and life to the facades," explained Deborah Moelis, a principal with Handel Architects. "The deep rich color of the *Kappa* with a slight sparkle provided the perfect contrast to the color-changing *Zenon Atoms* tint. The color of the *Kappa* was beautifully tuned to bridge between the champagne and silver of the *Zenon Atoms*."

Although it is used exclusively for architectural applications, the technology behind *Duranar* MXL coatings originated with PPG's high-end automotive finishes. Based on the same 70-percent polyvinylidene fluoride (PVDF) formulations used in traditional *Duranar* coatings – while incorporating many of the "best-in-class" visual effects favored by the world's leading automakers – these specialty products feature a basecoat overlaid with a clearcoat infused with a proprietary blend of special-effects pigments.

Story said each *Duranar* MXL coating is a unique styling, formulated with the architect to achieve his or her design vision. "Initially, we were going for the high-gloss look [for The House], but after the design team saw the three-dimensional look we were able to create with the *Duranar* MXL coatings, they were sold on that."

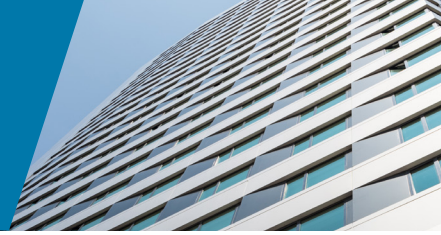


The House at Cornell Tech features two custom-formulated PPG Duranar *MXL coatings, including one called* Zenon Atoms*, for the building skin. The coating color-shifts from a silver to champagne color in response to changing light conditions.*

After months of conference calls, meetings and sample panel exchanges, Story said the architects settled on *Zenon Atoms* for the building skin. "They looked at a lot of different color samples early on, but that was the one color they kept coming back to."

The *Kappa* color for the window wells required multiple iterations before a final color was selected. At a distance, the *Kappa* looks like a plain bronze shade with very little sparkle," Story explained, "but what makes it special is that the color seems to explode when exposed to full sunlight, with a dazzling three-dimensional rainbow sparkle."

Although it did not factor into the architects' decision to specify *Duranar* MXL coatings for The House, many formulations of the product – including the *Zenon Atoms* color selected for this project – contain PPG's proprietary ULTRA-COOL® IR-reflective pigments. These advanced paint additives deflect sunlight to limit heat-island effect and diminish cooling loads for HVAC equipment, enabling them to provide added energy savings to commercial buildings.



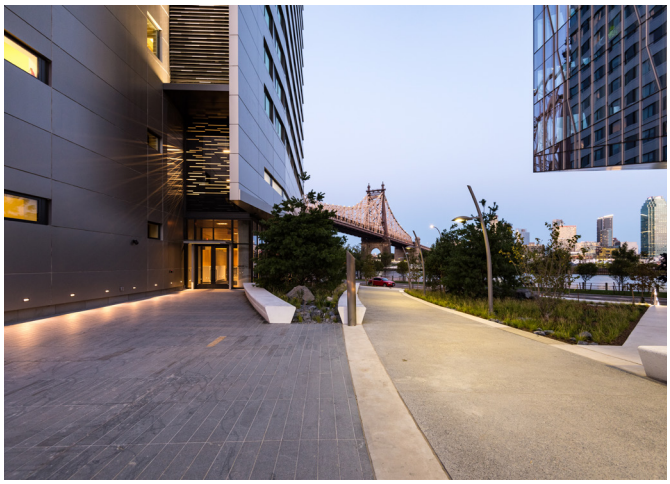
In addition to earning passive-house certification, The House meets ENERGY STAR® standards and has achieved LEED® (Leadership in Energy and Environmental Design) certification at the platinum level for Homes Multifamily High-Rise™.

More importantly, according to Jennifer Klein, former assistant director of strategic capital partnerships at Cornell Tech, the project may have established a template for constructing more big passive house projects in the United States.

"There are certainly a lot of developers in New York that have been really intrigued and tempted by passive house at a large scale," she told *Next City* magazine. "The fact that this was something we took on and were able to design successfully, figure out a way to afford within a budget and get approved, allows developers to think about passive house systems in a larger way."

Duranar MXL coatings were formulated with an eye on the future as well. "Architects are seeking more colorful and exotic effects for their building designs," said Story. "While polychromatic coatings are not new to the industry, the brilliance and three-dimensionality that these coatings produce is. When the coatings are seen on high-profile projects like The House, they generate inquiries from architects around the world."

For more information on *Duranar* MXL coatings with PVDF technology or CORAFLON® MXL coatings with fluoroethylene vinyl ether (FEVE) technology, visit www.ppgmetalcoatings.com or call 1-800-258-6398.



The design team at Handel Architects worked with a color scientist and stylist at PPG to create the two Duranar *MXL coatings colors featured on The House at Cornell, which, at 26 stories, is the tallest passive-house building in the world.*

The sparkle and three-dimensionality of Duranar *MXL coatings is created using the same technology PPG develops for high-end automotive finishes favored by the world's leading automakers.*