



High 'n' Dry: Protecting a Brooklyn high-rise from the elements

New York, New York



A New York State of Mind

Among its many legendary attributes, New York City is known for its rabid sports fans, foldable pizza slices and wealth of arts and culture. But it's the city's iconic architecture that perhaps best defines its footprint in the northeast. So, when Delshah Capital and OTL Enterprises selected a team to design and build a 20-story high-rise in the bustling borough of Brooklyn, it was literally Go Big or Go Home.

The Challenge

The 211-foot-tall stunner situated at 22 Chapel Street was an exciting opportunity to build a towering structure to complement the revitalization of downtown Brooklyn. Designed by CetraRuddy Architecture, the property is located at the south end of the Manhattan Bridge, giving it a high amount of exposure to admirers near and far.

Housed within its 167,000 square feet will be 180 residential units, retail space and a community facility. Since the building needs to withstand the extremes of New York weather—including punishing rain and snow—a superior weather barrier system was a must. Additionally, the building exterior required a barrier material that worked best with its metal panels and provided high energy efficiency. That's when two of Georgia-Pacific's most innovative water-resistive barrier/air barrier (WRB/AB) solutions answered the call—DensElement® Barrier System and its DensDefy™ Accessories.

Not Just a Square Box

The building's southern-facing façade and tower were uniquely designed to allow for exceptional views and to flood the interior with natural light. "It's not just a square box," said Darren Glisan, senior project manager at Titanium Construction Services, the general contracting firm for the job. "The facade elevation is highly complex in that the slab edges do not align with one another at the east end of the building. That was a fun challenge," Glisan continued.

Another notable part of the job was that DensElement Barrier System and its DensDefy Accessories weren't initially specified. The façade design originally called for porcelain tile and sheathing that was specifically designed for that material. However, the porcelain was later shelved for metal panels since they were more cost-efficient and easier to work with.



Component Quantities:

90 MSF of DensElement® Sheathing

1,640 Sausages of DensDefy™
Liquid Flashing

Cladding: Metal

Key Companies:

Consultant and Engineer:
Thornton Tomasetti

Architect:
CetraRuddy Architecture

General Contractor:
Titanium Construction Services

Sub Contractor:
PG New York

All located in New York, NY

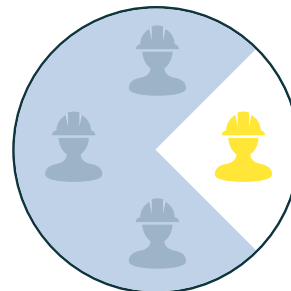
That's why Willis Ting, project manager and senior associate at CetraRuddy Architecture, turned to DensElement Barrier System, which integrates gypsum sheathing with a water-resistive barrier and an air barrier, along with DensDefy Accessories to seal the envelope. According to Ting, "The DensElement Barrier System [and DensDefy Accessories work] better with certain products—and metal panels are one of them. And, considering all the seams that have to be protected from the weather, we needed to choose the best [system] for the job."

Thornton Tomasetti, the façade consultants and structural engineers, still needed proof before moving forward. "Thornton Tomasetti are serious engineers. They know their stuff and they don't compromise," remarked Glisan. So, the team conducted a [WUFI analysis](#), the industry's most advanced analytical simulation of the hygrothermic conditions (the combination of heat and moisture) in a building envelope. The results spoke for themselves, demonstrating that DensElement Barrier System with DensDefy Accessories was indeed the best water-resistive/air barrier for the job. Ting convincingly noted, "It's a one-stop shop. [DensElement and DensDefy make] the design team feel secure that we're handing off the right products to the construction team."

Exceeding Sky-High Expectations

Once the build began, DensElement Barrier System and its DensDefy Accessories were put to the true test. "You need to make sure the whole building is being sealed the right way. By selecting the right [products], we know the building will not leak, is fully air-tight and the insulation will be protected," said Ting.

Among the advantages of DensDefy Accessories are the simplicity and efficiency of installation—even in wet weather. DensDefy™ Liquid Flashing waterproofing, adhesive and detailing compound seals rough openings, penetrations, joints and seams. DensDefy™ Transition Membrane is a self-adhered, butyl-based membrane used on drift or control joints, vertical expansion joints and gaps greater than 1" to ensure envelope continuity. "Together, they perform as though they're a waterproofing membrane."



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And that simplicity is their greatest benefit," said Glisan of DensDefy Accessories' performance on the job.

While "time is money" is just a figure of speech for some people, for the team on a build, it's what drives their business. Glisan went on to talk about how waterproofing materials have only gotten more complex, specifically referring to liquid-applied membranes, which often require installers to double back to ensure the material specifications are being followed. Another challenge when roll-on-specific applications are used is the material dripping onto finished elements of the building—like windows and the floors below. But, DensElement Barrier System removed any worry about spending extra time on quality control.

The heightened level of durability and efficiency Georgia-Pacific's products delivered was echoed by everyone contributing to the project. After using DensElement Barrier System and its DensDefy Accessories for the first time, John Vennera, field supervisor at PG New York, remarked, "we're closing the building up way quicker than normal, which allows the other trades to move along. And, obviously, any client would appreciate that." Mike Whitmore, the purchasing director at PG New York, not only said that the speed of the installation process cut labor costs but also the two-in-one combination of sheathing and weather resistance for a set price from one company made purchasing faster and easier.

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– Darren Glisan, Senior Project Manager at Titanium Construction Services

“There were even [fewer] bills for scaffolding because the guys spent less time on it,” said Whitmore. “Combining the waterproofing and sheathing is good because when it comes to warranty time, you have one single source,” he added.

DensElement Barrier System and its DensDefy Accessories can be installed without damage in rain and even New York’s winter* weather. This helped streamline the installation and overall production schedule by allowing the window installers to move in quicker and, in turn, close the building faster so interior work could stay on schedule.

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A product is only as good as the company standing behind it. From the development of innovative building materials to the distribution network making sure they arrive on time, Georgia-Pacific is proud to be part of Brooklyn’s newest landmark building. It’s been said that everyone in New York has a story. Thanks to those who put their trust in us at 22 Chapel Street, we do too. 20 stories, to be exact.

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*May be installed in temperatures as low as 25°F. Low temperatures may affect the cure timing.

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