

DuPont™ Tyvek® Weatherization Systems

CASE STUDY

DuPont™ Tyvek® CommercialWrap® D District Lofts, Birmingham, Michigan



This four-story structure with underground parking combines professional office space with residences.

The District Lofts is a four-story, urban loft project located in a prominent suburban area of Birmingham, Michigan. This project is a showcase for Mosher, Dolan, Cataldo & Kelly Commercial as it expands its portfolio of mid-rise construction. The design required an exterior weather barrier providing superior water management for the post-tensioned concrete building, framed with an exterior insulation cavity wall—an insulating method that is becoming increasingly popular. Mosher, Dolan, Cataldo & Kelly Commercial has many years of successful experience in both residential and commercial building with DuPont™ Tyvek® Weatherization Systems products and turned to the DuPont™ Tyvek® Specialist Network for weather barrier recommendations for this commercial project.

Challenges

- Constructing the building with post-tensioned concrete—To maximize interior space in the building, Mosher, Dolan, Cataldo & Kelly Commercial used a post-tensioned concrete building method, which allows for a flat plate design. Because post-tensioned concrete is reinforced with steel cables, fewer interior supports are needed. However, if the steel cables are exposed to water, they can degrade, presenting a significant threat to the integrity of the building. It was critical to ensure that the building envelope incorporated an effective weather-resistant barrier.
- Using three different cladding materials—To achieve an eye-catching facade, Mosher, Dolan, Cataldo & Kelly Commercial used stone for the first floor, brick for the second and third floors, and metal for the fourth floor. Therefore, a weather-resistant barrier was required that was compatible with a wide variety of cladding materials. It was also necessary for a barrier that was compatible with the flashing materials used to bridge these facade transitions.
- Using the exterior insulation concept—The rigid insulation panels were applied to the sheathing behind the masonry within the cavity wall. Panels ranged in size from 16 – 24 inches tall and 96 inches long. Although this made the panels easier for the workers to install, the smaller panels resulted in many more joints and seams, which created significantly more opportunities for water to penetrate the wall system. A weather-resistant barrier was required between the exterior insulation and exterior sheathing as added protection.



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Solutions

- The specially engineered surface texture in DuPont™ Tyvek® CommercialWrap® D provides a slight space between the exterior insulation and exterior sheathing to help water drain effectively.
- DuPont™ Tyvek® CommercialWrap® D provides superior water hold-out, helping to eliminate the potential for bulk water intrusion and accumulation, which can lead to mold and mildew.
- DuPont™ Tyvek® CommercialWrap® D integrates seamlessly under a wide variety of commercial facades, including brick, stone, steel panel, copper panel, stucco, marble, granite, and EIFS (synthetic stucco).
- DuPont™ Tyvek® CommercialWrap® D provides excellent UV stability, up to 9 months, to help accommodate commercial timelines.
- Windows and doors are flashed to the wall plane using DuPont™ FlexWrap™ and DuPont™ StraightFlash™ to help ensure protection from water intrusion in problematic areas of the building.

Consistent with Mosher, Dolan, Cataldo & Kelly Commercial's reputation for high-quality construction across a broad spectrum of building types, DuPont™ Tyvek® Weatherization Systems products provide superior performance for the firm's important expansion into commercial construction.

DuPont™ Tyvek® CommercialWrap® D features a specially engineered surface texture. When combined with DuPont™ FlexWrap™ and DuPont™ StraightFlash™, DuPont™ Tyvek® CommercialWrap® D provides an enhanced drainage plane for wall systems and climates that require additional drainage. Also, by controlling airflow, holding out bulk water and allowing interior moisture vapor to escape, it can help reduce the energy needed to heat and cool buildings, and can help to create a more sustainable, durable structure.* In addition, DuPont™ Tyvek® CommercialWrap® D can stand up to rugged commercial construction conditions due to its high tear resistance, high wind load resistance, and 9-month UV resistance.

DuPont™ FlexWrap™ high-performance extendable flashing is uniquely engineered to address the issues of sealing the vulnerable bottom corners of window sills, making one-step, seamless protection possible. DuPont™ StraightFlash™ is used in combination with DuPont™ FlexWrap™ for a durable, self-sealing flashing that protects straight heads and jambs of rectangular windows.

*For a detailed simulation study of the energy impact of improving envelope airtightness, see "Investigation of the Impact of Commercial Building Envelope Airtightness on HVAC Energy Use." NISTIR 7238; June 2005.

Our Specialist Network

The DuPont™ Tyvek® Specialist Network is a national group of more than 190 highly-trained field representatives, including 30 who are focused specifically on commercial building applications. You can count on your DuPont™ Tyvek® Specialist to help you locate a dealer in your area and help ensure proper installation of DuPont™ Tyvek® Weatherization Systems.



DuPont™ Tyvek® Weatherization Systems products met Mosher, Dolan, Cataldo & Kelly Commercial requirements for superior quality and performance.



The DuPont™ Tyvek® Specialist Network assisted Mosher, Dolan, Cataldo & Kelly Commercial with a complete system solution to help seal the building envelope.



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For more information, please call
1-800-44-Tyvek or visit
www.Construction.Tyvek.com