

# OPEN-JOINT CLADDING LOOKBOOK



Designs featuring open-joint cladding are a growing trend in exterior facades. Favored for the clean, modern style the technique creates, it's no wonder many of the world's most advanced building professionals are embracing it. However, it is also a style that requires extra attention to manage the infiltration of exterior weather.

Until very recently, when working with open-joint cladding designs, building professionals had to choose between design integrity and protection. With no signs of the trend slowing down, this industry-wide dilemma inspired us to develop new product solutions in the form of highly UV-resistant air and water barriers.

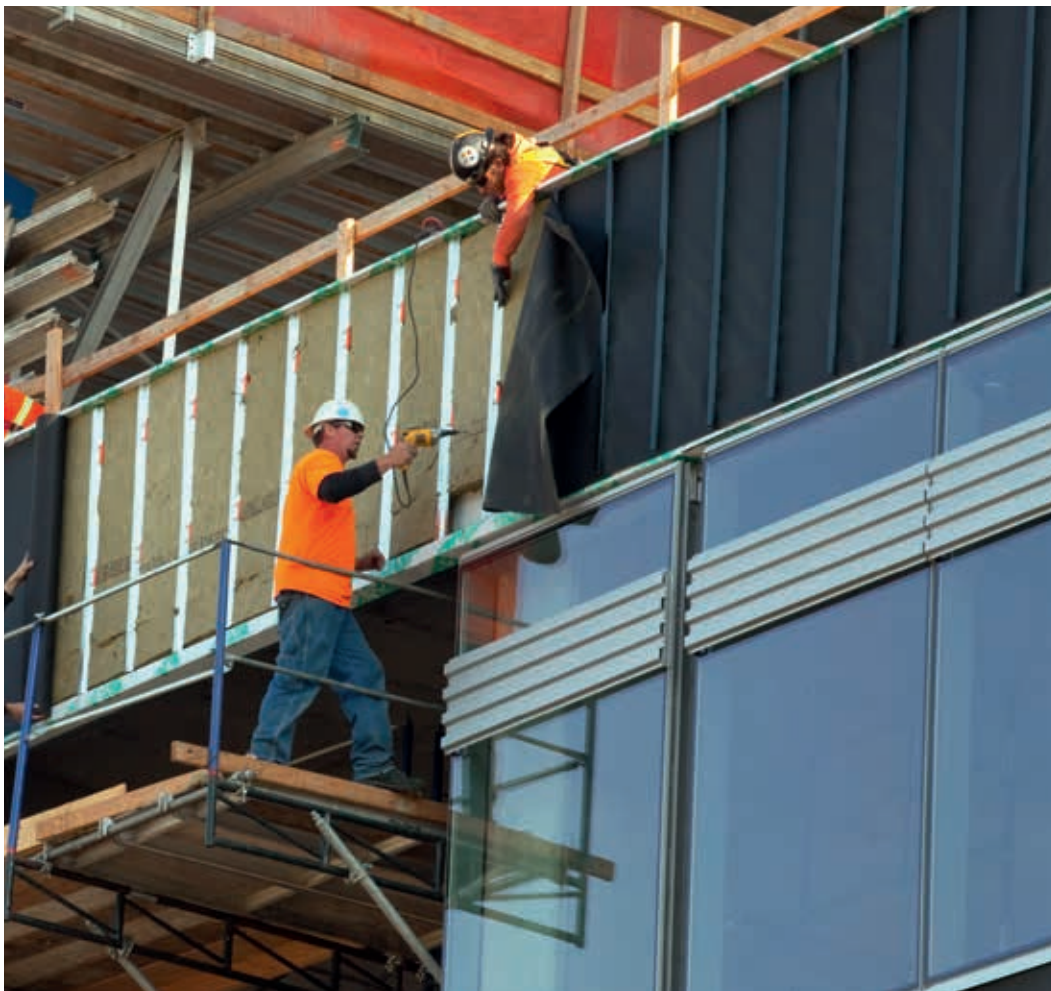
The innovation of two high-performance products designed to protect open-joint cladding has afforded us the opportunity to work on some truly inspirational buildings across North America. This Lookbook is a collection of those projects. Each project overcame a unique set of challenges but, in their own right, pushed the limits of creativity without ever sacrificing protection.

**Be inspired and see what's possible.**

 **DÖRKEN****DELTA<sup>®</sup>**

COLLABORATIVE LIFE SCIENCES BUILDING  
**PORTLAND, OREGON**





## General Information

<b>Building Name</b>	Collaborative Life Sciences Building
<b>Building Location</b>	Portland, Oregon
<b>Country</b>	USA
<b>Project Size</b>	650,000 sq. ft.
<b>Building Type</b>	Multistory
<b>Project Type</b>	University Educational and Research
<b>Type of Cladding</b>	Perforated aluminum



## Project Profile Collaborative Life Sciences Building – Portland, Oregon

# DELTA<sup>®</sup>-FASSADE S University Innovation



*When the exterior of a building is full of holes, how do you keep the wind and water out?*

### → Project Description

One of the many innovations of the Collaborative Life Sciences Building is that it was created as a partnership of three different universities. Oregon Health & Science University, Oregon State University, and Portland State University worked together to build a new allied health, academic, and research building that would meet the needs of all three organizations.

The \$295 million project is the first on this scale to combine the resources of multiple universities, expanding life sciences, pharmacy, medical, and dental education with 500,000 square feet of instructional and research space.

SERA Architects from Portland and CO Architects of Los Angeles designed the \$295 million structure. CO Architects

was responsible for programming and design, while SERA acted as executive architect, providing sustainability design and project management. JE Dunn was responsible for Construction Management services.

The building incorporates numerous sustainable design innovations, including eco-roofs, non-potable water storage for toilet flushing, atrium heat recovery, and low-ventilation fume hoods. Innovative material re-use included salvaging oil drilling pipes for use as foundation piles. The LEED<sup>®</sup> Platinum building is predicted to have 45% energy savings thanks in part to its thin profile that allows the labs to get daylighting from two sides.

The exterior of the CLSB is made up of pre-finished perforated panels of aluminum that are fabricated in a corrugated profile – a design element that gives great visual

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Country	USA
Project Size	650,000 sq. ft.
Building Type	Multistory
Project Type	University Educational and Research
Type of Cladding	Perforated aluminum
Total Building Costs	\$295,000,000
Owners	Oregon Health & Science University, Oregon State University and Portland State University
Architect	SERA Architects and CO Architects
Consulting Engineers	Morrison Herschfield
General Contractor	J.E. Dunn Construction Group
Year	2014



DELTA®-FASSADE S is rolled into place for a trouble-free installation.

interest but also makes it extra important to manage the filtration of exterior elements. This is especially critical in the notoriously high wind and wet weather of Oregon, where gusts are known to get up to 80-100 mph, creating an additional challenge in meeting new energy-efficient building codes. The team needed to create energy-efficient panels with a tight assembly budget, and find an effective and durable water shedding system to use underneath the perforated open joints. What stands between the perforated panels and the exterior stud had to be durable, breathable, maintainable, economical, and aesthetically pleasing.

DELTA®-FASSADE S was considered for the project as it is designed to channel water from wind-driven rain and snow to the outside of a structure, is neutral black in color, and provides extreme UV resistance with as much as 40% of the material allowed to be exposed, known to improve the performance of the insulation. No test existed for this

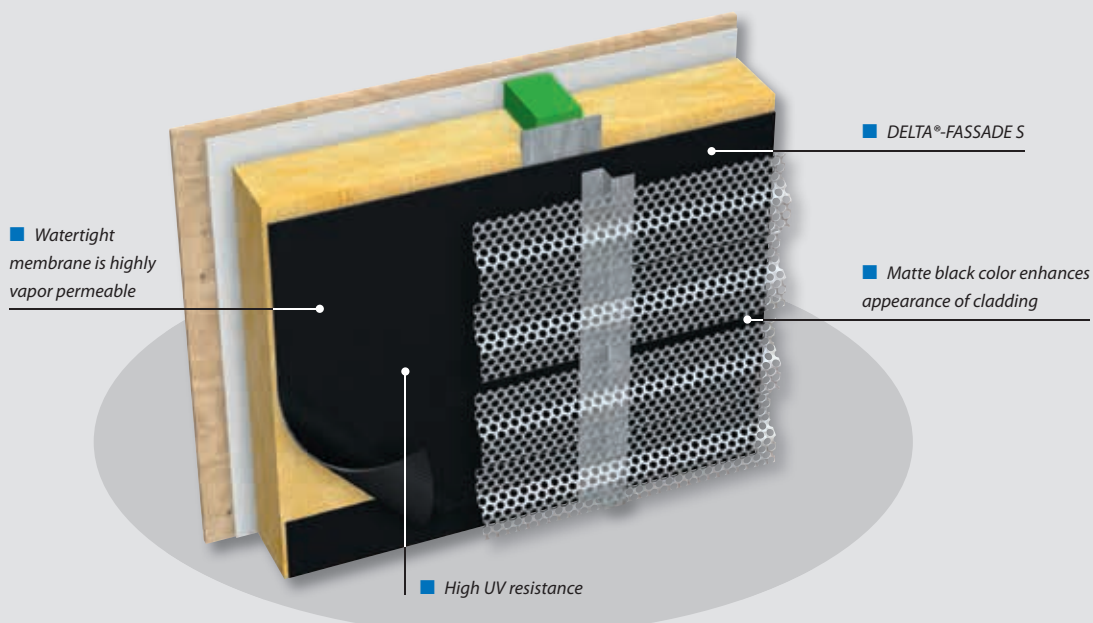
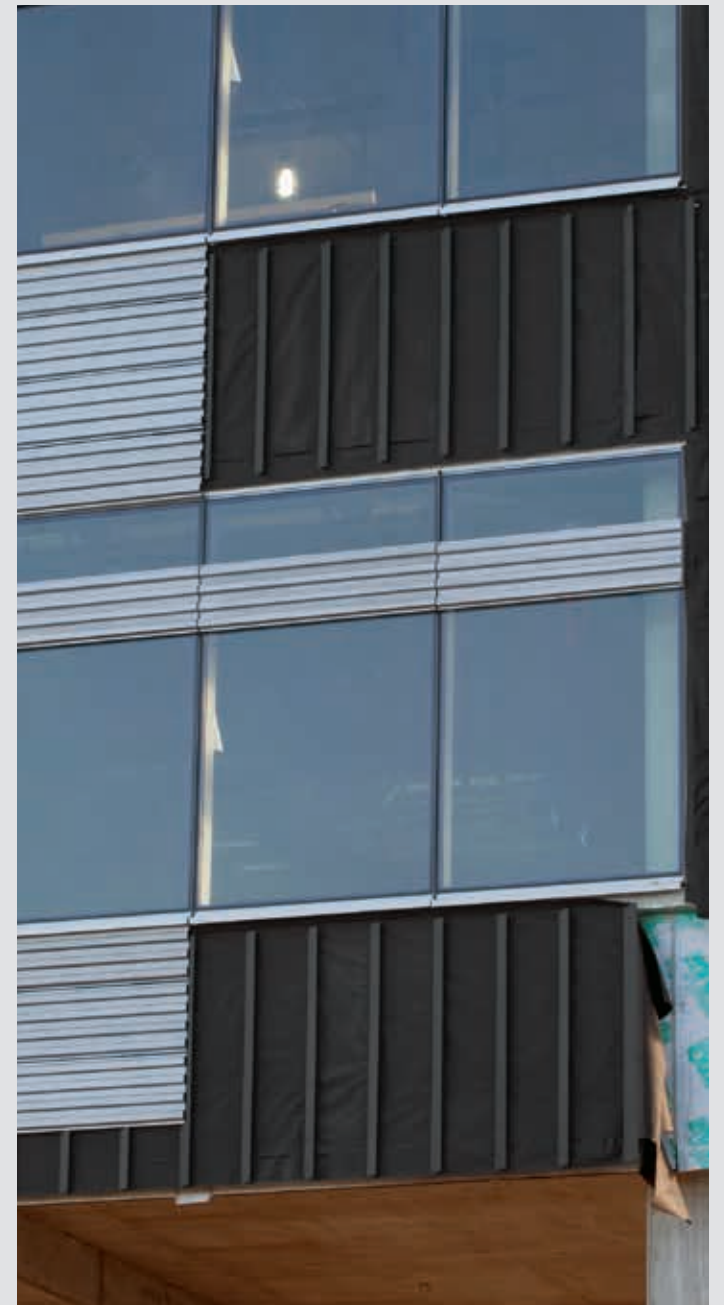


Creative design allows daylighting from two sides.

kind of design, so QEDLABS created a test based on ASTM E1233-06. The results showed that DELTA®-FASSADE S stood up to expected conditions and beyond, without any product failure. DELTA®-FASSADE S was specified as the water-resistant barrier for this demanding application as it exceeded the requirements. The watertight membrane is highly vapor permeable and extremely tear resistant. Highly stabilized against damage from UV exposure, the barrier is designed for use in cladding systems that have open joints up to 2" (50 mm) wide, which expose up to 40% of the entire facade surface.

Open-joint cladding systems require extreme water and vapor protection. If the water-resistant barrier is not durable in extreme weather or stable when exposed to prolonged periods of UV light, the system will fail.

DELTA®-FASSADE S is the only UV-stable water-resistant barrier to pass ICC-AC38 (ESR-2932).



GROTTO SAUNA  
**GEORGIAN BAY, ON CANADA**



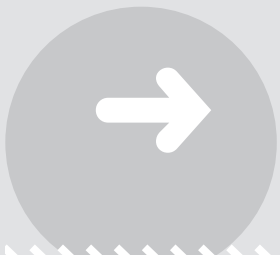
*In 2015, the Grotto Sauna won the Design Excellence Award from OAA and the Architizer+ Award.*





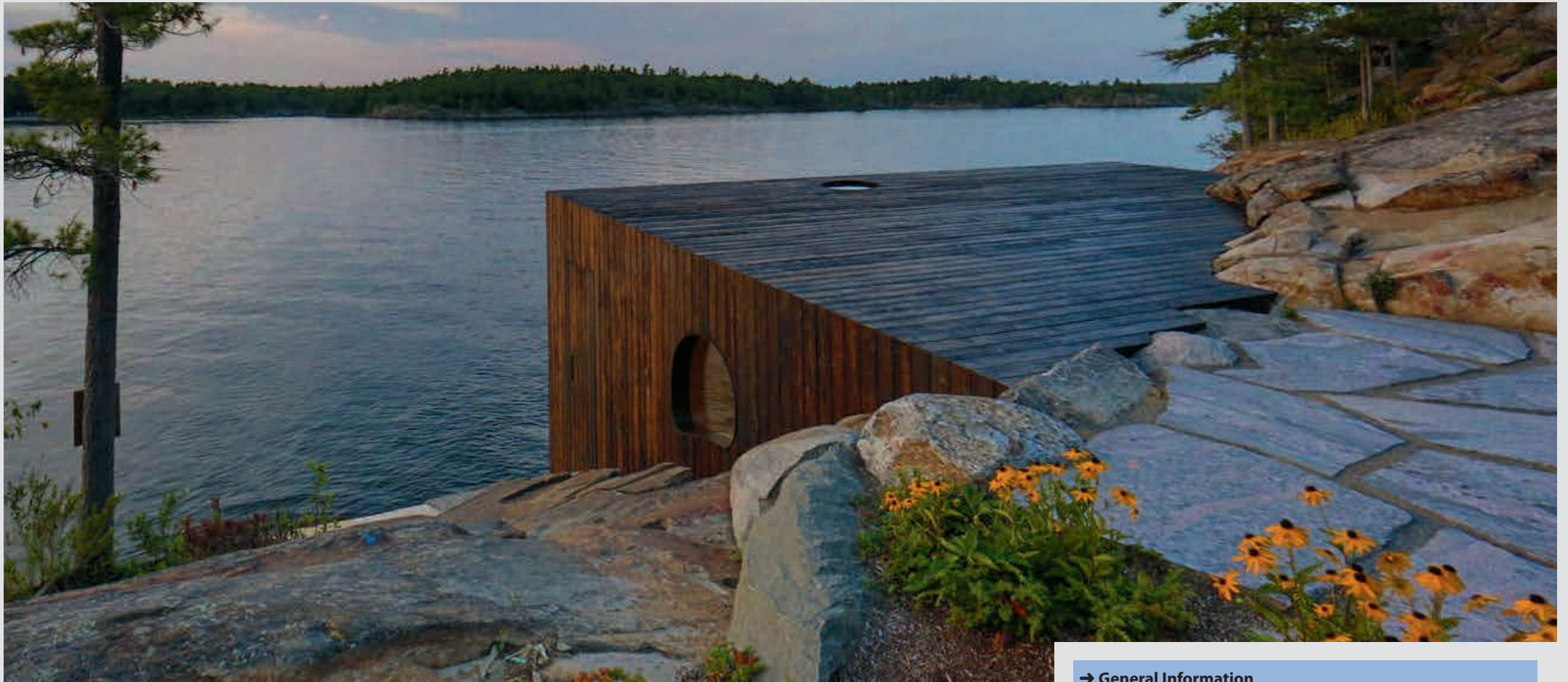
## General Information

Building Name	Grotto Sauna
Building Location	Georgian Bay, Ontario
Country	Canada
Project Size	800 sq. ft.
Building Type	Sauna
Project Type	New Construction
Type of Cladding	Red Cedar Planks



## Project Profile Grotto Sauna

# Ambitious architecture in a remote and demanding environment



© Grotto Sauna — Photographs by Jonathan Friedman

### → Project Description

The Grotto Sauna near Parry Sound, Ontario, Canada, drew inspiration from the historical definition of a grotto – a secret water-filled cave, concealed within unexpected rock formations. Perched on a private island in Lake Huron, the OAA Design Excellence Award-nominated building is embedded in the ancient rock formation, the Canadian Shield, which forms the backbone of North America. The sculpted space complements and becomes part of the prehistoric landmark.

Challenging the standards of current practices in the construction industry, every detail was communicated with a millwork and steel fabrication partner. Together, a new process of fabrication was developed, utilizing state-of-the-art 3D technology to scan, model and build the Grotto, so that the building would sit naturally in the rock formation. To complement the surreal environment, PARTISANS decided on a simple, burnt Red Cedar exterior. In contrast, the curved White Cedar interior helps optimize air flow.

The Grotto requires two high-performance ovens. Insulation was needed not only to protect its components from heating or cooling too quickly, but also to make the Grotto energy efficient. The space behind the wood panels creates convection currents that allow the skin to breathe through the ventilation pores that were carved into seats and seams of the cedar panels.

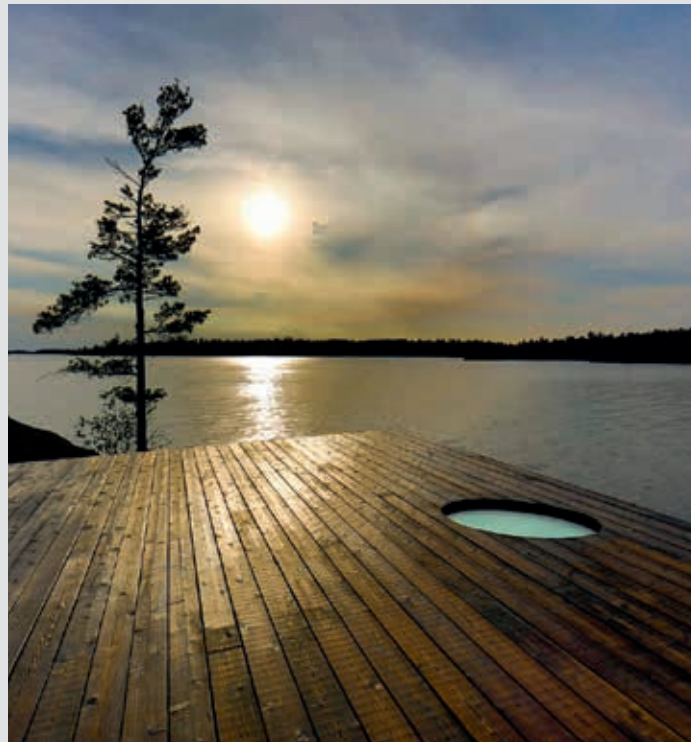
PARTISANS chose DELTA®-FASSADE S, a water-resistive barrier (WRB), to accommodate for the extreme temperature changes occurring inside and outside of the structure. Pouring water on the oven creates steam that makes the humidity within the structure jolt up in short, extreme bursts. DELTA®-FASSADE S has high vapor permeability, allowing for the moisture vapor that accumulates inside to escape. On the exterior, it acts as a durable drainage plane, channeling water from wind-driven rain and snow to the outside of the structure. The watertight membrane helps protect the building enclosure from damaging effects of moisture infiltration.

### → General Information

Building Name	Grotto Sauna
Building Location	Georgian Bay, Canada
Country	Canada
Project Size	800 sq. ft.
Building Type	Sauna
Project Type	New Construction
Type of Cladding	Red Cedar Planks
Total Building Costs	N/A
Owner	Private
Architect	PARTISANS
Consultant	Building Science Consulting, Inc.
Project Management	PARTISANS
Sub-Contractor for DELTA® Product	Jordan Construction
Year	2014



Simple angles complement the rock formation



Burnt Red Cedar planks allow the landscape to shine

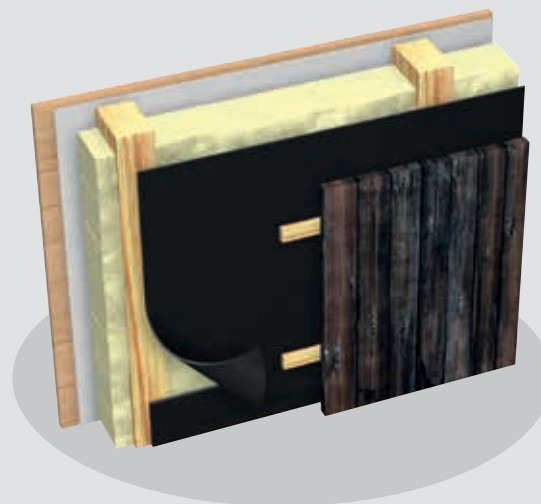


#### → Challenges

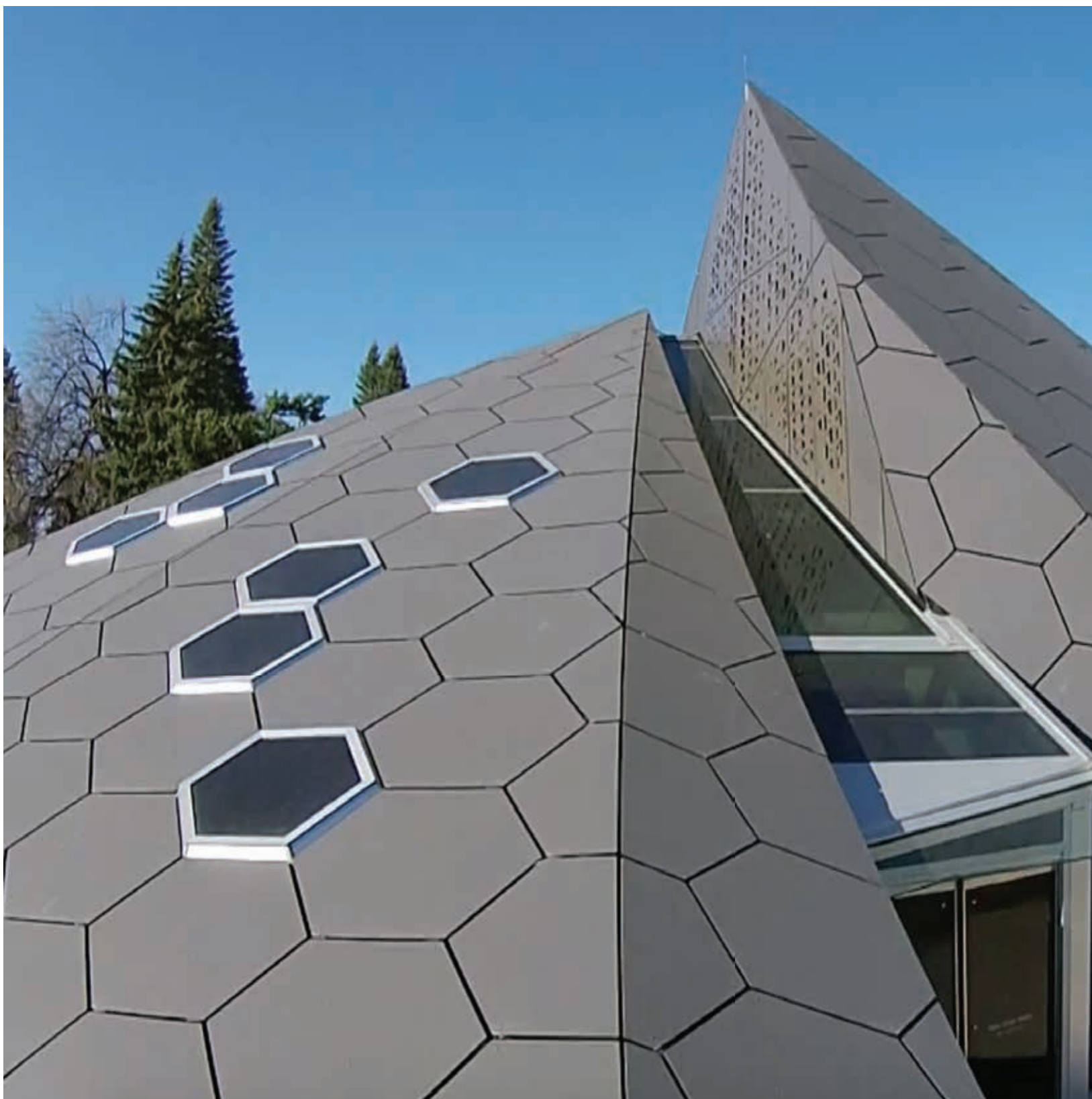
When PARTISANS met on site, they knew that their most prominent challenge was to make a free-standing structure that respected and complemented the environment. Understanding the rock formation was the first step in construction. After examination of the setting, it was determined that the best course of action was to prefabricate the building and deliver it to the site by barge and crane.

PARTISANS chose DELTA®-FASSADE S, a lightweight and tear-resistant WRB, that could stand up to the rigors of the pre-fabrication of the Grotto Sauna, making installation fast, easy, and reliable. This technologically advanced membrane could withstand the stress of moving to the jobsite.

Open-joint cladding was to be installed on The Grotto Sauna, so PARTISANS needed a WRB that was UV resistant. DELTA®-FASSADE S has excellent stability against ultraviolet light. Its matte black coloring creates a deep 3D effect that makes the Red Cedar panels visually “pop” forward from the black background. DELTA®-FASSADE S will provide sustainable moisture and UV protection behind the Grotto Sauna’s open-joint cladding for many years to come.



SCIENCE PYRAMID — DENVER BOTANIC GARDENS  
**DENVER, COLORADO**





## General Information

<b>Building Name</b>	Science Pyramid, Denver Botanic Gardens
<b>Building Location</b>	Denver, Colorado
<b>Country</b>	USA
<b>Project Size</b>	5,258 sq. ft.
<b>Building Type</b>	Science Exhibition Space
<b>Project Type</b>	New Construction/Addition
<b>Type of Cladding</b>	Swisspearl® composite panels
<b>Total Building Costs</b>	\$6 million
<b>Owner</b>	City of Denver

INSPIRED BY NATURE, PROTECTED BY SCIENCE.  
**BUILDING SCIENCE ON THE OUTSIDE,  
BIOLOGICAL SCIENCE ON THE INSIDE**



This project is a perfect example of balancing aesthetics and performance. DELTA® products check all the boxes in terms of performance and aesthetics.



## BUILDING FOR SCIENCE

It started out as a competition for the design of the new focal point in the Denver Botanic Gardens; a science building meant to showcase the world-renowned research that was previously inaccessible to the public. The competition included a very specific design requirement of elemental biomimicry. The client wanted to push the boundaries in so many directions. The biomimicry was important in that the building needed to showcase all of the worldwide research it would eventually house. In essence, the science of the building needed to be as innovative as the science found within it. The winning design came from a pragmatic reference: the location within which it would be situated.

The winning design for the science building was to be a pyramid – a 34-foot-high pyramid. In order to incorporate contextual regionalism, the building's massing mimicked local mountain formations. Its form was inspired by a seedling breaking its way through the soil's surface. And influenced by the bees, which are so critical in the botanical process, Swisspearl® fiber cement rain screen panels were used to represent the honeycomb of a beehive.



## NOT YOUR EVERYDAY PYRAMID

Typically, a pyramid as a 3D lean-to, or three-pin arch, is quite structurally efficient. However, with this specific form, offsets were created vertically, horizontally, and laterally. Also, a pyramid doesn't include a distinction between wall and roof – it is something of a hybrid, and for this particular pyramid, the faceted sides meet at the spine, where a glazed ribbon of skylights cuts diagonally through the building's footprint. These elements created quite a few structural and enclosure-related challenges. Fortunately, Studio NYL, structural engineers of record and façade designers of the Science Pyramid, love a good challenge.

The structure was to remain a lean-to, keeping the spatial requirements below void of any columns, in order to use as much of the already conservatively sized space as possible. But when the forces were transferred slightly lower to accommodate the spine and the striking gap between the two halves of the pyramid, a force-transfer for bending needed to be created. This created another challenge, as the resulting force-transfer was much less efficient than forces found in a typical pyramid, and needed to have bigger members to accommodate it.

## THE RIPPLE EFFECT

The 5,258-square-foot structure was to include 16 sides, with painted steel tubes and angular windows. The shape, usage, types of cladding, and climate all had to be factored in when searching for the right materials. These materials needed to simultaneously maintain a watertight exterior and the appropriate interior environmental conditions.

The biggest challenge was in the transitions. The design created many more transitions than found in a traditional pyramid; not just from opaque plane to opaque plane, but from opaque plane to the ribbon of skylights. Moving across one plane to the next, they might appear vertical and seem simple enough, but there are actually slight bends in the sheathing there, requiring some laps and having it closed off with flashing to maintain the continuity. This continuity is critical because whenever there is a failure in the envelope, or any leaks or breaches in the air barrier, they are almost always at the transition points.

The building challenges had a ripple effect across the design of the whole building, including the envelope.

# SPOTLIGHT ON DELTA®



## PERFORMANCE VS. AESTHETICS

While many enclosure firms serve as problem solvers, focusing solely on performance, Studio NYL takes it a step further, collaborating on the designs themselves with the architects in addition to requisite performance variables. The relationship with the architects meant that from the beginning, they looked into which materials made the most sense for the needs of the building. This project is a perfect example of balancing aesthetics and performance.

They initially looked into standard commercial roofing solutions, but issues primarily surrounding constructability and the overall look of the design made those unviable options. There was also a need for a product with a redundancy, a barrier that would stop the initial rainfall as well as the UV. Using redundant systems is important because if a small component of that system fails or is installed incorrectly, it will not make the entire project performance fall apart. In this design, redundancy came in the form of a rain screen system combined with two barrier membranes in the building envelope assembly. The fiber-reinforced concrete (FRC) cladding, due to its open-joint design, has a primarily aesthetic function, as it does not shed rainwater like a conventional cladding. The primary water-resistive barrier (WRB) is provided by DELTA®-FASSADE S, which manages virtually all rainwater that hits the exterior of the building. The membrane acts as a permanent UV barrier at the same time.

A redundant WRB and air barrier is provided by DELTA®-VENT SA deeper inside the building enclosure assembly below the insulation. Compatibility and a shared manufacturer helped make this decision, but it was ultimately the proven performance and benefits of the self-adhered membrane's exclusive edge-lap that made DELTA®-VENT SA the obvious choice.

Factoring in all of that, as well as the best wall assembly for handling this specific type of orientation and design in terms of aesthetic and functional performance and constructability, the decision was made to use the combination of Swisspearl panels and DELTA® products. The building required an underlayment that would suit the wall system, which is technically a mix of wall and roof panels.

The extremes of Denver's winter and summer climate as well as the high UV index made the performance requirements even more stringent. That, combined with the fact that there is a large gap between panels, one inch throughout, increases the UV exposure, so a resilient product was needed.

The product would have to balance many variables to connect everything and achieve the aesthetic form that the architect had intended from the beginning. It was also important to avoid the creation of a thermal bridge, which would pose energy loss and condensation problems. However, should condensation form, the high permeability of DELTA®-FASSADE S would allow it to dry outward.

In many designs, architects want to create reveals or depth between panels, and that often comes in the form of open-joint rain screens or open-joint cladding which, in turn, brings about the need for UV resistance.

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***"There aren't many products on the market that compare to the testing and track record that Dörken has – especially with DELTA®-FASSADE S and DELTA®-VENT SA.***

***We have a few projects going on right now that are using DELTA® products for that very reason. We have used DELTA® products in many climate zones."***

*William Babbington, AIA PE LEED®  
AP BD+C, Principal and Façade Design  
Director at Studio NYL, and Secretary -  
Building Enclosure Council  
National Board*







# PROOF IS IN THE CREDENTIALS

Working with a consultant from the manufacturer on the product details is also wise. Especially for a roof application but, really, any time, running the details by a consultant is beneficial because nobody knows the product's strengths and limitations better. While manuals and catalogs are informative, you simply cannot anticipate all the details that might come about with unique projects, especially if using the materials in non-standard ways. Even if the consultant was confident that the product was going to perform the way it should, including them in your project ensures that you don't jeopardize the warranty you and your clients both want and need. For the Science Pyramid, Babbington consulted with Dörken Product Manager Peter Barrett to ensure the water-resistive barrier (WRB) would provide all the performance criteria of a regular WRB along with long-term resistance to UV light and the impact of wind, rain, and snow.

"With this project, we really needed materials that were tried and true, as the time frame from the competition entry to the opening of the building was just nine months. The sequencing was critical!"

*William Babbington*

***"DELTA®-FASSADE S meets the most important qualities I look for in a WRB in open-joint rain screen systems: UV resistance – so very critical. The product's origins are in European roofing, meaning it's going to be quite a bit more resilient under the construction foot traffic – very strong and pliable. And last, it doesn't compromise on performance or aesthetics – it delivers on both."***

*William Babbington*

## SO, WHY CHOOSE **DELTA®** AIR AND MOISTURE BARRIERS?

DELTA®-FASSADE S is the WRB ideal for open cladding. The watertight membrane is highly vapor permeable and extremely tear resistant. Highly stabilized against damage from UV exposure, the barrier is designed for use in cladding systems that have open joints up to 2" (50 mm) wide, which expose up to 40% of the entire façade surface. It is also the only UV-stable WRB that is tested to and has passed ICC-AC38.

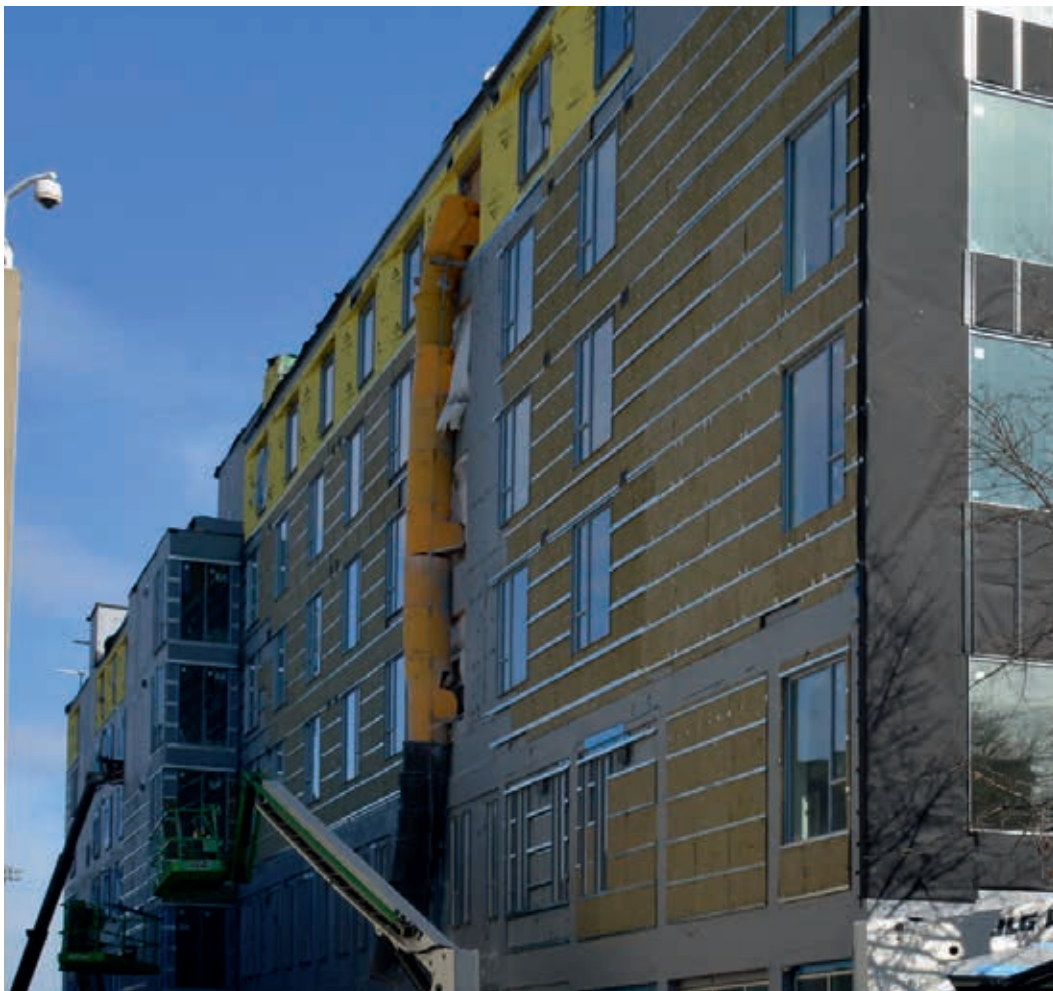
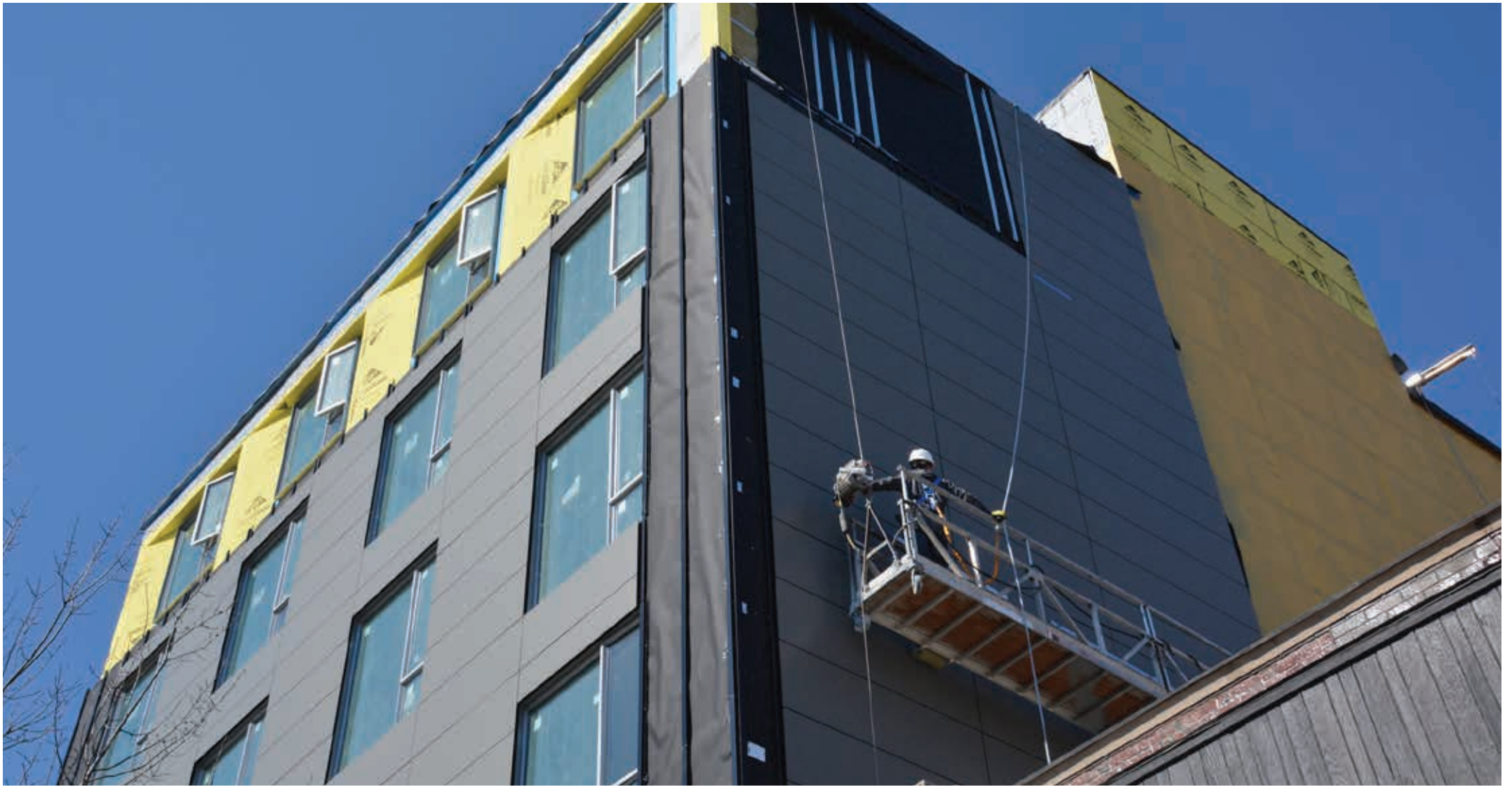
DELTA®-VENT SA is a high-performance, three-layer water-resistive barrier and air barrier. Highly vapor permeable, watertight, and aggressively self-adhering, the product ensures energy efficiency and protection from wind-driven rain. It exceeds the most stringent air tightness requirements of the ABAA (Air Barrier Association of America) when tested as per ASTM E2357-11 Standard Test method for Determining Air Leakage of Air Barrier Assemblies, surpasses the requirements of a 60-minute Grade D building paper, and passes ASTM D1970 Nail Sealability test.

## STUDIO NYL

Studio NYL, a Boulder, Colorado-based structural engineering and façade design firm known for its exemplary skills, has earned the trust and respect of architects around the world for delivering truly innovative design-led solutions that exceed the conventional. [www.studionyl.com](http://www.studionyl.com)

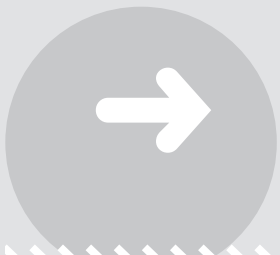
1047 COMMONWEALTH AVENUE  
**BOSTON, MASSACHUSETTS**





## General Information

Building Name	1047 Commonwealth Avenue
Building Location	Boston, Massachusetts
Country	USA
Project Size	90,000 sq. ft.
Building Type	Multistory
Project Type	Multifamily Residential Rental Housing
Type of Cladding	Trespa Open Joint
Owners	Urban Spaces LLC, Cambridge, MA
Architect	Neshamkin French, Boston, MA



## Project Profile

1047 Commonwealth Avenue – Boston, Massachusetts

# DELTA<sup>®</sup>-FASSADE S

## For the Demands of Open-Joint Cladding



1047 Commonwealth Avenue, originally a two-story building, was expanded to six stories to create 180 studio apartments

### → Project Description

1047 Commonwealth Avenue was originally a two-story building that the developer, Urban Spaces LLC, planned to expand to six stories. The plan was to create 180 studio apartments for graduate students and young professionals.

Nearby Boston University was in the market for temporary student housing while the dorms were being remodeled. They reached an agreement with Urban Spaces to lease the apartments for the next two years.

While it normally would take a year to fill a new apartment building, 1047 Commonwealth was filled as soon as it was completed. The building will return to market rate housing when the university agreement ends.

The architectural firm, Neshamkin French, needed to design a building with an attractive exterior, both to make it a welcome addition to the neighborhood as well as to make the building more desirable to tenants in a competitive market.

The owners also wanted an energy-efficient building that could help control the operating costs, especially during the bitter cold Boston winters. They also plan on this building having a long service life, so they looked for materials that would provide a long, trouble-free service life.

### → General Information

Building Name	1047 Commonwealth Avenue
Building Location	Boston, Massachusetts
Country	USA
Project Size	90,000 sq. ft.
Building Type	Multistory
Project Type	Multifamily Residential Rental Housing
Type of Cladding	Trespa Open Joint
Owners	Urban Spaces LLC, Cambridge, MA
Architect	Neshamkin French, Boston, MA
Consultant/ Spec Writer	R.J. Kenney Associates
General Contractor	Metric Corporation
Sub-Contractor for DELTA <sup>®</sup> Product	Lavada Inc.
Year	2016



*DELTA®-FASSADE S is highly vapor permeable and extremely tear resistant*



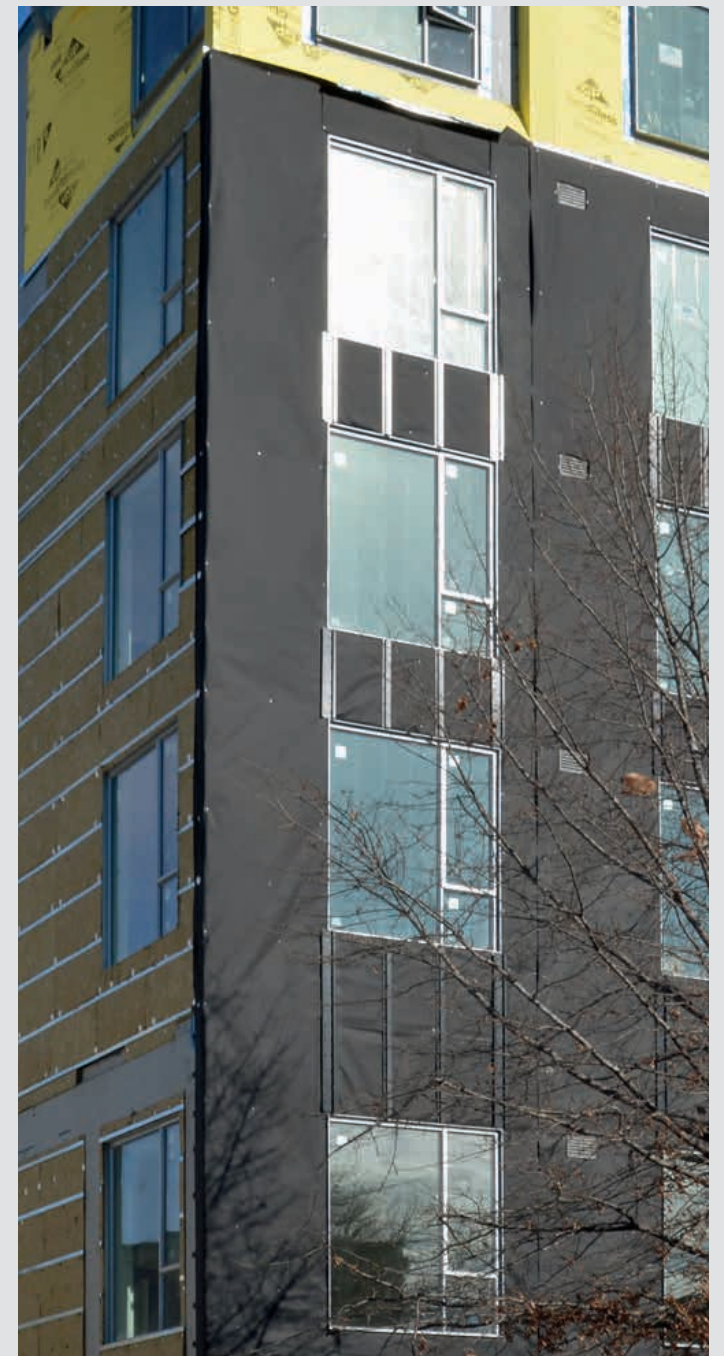
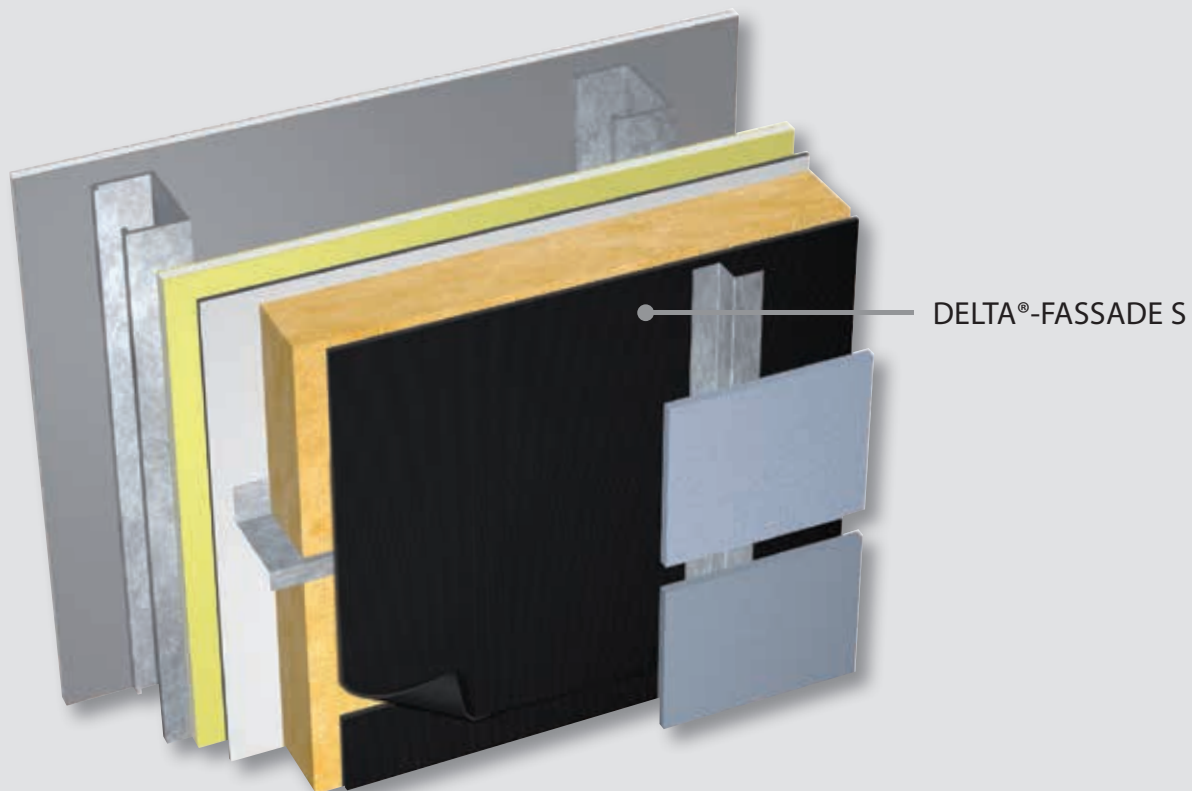
*DELTA®-FASSADE S is designed specifically for the demands of open-joint cladding*

## **DELTA®-FASSADE S**

The architects selected open-joint cladding from Trespa as the exterior cladding. Because they were using an open-joint cladding, they needed the water-resistant barrier to survive the damaging effects of UV for the life of the building exterior. Since the barrier is partially exposed, open-joint cladding also requires a barrier that can provide extreme water and vapor protection.

The architects specified DELTA®-FASSADE S, designed specifically for the demands of open-joint cladding. With the highest UV rating of any barrier, DELTA®-FASSADE S is highly vapor permeable and extremely tear resistant.

The black color of the DELTA®-FASSADE S barrier also enhanced the appearance of the open-joint cladding, adding depth and beauty.



MAISON DU LAC GRENIER  
**ESTEREL, QUEBEC**





## General Information

Building Name	Maison du Lac Grenier
Building Location	Esterel, Quebec
Country	Canada
Project Size	2,300 sq. ft. + basement
Building Type	Residential
Project Type	New Construction
Type of Cladding	Rough-sawn cedar



## Project Profile

Maison du Lac Grenier - Esterel, Quebec

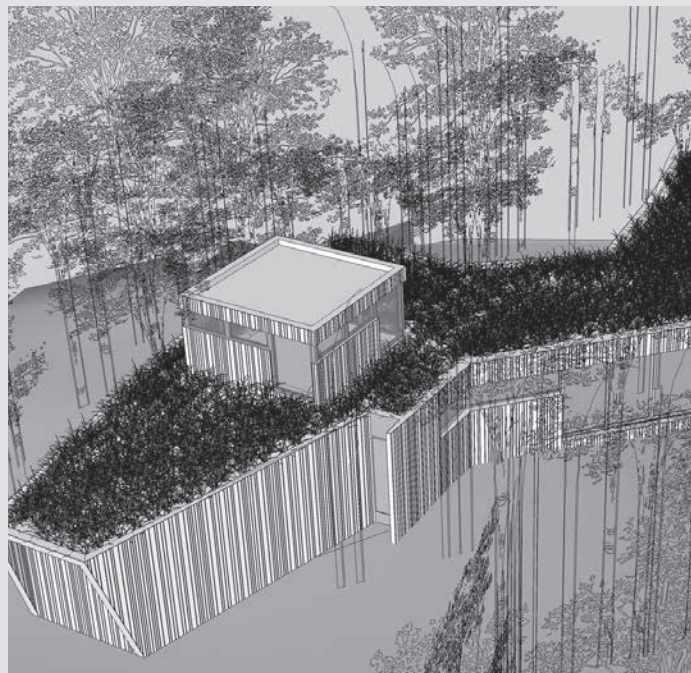
# DELTA®-FASSADE S – Design with open joints



### → Project Description

The Lac Grenier house follows the tradition of innovative, modern architecture that characterizes L'Estérel and several of its houses which display the influence of Frank Lloyd Wright. The house is long with a low profile, built to a human scale, with large fenestrations and a strong sense of livability. It has been designed for this specific site on Lake Grenier to respect the views as well as the natural elements. It is intended to have an organic shape that integrates into the topography of the site and embraces the existing flora. The rough-sawn cedar cladding with open joints gives the house a modern look while, at the same time, keeping the natural feel.

The owners wanted to retain the intimacy of the terrain that benefits from the dense forest on both sides, the road, and the lake as much as possible. They were looking for a contemporary architectural style that is accessible, while still dedicated to the site and surrounding nature.



### → General Information

Building Name	Maison du Lac Grenier
Building Location	Esterel, Quebec
Country	Canada
Project Size	2,300 sq. ft. + basement
Building Type	Residential
Project Type	New Construction
Type of Cladding	Rough-sawn cedar
Total Building Costs	N/A
Owner	Private
Architect	Paul Bernier Architecte, Montreal, Quebec
Contractor	Leonald Goyette, Chertsey, Quebec
Year	2013





#### → Challenges/Details

The architect chose a footprint that minimized the impact on the existing vegetation and a profile that adapted to the existing topography, rather than man-made landscaping. This resulted in a particularly interesting detail; the screened porch that appears to float.

Architect Paul Bernier chose a profiled vertical cladding made of cedar with small joints in between the elements to create more visual depth. Under these circumstances, the water-resistant barrier had to be UV resistant since the structure behind the cladding would be more exposed to the weather than with a regular closed cladding system. DELTA®-FASSADE S was chosen for its very high UV resistance, water tightness and outstanding vapor permeability. DELTA®-FASSADE S is black with a UV-resistant coating, as are the accessories, DELTA®-FASSADE TAPE and DELTA®-FASSADE FLASHING.

Because it is watertight and very vapor permeable, precipitation stays out while internal moisture is allowed to diffuse to the outside. Under an open-joint cladding, DELTA®-FASSADE S will protect the structure from snow and rain while letting humidity evaporate out of the wall.

DELTA®-FASSADE S is plain, deep black with no printing, blending perfectly into the structure, adding depth to the profiled cladding. DELTA®-FASSADE S provides the most durable and long-lasting protection that brings aesthetic visions to life.



Photo: Paul Bernier



SPA BALNEA  
**BROMONT-SUR-LE-LAC, QUEBEC**





## General Information

Building Name	SPA BALNEA
Building Location	Bromont-sur-le-lac, Quebec
Country	Canada
Project Size	2300 sq. ft. + basement
Building Type	Commercial
Project Type	New Construction/Addition
Type of Cladding	Ipé wood with Cedar furring strips painted black



## Project Profile SPA BALNEA - Quebec, Canada

### **DELTA®-FASSADE S – Design with open joints**



#### → Project Description

On SPA BALNEA, DELTA®-FASSADE S was used by BLOUIN TARDIF Architecture - Environnement to add depth of beauty and superior performance to the building enclosure. SPA BALNEA is located in the heart of the Eastern Townships, perched on a hillside in a private nature reserve overlooking Lake Gale. About an hour away from busy Montreal, 10 minutes from the ski resort of Bromont, you can find peace in this beautiful spa with Finnish saunas, a Turkish bath, outdoor hot tubs, a lake, slow food, and resting areas with fire places. In addition to all this splendor, you can choose from a large variety of massages, yoga and assorted treatments. The facilities are housed in the original, old-fashioned building with thick stone walls that were built in the 1970s and the principal spa building, which was built in 2005.

The owner was looking for a functional, inviting new building to be a complement to the immersive spa experience as well as a connection between the two existing structures. And at the same time, it should meld with the surrounding forest. BLOUIN TARDIF's answer was a centrally located minimalist pavilion on stilts. The open-joint wood cladding and wooden walkways integrate the building into the landscape in a contemporary style. It houses the reception area of the spa as well as the offices, creating more space for the spa and treatments in the principal building.

#### → General Information

Building Name	SPA BALNEA
Building Location	Bromont-sur-le-lac, Quebec
Country	Canada
Project Size	2,300 sq. ft. + basement
Building Type	Commercial
Project Type	New Construction/Addition
Type of Cladding	Ipé wood with Cedar furring strips painted black
Total Building Costs	\$1.2 mill. (incl. exterior landscaping and extension of existing building)
Owner	SPA BALNEA (Denis Laframboise, Stéphanie Emond)
Architect	BLOUIN TARDIF Architecture - Environnement
Contractor	Construction des Sommets
Year	2013



### → Challenges

Since the spa was to remain open during construction, and peace and quiet is an essential part of the spa experience, BLOUIN TARDIF developed a wooden structure, which was preassembled by Bonneville Homes. It was delivered to the site and installed on triangular metal stilts. This way, disturbances were kept to a minimum.

The architects at BLOUIN TARDIF Architecture - Environnement spent a great amount of time on the development of the exterior. They wanted to create a cladding that appeared to be floating. For durability purposes, ipé, a very hard hardwood from the Brazilian rainforests, was chosen for the open-joint cladding. Because it is also a very dense wood, its weight was taken into consideration in the construction. The ipé cladding was installed horizontally on vertical cedar furring strips for additional durability. In order to keep the floating look, the furring strips were painted black.

Because the ipé will undergo some shrinkage after a couple of years, the corner detail required special consideration. The designers chose a gap instead of connected corners that would become undone over time. The contractor meticulously ensured precise and detailed finishing.

With this type of cladding system, the structure underneath is much more exposed to the weather (and to the eye) than with a regular closed cladding system. For this reason BLOUIN TARDIF chose DELTA®-FASSADE S as the water-resistive barrier. DELTA®-FASSADE S has a black and UV-resistant coating, ideal protection from the harsh sun to which it will be permanently exposed. Because DELTA®-FASSADE S is water tight and very vapor permeable,

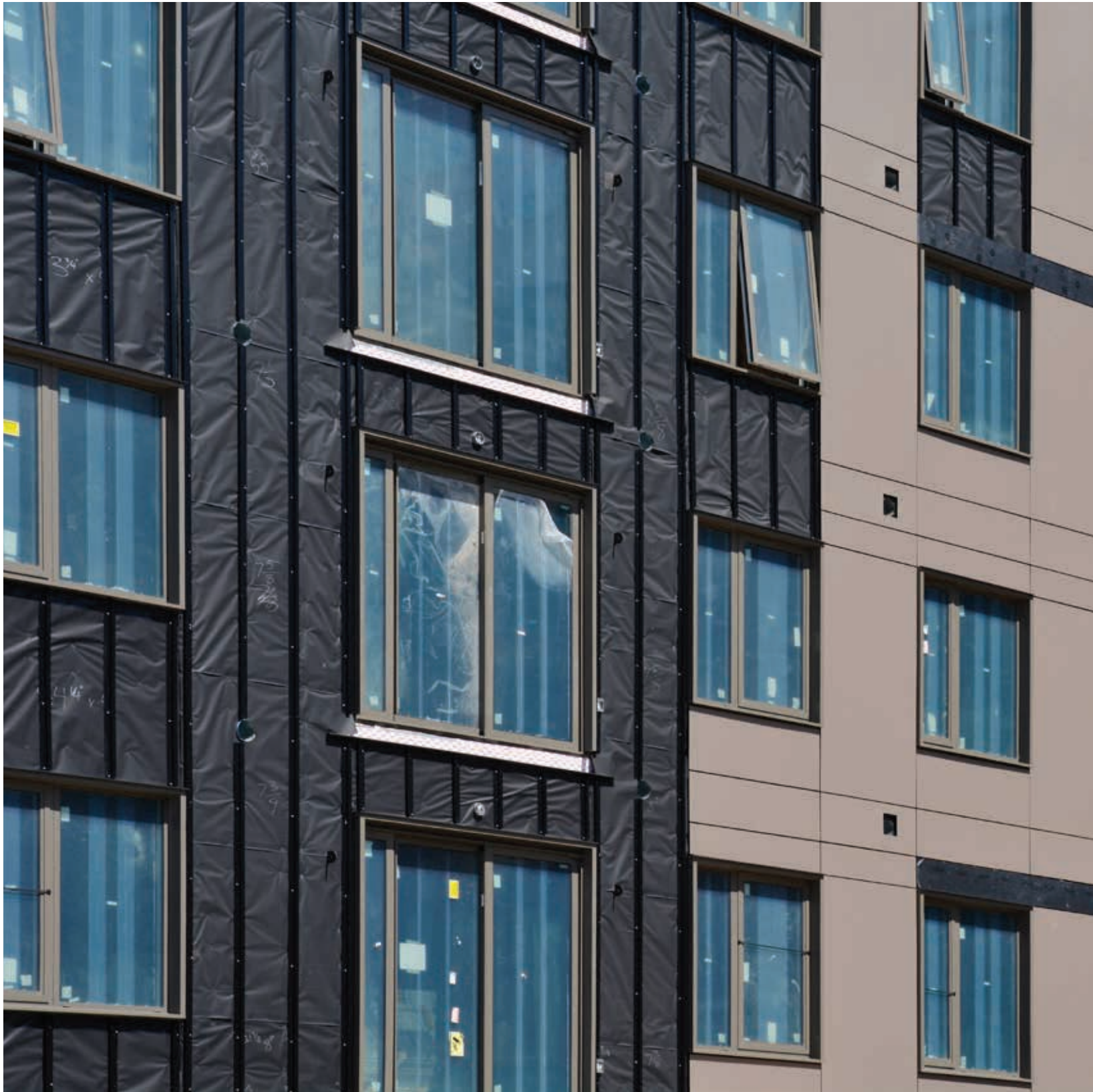


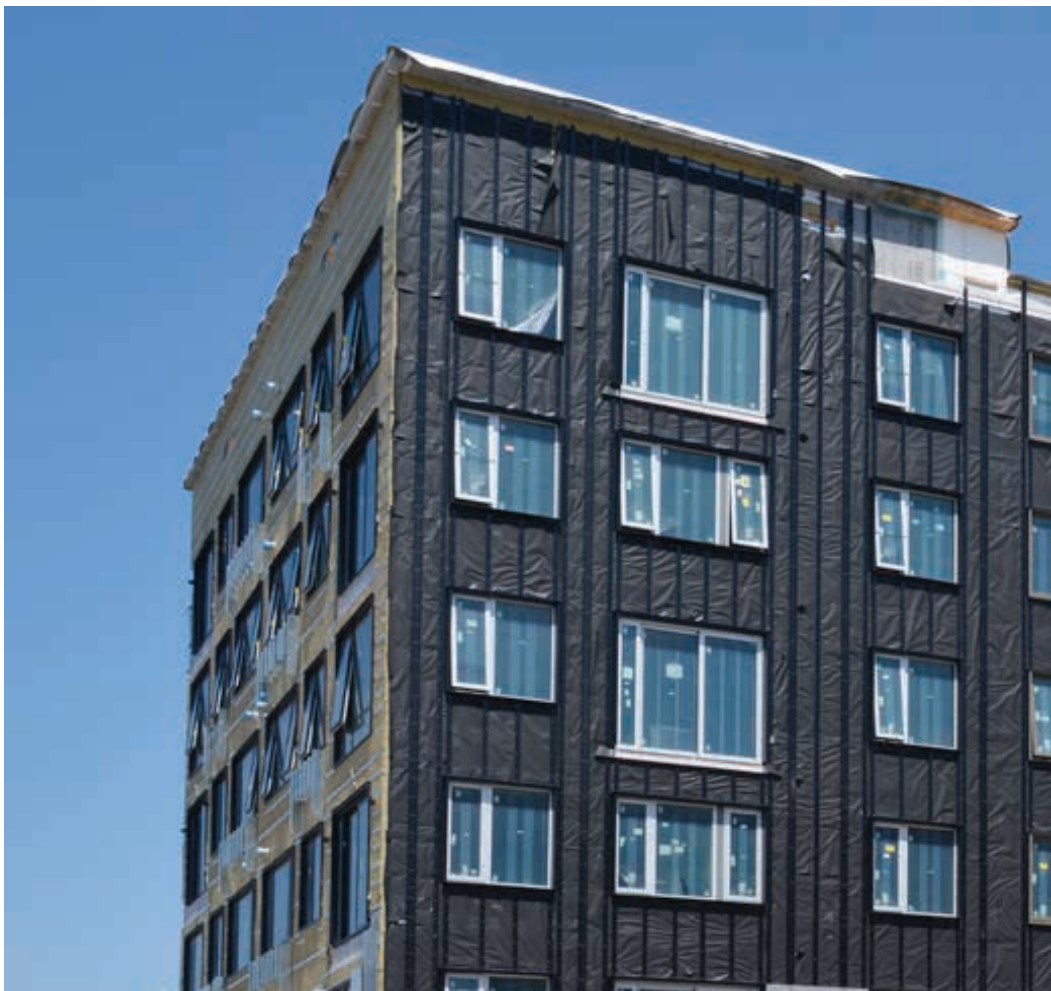
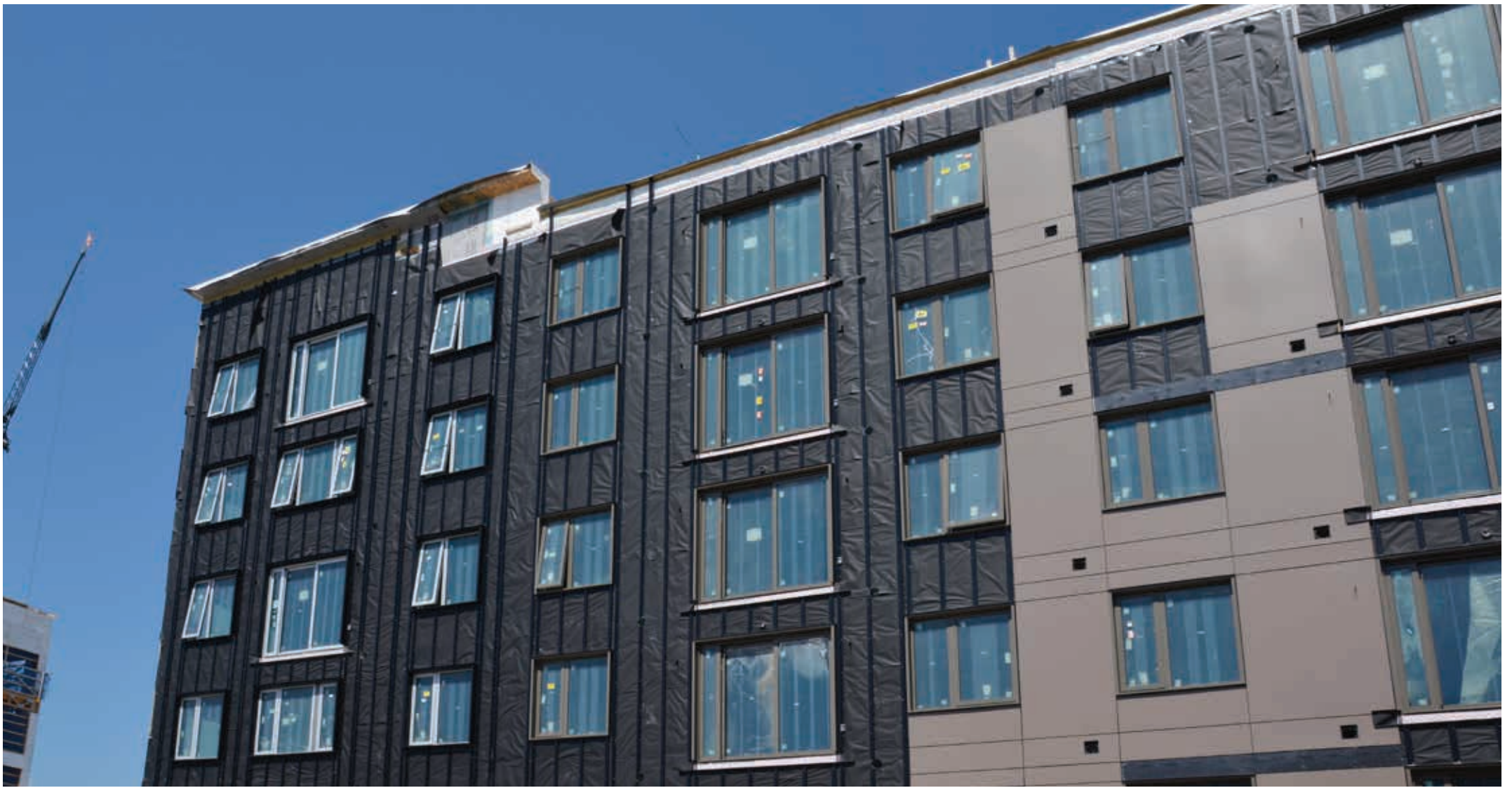
precipitation will stay out while allowing internal moisture to escape. Under the open-joint cladding, DELTA®-FASSADE S will let humidity evaporate out of the structure while resisting rain and snow. DELTA®-FASSADE S, along with the associated accessories, is plain black with no printing. It will blend into the structure, giving the sought-after floating effect and a desirable 3D look.

DELTA®-FASSADE S provides the most durable and long-lasting protection that brings aesthetic visions to life.



CLIPPERSHIP WHARF  
**BOSTON, MASSACHUSETTS**





## General Information

Building Name	Clippership Wharf
Building Location	65 Lewis St. East, Boston
Country	USA
Project Size	200,000 sq. ft.
Building Type	Five-story wood construction luxury condominiums
Project Type	Multifamily
Type of Cladding	Trespa® Meteon®
Total Building Costs	500 units with a selling price between \$500,000 and \$800,000 per unit
Original Owner	Lendlease
Architect	The Architectural Team
Consultant	Designed by DOERR



## Project Profile Clippership Wharf - Boston, USA

# DELTA®-VENT SA | DELTA®-FASSADE S PLUS

### Battling the Elements When Building on a Harbor



#### → Project Description

Clippership Wharf is built on one of East Boston’s most historic wharfs, only steps away from Maverick Square and just minutes from downtown Boston. The 200,000 sq. ft. project is a multifamily, five-story luxury condominium building that will feature restaurants, recreation, and public art—all with views of the Boston skyline.

When the owner of the project, Lendlease, started planning Clippership Wharf, the goal was to create a building that was the first of its kind for Boston Harbor. When building on a harbor, however, there are constant concerns around wind-driven rain and snow and their impact on the construction of the building, as well as the long-term integrity of the building. To overcome these challenges, the owner worked

with leading architects at The Architectural Team. The team was committed to ensuring that the building performance and integrity were protected, while maintaining design and aesthetics.

Above all, they needed the right products to keep wind, rain, and moisture out of the system to create high-performance enclosures that will withstand the test of time. Dörken Systems Inc. was the right partner for the job.

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General Contractor	Lendlease
Sub-Contractor for DELTA® Product	Sunrise Erectors, Inc





The team installing DELTA®-MULTI BAND 100, a versatile tape with very strong adhesion

## Finding Water-resistant Barriers that were Airtight and Vapor Permeable

The exterior of Clippership Wharf incorporated a prefabricated wood frame construction with fire-rated OSB sheathing. This approach, coupled with the city's climate zone and unique location challenges, called for the use of a vapor permeable air- and water-resistive barrier. No matter how moisture entered the system, through construction or intense wind-driven rain and snow, the team needed to be confident that any incidental moisture could escape and not cause serious damage to the building enclosure. For these reasons, the team selected DELTA®-VENT SA and DELTA®-FASSADE S PLUS barriers to protect Clippership Wharf.

### DELTA®-VENT SA

DELTA®-VENT SA has industry-leading vapor permeability that, when paired with its superior airtight and water-resistive properties, made it the ideal choice for the Clippership Wharf project. DELTA®-VENT SA helps to keep air and water out of the system, while also allowing any trapped moisture to escape, eliminating the risk of rot, mold, and other problems caused by water. For the Clippership Wharf project, this meant DELTA®-VENT SA would help address unique design and location concerns, while helping maintain healthy and comfortable interiors for years to come. Additionally, Dörken was one of the few manufacturers that met the NFPA 285 requirements.



DELTA®-FASSADE S PLUS is highly vapor permeable, and also extremely durable and tear resistant

### DELTA®-FASSADE S PLUS

Clippership Wharf constitutes four buildings, totaling 150,000 sq. ft. of open-joint cladding, and incorporating approximately 10,000 sq. ft. of Trespa® cladding. This unique design element, paired with the climate challenges, called for the use of DELTA®-FASSADE S PLUS.

Open-joint cladding systems require extreme weather protection. If the barrier isn't up for the job, the wall system will fail. DELTA®-FASSADE S PLUS is a breathable, UV-resistant barrier with a front-side adhesive for secure overlaps, specifically designed to provide advanced moisture protection for open-joint cladding systems. Given that the design of Clippership Wharf incorporated a prefabricated wood-frame construction, the decision to use DELTA®-FASSADE S PLUS assured protection from wind-driven rain and snow, with the ability to channel this bulk water to the outside of the structure.

While being highly vapor permeable, DELTA®-FASSADE S PLUS is also extremely durable and tear resistant. The product withstands the rigors of the jobsite, and is tough enough to stand up to the intense wind and weather known to hit the harbor.

### Overcoming Construction Challenges

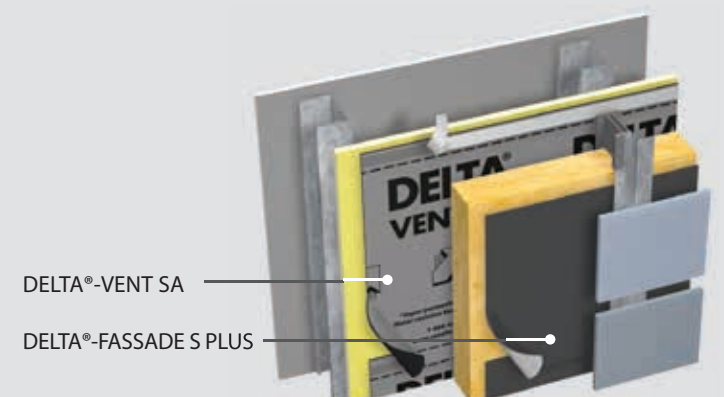
Overall, the installation of DELTA®-VENT SA was a success, and the product's self-adhesive edge lap, which works to ensure airtight overlaps, made it easy and convenient to install. The team also expressed the benefit and value of the accessory components, both DELTA®-MULTI BAND and DELTA®-FLEXX-BAND—which served as critical components to the performance of the assembly. Though it was difficult to install during the winter season, where high winds and wind-driven rain were quite prominent, the challenges were overcome by thorough product knowledge and a team that was well trained to install DELTA®-VENT SA.

## Maintaining Long-term Building Integrity

By getting ahead of unique climate and location challenges using proven DELTA® products, the Clippership Wharf team is confident that this significant and one-of-a-kind project will maintain optimal performance well into the future.

**DELTA®-VENT SA meets the most stringent airtightness requirements when tested to ASTM E2357 (Air Barrier Assembly Test), and is NFPA 285 compliant, Red List Compliant (DECLARE), with Health Product Declaration® (HPD 2.0) available.**

**DELTA®-FASSADE S and DELTA®-FASSADE S PLUS are the only UV-stable, water-resistive barriers to pass ICC-AC38 (ESR-2932).**



DELTA®-VENT SA

DELTA®-FASSADE S PLUS

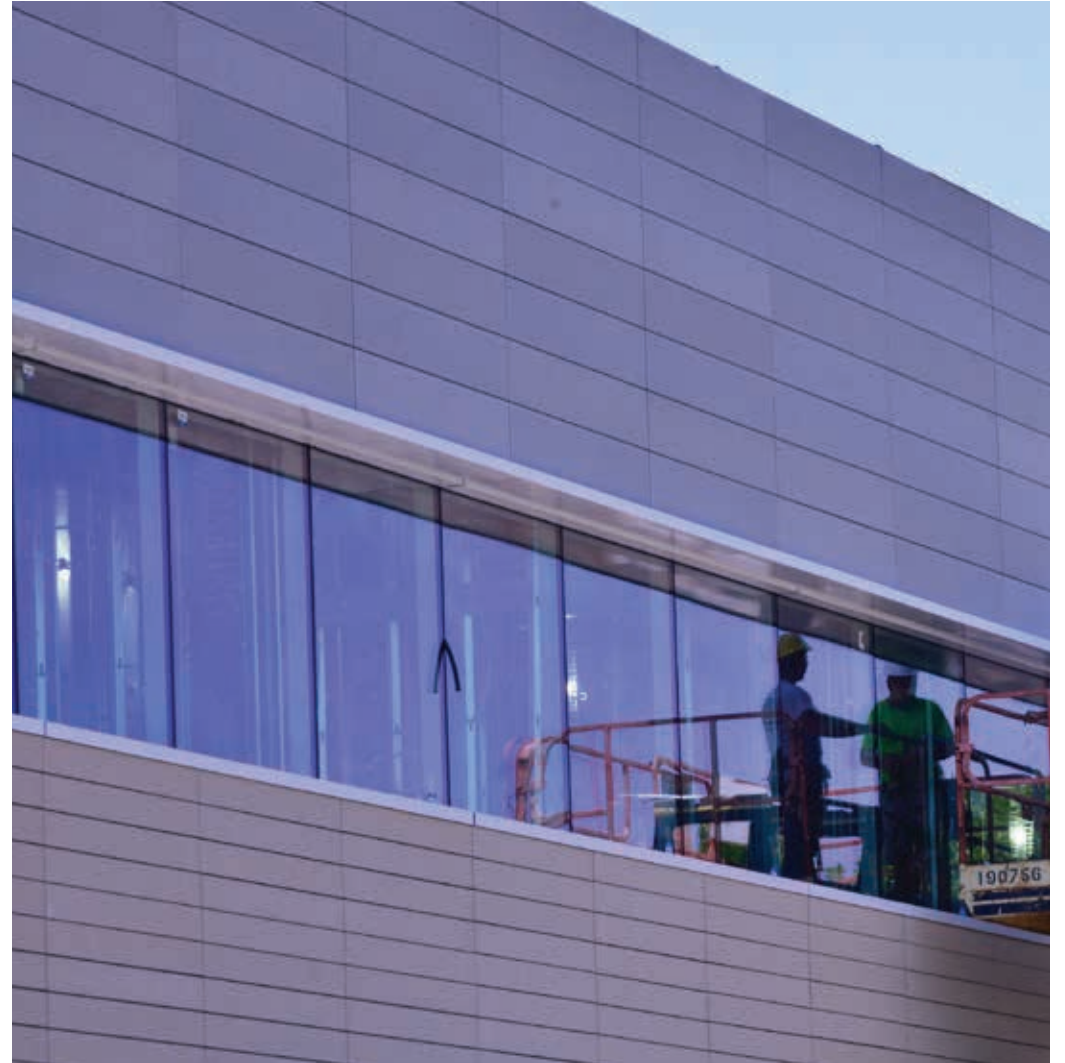
## CACTUS CLUB CAFÉ, TORONTO, ONTARIO



The award-winning Cactus Club Café fine-dining flagship is described by Architizer as having a rough, muscular exterior featuring textured concrete plank paired with a warm and inviting atmosphere, even in the face of fierce Ontario weather.

The 20,000-square-foot restaurant designed by Assembledge+ is protected by DELTA®-FASSADE S, a water-resistive barrier that acts as a durable drainage plane, channeling water from wind-driven rain and snow to the outside of the structure – performance is maximized without compromising aesthetics in open-joint cladding applications.

## 380 EAST MAIN STREET, BAY SHORE, NEW YORK



TPG Architecture designed an 18,000-square-foot, two-story, Class-A office building and was retained afterwards by the tenant to design a multi-practice space out of the building's interior. Built using durable, lightly textured fiber cement, the exterior cladding is fire resistant, provides durability, and maintains a sought-after look with minimal signs of aging.

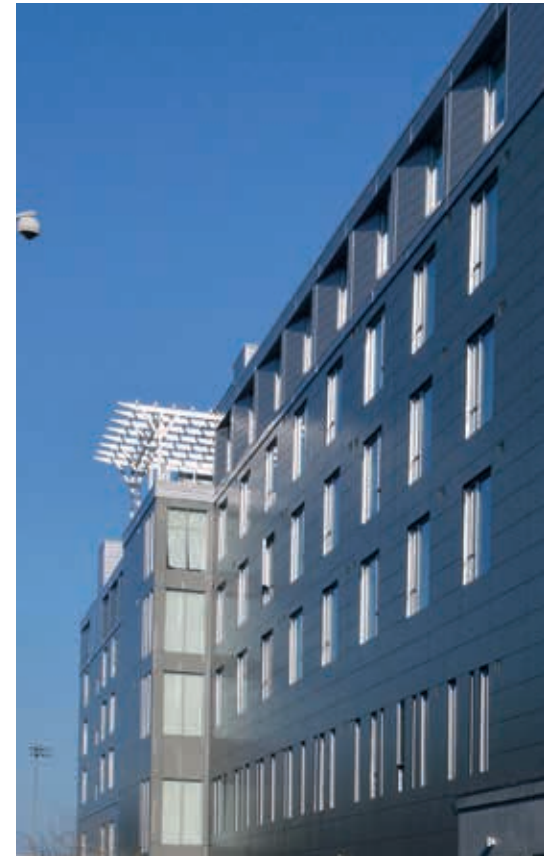
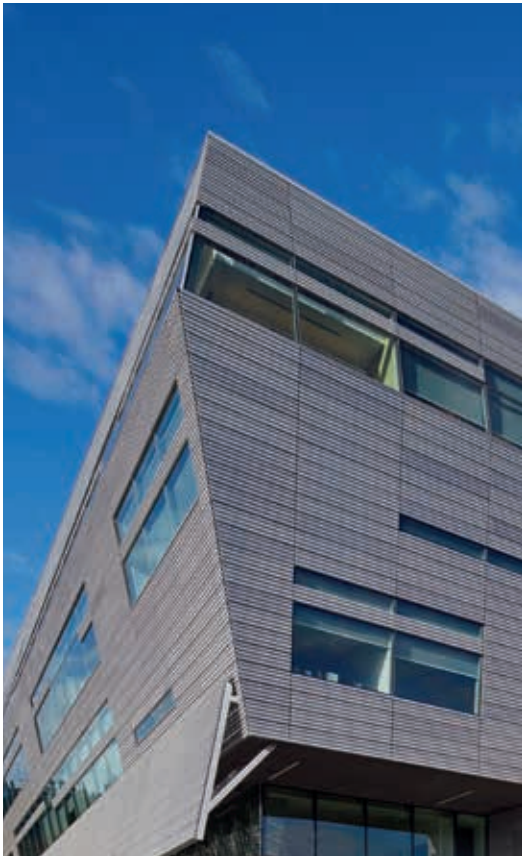
Although offering many architectural design benefits, fiber cement is not well equipped to protect a building against moisture, which is why DELTA®-FASSADE S was installed to enhance the building envelope's overall performance.

## CLARK UNIVERSITY, WORCHESTER, MASSACHUSETTS



Due to high levels of humidity in September, Clark University underwent an upgrade to the outer walls of its 30,000-square-foot Sackler Science Center to ensure the comfort of students and faculty, and the protection of sensitive laboratory equipment.

To bring the university's stunning façade alive, Boston architectural firm Architerra Inc. chose an open-joint cladding. They specified DELTA®-FASSADE S as the air and moisture barrier to not only enhance the creative design but to avoid issues caused by damaging UV rays.



## About Dörken Systems Inc.

Dörken delivers innovative, high-performance air and moisture barriers for commercial and residential construction under the DELTA® brand name.

A North American manufacturer based out of Ontario, Canada, Dörken Systems Inc. is a subsidiary of Ewald Dörken AG, a leading European developer and manufacturer of waterproofing and drainage products sold worldwide.

**[dorken.com](http://dorken.com)**

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