



Acoustic, Visual & Physical Privacy for Post-COVID Work Environments

**BENDHEIM**

# FLIGHTHUB OFFICE CASE STUDY

## ACOUSTIC, VISUAL & PHYSICAL PRIVACY WITH CHANNEL GLASS

### THE CHALLENGE

Bendheim's Lamberts® channel glass solves the design challenge of separating the private offices, located along the perimeter of the octagonal building, from the collaborative spaces in the core. The double-glazed channel glass partition walls transmit daylight, creating a connection between the private and shared work spaces. At the same time, they obscure views and muffle sounds, affording an outstanding level of privacy:

1. acoustic privacy with STC rating of 38, comparable to the STC rating of a standard opaque interior wall;
2. visual privacy through the obscuring, daylight-friendly double layer of Solar "fine mesh" textured channel glass;
3. physical privacy by establishing private offices, separated from the communal office spaces, but allowing light into the inner core of the space.

**"CHANNEL GLASS ALLOWS LIGHT TO FILTER FROM THE EXTERIOR TO THE INTERIOR CORE, EVOKING THE FEELING OF BEING IN NATURE WITHOUT PERMITTING DIRECT VIEWS INTO THE OFFICE SPACES." – JOAN RENAUD, PARTNER, ACDF ARCHITECTURE**

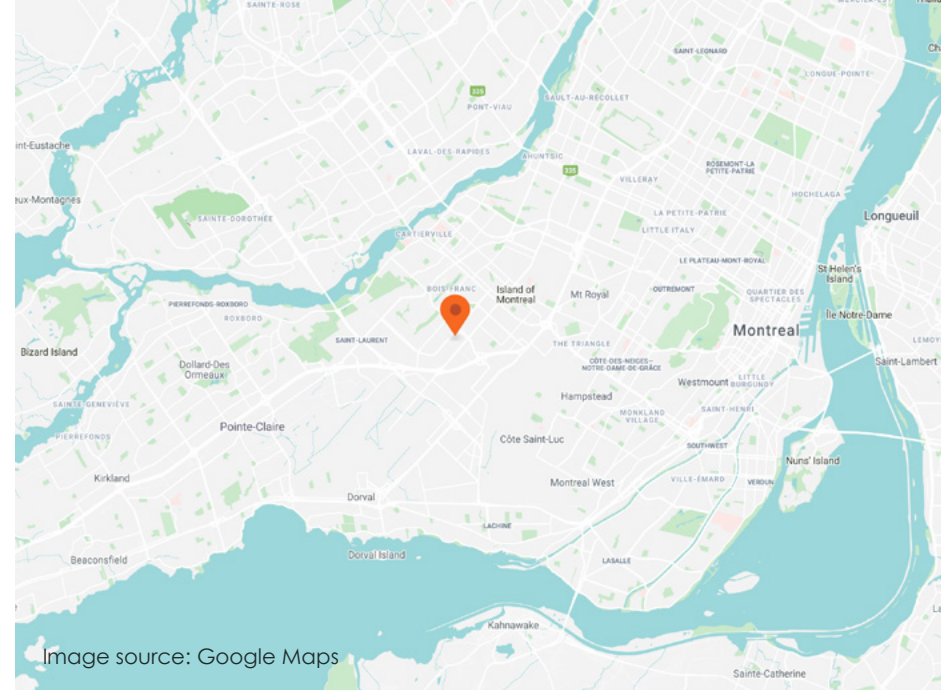


Image source: Google Maps


### AT A GLANCE

- FlightHub Online Travel Agency, Saint-Laurent, Quebec
- Design by ACDF Architecture, Montreal, Quebec
- Double-glazed channel glass partition walls by Bendheim Wall Systems Inc., Wayne, New Jersey
- Installation by DiVETRO, Delson, Quebec
- Approx. Glass Area: 4,000 sq. ft.
- Max. Glass Panel Size: 10" W x 103" H x 1/4" T
- Glass Type: Lamberts® Solar™ "fine mesh" textured channel glass, featuring 40% post-consumer recycled content; safety tempered and SGCC certified
- Photos by Maxime Brouillet and DiVETRO





Photo by DiVETRO



“THE INNOVATIVE DESIGN INCORPORATED  
CHANNEL GLASS TO SERVE AS A BARRIER  
BETWEEN THE COMMON AND PRIVATE ZONES,  
WITH AN ALLURING SOLAR FINISH THAT ENABLES  
NATURAL LIGHT TO FILTER FROM THE EXTERIOR TO  
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ACDF ARCHITECTURE

Channel glass wall layout



## THE SOLUTION

The renovated FlightHub office occupies the entire sixth floor of the building at 3333 Blvd. Cote-Vertu Ouest (approx. 12,800 sq. ft.). The floor plan is an unusual octagonal shape, presenting a unique design challenge. After much discussion with the company and their employees, ACDF synthesized the company's main needs into 3 themes – Technology, Travel, and Tribes – which drove the design concept.

According to the architects, the choice of channel glass was derived from these design objectives and constraints. The most efficient office layout called for a centralized shared-space module, radiating from the elevator core. It contains a reception area, the main kitchen, conference room, and a lounge. All private work spaces are physically separated from this central core through the double-glazed



Photo by DiVETRO



channel glass partition wall. The daylight-friendly, privacy-friendly glass wall simultaneously divides the space and maintains a sense of openness and connectivity.

"In creating zones that are insulated from one another, ACDF was faced with the challenge of extending the concept of 'flow' to the supply of natural light," said Joan Renaud, ACDF Architecture's Partner. Channel glass was the sought-after solution, providing "an acoustic and visual buffer between the lively, colourful ambiance of the open spaces and the tribal work zones."





## BUDGET-SMART GLASS DESIGN

At FlightHub, channel glass creates a perfectly circular interior wall that divides the space elegantly and on budget. Better known for high-profile, luxurious projects, such as the Nelson Atkins Museum of Art in Kansas City, MO and South Street Seaport Pier 17 in NYC, channel glass is a uniquely budget-friendly solution for curved wall applications. The relatively narrow 10 5/16" glass channels turn the curves with ease, requiring only the frames to be custom-curved. As a result, curved walls using channel glass are much more affordable than walls designed with traditional bent glass, and offer the added benefits of acoustic and visual privacy.



Photos by DiVETRO





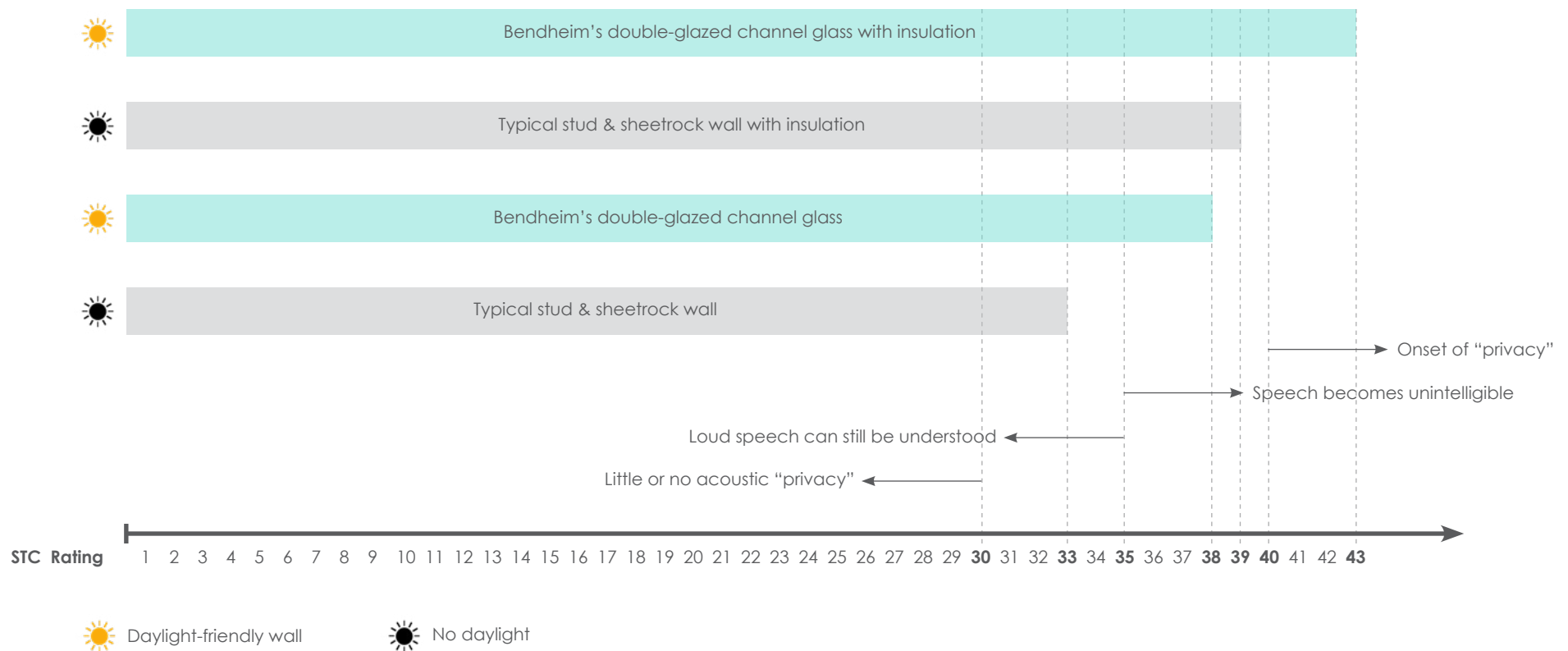


## ACOUSTIC PRIVACY

ACDF architects chose Bendheim's double-glazed I-60 interior channel glass wall system. At 4.5" thickness, the wall has an STC rating of 38, comparable to the STC rating of a standard 4.5"-thick opaque interior wall with added fiberglass insulation (please see chart below). At STC 38, it offers superior acoustic privacy, muffling loud speech enough to make it unintelligible. Simultaneously, unlike a traditional opaque wall, the channel glass partition creates an atmosphere of openness, connectivity, light, and mystique, as diffused light pours through.

The construction of the double-glazed wall creates an air cavity between the two rows of glass channels. For projects requiring an even higher level of visual and acoustic privacy, such as healthcare environments, this cavity can be filled with translucent white insulation, increasing the STC rating to 43, while allowing approximately 40% of visible light through. An added benefit of the cavity is that it can integrate LEDs. At FlightHub, linear LED lighting has been added through the top extrusion.

### Channel Glass STC Rating Vs. Opaque Wall:



## VISUAL PRIVACY

“THE MAIN DESIGN CHALLENGE OF THE PROJECT WAS TO BRING NATURAL LIGHT INTO THE CENTRAL GATHERING SPACES, ALL WHILE CREATING AN ACOUSTIC BARRIER AND CLOUDING THE VIEW, SO AS TO AVOID DISTRACTING EMPLOYEES... THE CHANNEL GLASS MODULAR SYSTEM BECAME AN EVIDENT OPTION FOR THIS PARTITION.” – VERONICA LALLI, PROJECT ARCHITECT, ACDF ARCHITECTURE

The textured channel glass surfaces gently diffuse light and views, maintaining daylight advantages while providing visual privacy. According to the architects, the glass “has a magical effect when natural light pours through.”



Photo by Maxime Brouillet



## PHYSICAL PRIVACY & SOCIAL DISTANCING

According to the architects, although the FlightHub project was designed ahead of any indications of a pandemic and pending social distancing, "ACDF's modern, flowing design infuses efficient features into the layout that help ease the challenges of creating a post-COVID office environment." For example, FlightHub's concept for the divided communal spaces – with a separate small kitchen and meeting room in each "tribal" zone – reduces the likelihood of large gatherings.

The circular design, conceived to maximize the efficiency of the office layout within the octagonal building, also helps establish one-way flow through the entire space. This minimizes physical interactions and facilitates social distancing. Employees can safely access their private offices, as well as easily reconfigure the common spaces to optimize their work environment.



Photo by DIVETRO

## SUSTAINABLE DESIGN

The architects chose Bendheim's Lamberts® channel glass with an extremely high percentage of post-consumer recycled content – approximately 40%. It is one of the most sustainable building glass products in the world, a recipient of multiple green industry awards. Among its eco-forward attributes is its carbon-light production, including the use of 100% renewable electricity and an oxygen-and-natural-gas fired glass melting furnace. Please see the product's [Environmental Product Declaration \(EPD\)](#).



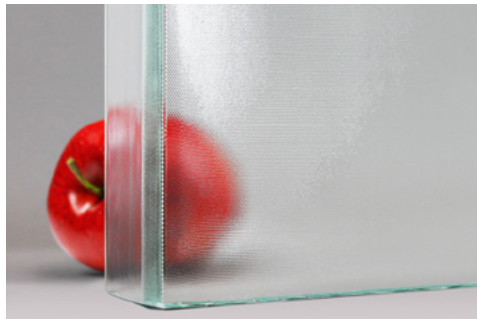


## SAFETY: TESTING & CERTIFICATION

Bendheim's tempered glass meets the requirements for ANSI Z97.1 and the Consumer Products Safety Commission's standard CPSC 16 CFR 1201. It is also the only tempered channel glass certified by the Safety Glazing Certification Council (SGCC), the highest level of independent third-party certification in the US. Please see our video on tempered channel glass strength: <https://youtu.be/siyx49JUM2s>.

## DESIGN AESTHETIC

"Channel glass was key to the project's design and central to its success... The team and the client were very intrigued by the quality of light that penetrated the Solar glass," said Lalli.



Another desirable attribute of privacy-friendly channel glass is that it projects a "filtered image" of the occupants and activities on the other side of the wall, simultaneously dividing and connecting people and spaces. The "fine mesh" channel glass texture also complements adjacent materials, including the aluminum foam cladding and fabric curtains.

"THE CHALLENGE OF BRINGING NATURAL LIGHT INTO THE CENTRAL COMMON SPACES WHILE CREATING AN ACOUSTIC AND VISUAL BUFFER BECAME A DRIVING DESIGN OPPORTUNITY FOR THE PROJECT." – JOAN RENAUD, ACDF

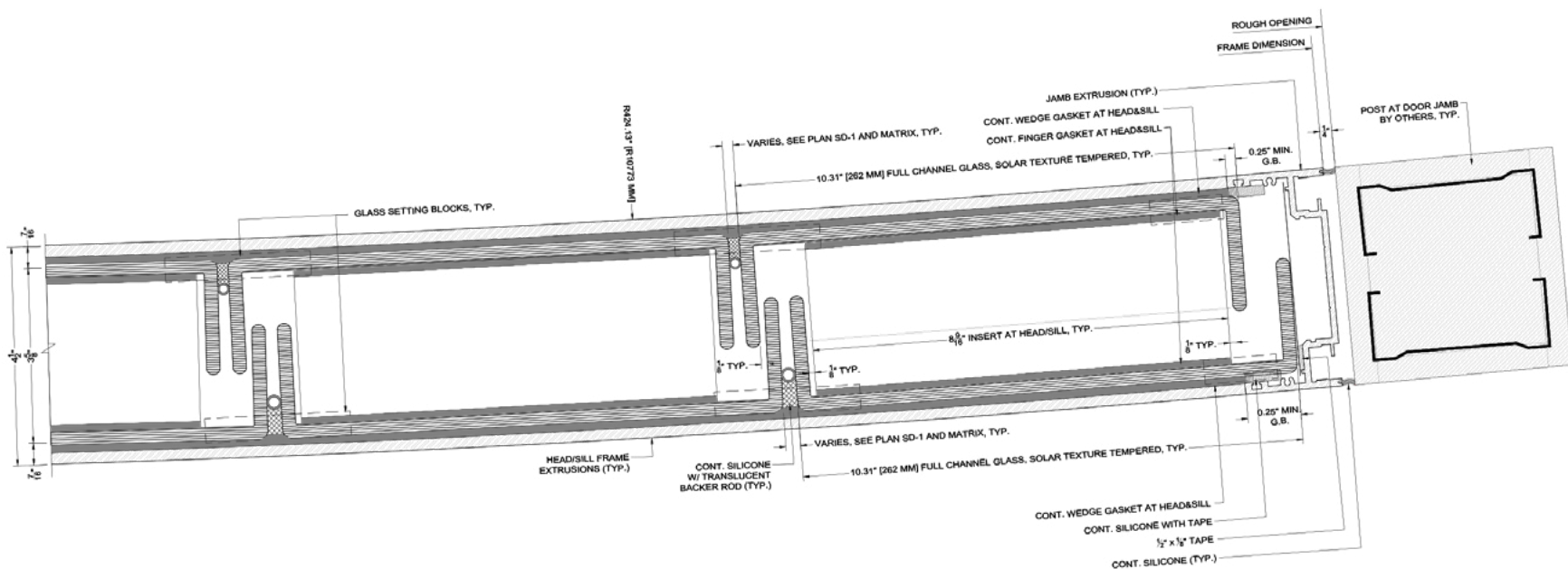


## INSTALLATION

The channel glass wall design, delivery, and installation were completed as planned, on a very tight schedule, but within Bendheim's standard lead times. Construkt oversaw the project as the General Contractor; installation was completed by DiVETRO.

"The overall experience working with Bendheim was great," said Ion Filimon, President of DiVETRO. "Channel glass is a very high-end, quality product. The standard lead time worked for the project. The glass was delivered on time and there were no delays on our end. We also appreciated the way the product was packed and delivered; it made our work easier."

The specified Bendheim I-60 double-glazed wall system captures the glass channels at the top and bottom, and does not require intermediate vertical frame supports, creating a clean design aesthetic and speeding installation. The custom-curved frames (head and sill) were installed first. The relatively lightweight individual glass channels were then pocket-set into the frames and sealed with gaskets and glazing silicone. Bendheim's flexible wall system also easily tied in the doors to the private offices.









The key challenge was installing the glass wall system on the uneven existing floor slab, which in many areas dipped as much as 13/16" within an 8-foot section. To accommodate the concrete slab variations, several different lengths of glass channels were supplied, and the wall was perfectly aligned by shimming the base extrusion. Bendheim's perfectly detailed shop drawings and close collaboration with the architects and installers were instrumental in ensuring proper wall alignment. "The team was very helpful in answering questions regarding the details," said Lalli.

"Bendheim's shop drawings were extremely professional – the type of drawings we are comfortable sending directly to the architects, as well as using on the building site," added Filimon. "They had all the necessary information and specifics to allow us to understand the product and the frame system. The level of detail was especially helpful, this being the first time we installed channel glass. We really appreciated the collaboration with Bendheim's technical team – they were very easy to work with and quick to respond to our questions."

## SOURCES

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"THIS WAS OUR FIRST EXPERIENCE WITH CHANNEL GLASS AND, NATURALLY, THERE WAS A LEARNING CURVE... WE ARE GRATEFUL FOR ALL THE SUPPORT BENDHEIM PROVIDED. NOW THAT WE HAVE A VERY GOOD UNDERSTANDING OF CHANNEL GLASS, WE WOULD LOVE THE OPPORTUNITY TO WORK WITH IT AGAIN. IT'S A GREAT MATERIAL, FROM THE WAY IT FUNCTIONS, TO THE AESTHETIC IT PROVIDES. THE CLIENT IS HAPPY, AND WE ARE PROUD TO HAVE ACCOMPLISHED SUCH A MAJOR INSTALLATION WITH SUCH BEAUTIFUL RESULTS." –  
ION FILIMON, PRESIDENT, DIVETRO





Front and back cover photos by Maxime Brouillet © 2020 Bendheim

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