



CertainTeed
SAINT-GOBAIN
Ceilings

Better Together: A Global Gateway to Acoustical Design

case study



Photo © Jeffrey Totaro, 2015

Stepping off a plane and into the new YYC/Calgary International Airport is a transformative experience. Whether you're returning home or visiting this central Canadian metropolis for the first time, it's apparent from the first step that this is a special airport. Natural materials, including wood, metal and stone channel the essence of the surrounding region, while expansive windows show off views of the Canadian Rocky Mountains.

Much like its renewed and internationally acclaimed airport, Calgary has transformed itself in recent years. While this Canadian city remains steeped in the western culture that earned it the nickname "Cowtown," it has cemented itself as a hub for the energy, financial and technology industries. With global ambitions in mind, the city has rapidly expanded its international presence and YYC is a testament to this commitment.

Built for passengers of today with an eye to the future, YYC is a forward thinking, innovative and beautiful facility that tells the story of Calgary, Alberta and central Canada.

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North America's Newest Airport

When YYC opened this fall, it not only became a reimagined gateway to one of Canada's largest and most economically significant cities, it took on the role as the country's most iconic airport. The project, estimated at CAD \$1.6 Billion (USD \$1.2 Billion) and totaling nearly 185,000 sq. m. (2,000,000 sq. ft.), joined a growing list of major North American airports that have made or are committed to making multi-billion-dollar critical infrastructure upgrades.

While Asia-Pacific and Middle East & Africa far outpace North America in terms of airport development, with in-progress and planned projects in these regions valued \$224.1 Billion and \$172.0 Billion respectively (according to Timetric's Construction Intelligence Center's 2016 report entitled Global Airports Construction Projects), YYC represents a shift in spending and signals

new opportunities for large contractors and architectural firms in a post-recession growth market.

Sustainability and Design Meet Acoustic Comfort

Featuring 24 new gates, streamlined customs and connections services, advanced screening and boarding processes, 50 new shops and services, the new terminal is a sprawling space with a modern and striking design. Sustainability measures are found throughout the airport and extend to renovated portions of the existing facility.

Designers from around Canada worked for several years to cultivate a design that blended aesthetic beauty with functionality and sustainability. The space needed to say "Calgary" without being too literal. Combining natural materials in unique and unexpected ways for an airport

environment allowed them to play with colors, finishes and shapes, while still providing the necessary durability required for a bustling, growing facility.

A key aspect of the design process was to specify and install a unique, modular ceiling system that would assist with wayfinding, help manage acoustics and mitigate noise, leading to a stress-free and anxiety-reducing travel experience for the airport's 15.7 million annual passengers.

Furthermore, the ceiling would need to fit into the existing building plans, which were underwork for several years before a manufacturer was selected and specified. It also needed to contribute to the sustainability and carbon footprint of the terminal design, which uses geothermal cooling and heat, rain water harvesting and an innovative building envelope.



Photo © Jeffrey Totaro, 2015



The Road to Calgary

After competing alongside three other manufacturers, CertainTeed was ultimately chosen to supply a variety of ceiling and suspension components, drywall and finishing products. The selection involved four companies that conducted full mock-ups with their respective products. These proposed plans were tested and scored by the design team on installation time, pricing and efficiency. The winning company needed to satisfy a variety of specific needs, and CertainTeed rose to the top of every list for a variety of reasons.

CertainTeed Ceilings Decoustics wood panel ceilings were initial standouts from the scoring process and ultimately specified throughout the airport as they offered the design team an aesthetically pleasing wood product that was easy to install and offered full accessibility after the installation. The suspension systems used to support the wood panels also

was given top marks as it gives the illusion that the wood ceiling panels are floating in air – tying in well with the overall design theme of the airport that features open and airy spaces with natural materials.

In addition to 200,000 sq. ft. of Decoustics panels, perforated metal ceiling panels were incorporated throughout the space as a design juxtaposition. Offering the facility a product with an extraordinarily long lifecycle, along with unmatched durability, the bright metal finish of the panels combines perfectly with the matte finish of the wood.

CertainTeed Ceilings Sand Micro™ mineral fiber ceiling panels and Symphony® fiberglass ceiling panels were also installed throughout the terminal, as they offer a product that is economical with positive acoustic principles. The panels provide differing acoustic performance with a consistent visual. This allowed the

design team to mix and match products based on specific design needs and specifications for each space within the terminal.

Beyond the ceiling and suspension systems, 1/2" Easi-Lite® lightweight Drywall, 5/8" Type X fire-rated Drywall, GlasRoc® Diamondback® Tile Backer Panels and GlasRoc® Exterior Sheathing Panels from CertainTeed Gypsum, along with Lite Taping Ready-Mix Joint Compound, Lite All-Purpose Ready-Mix Joint Compound, Lite Finishing Ready-Mix Joint Compound, Marco® Drywall Joint Tape, No-Coat® High Performance Drywall Corner Products are found throughout the space.

Problem Solving Together

The large quantity of products from the CertainTeed family of brands is significant for a number of reasons. The architectural team and contractor were

challenged with several design problems, including the development of several custom and semi-custom applications and installation techniques. The flexibility of CertainTeed's products, along with its product design teams, easily led to the creation of new prototypes produced between companies. And the partnership between Sunco and CertainTeed only continued to evolve because of this relationship. Albeit through different divisions, Sunco was able to work with one company to work with for a variety of needs, allowing them to harness the full power of diversity that CertainTeed brings to the commercial construction industry.

Furthermore, gypsum and finishing products were produced at CertainTeed Gypsum's Calgary manufacturing facility. Located less than 20km from the airport, this production facility allowed the company to limit its carbon footprint

through reduced transportation. It also reduced costs for the project itself, as gypsum and finishing products were locally sourced. This was especially important as the project grew considerably over the course of the design and build stage.

"When it was all said and done, the size and scope of the project grew by roughly 50 percent," said Bryan Neubeker, CertainTeed Grid Specialist. "Considering that the timeline and completion date were set, and there were several manufacturing and installation challenges to meet, the finished product is a testament to the brand's position as a leader in the industry."

Rob Adamson, lead architect and partner at Dialog Design, echoed his sentiments and added "The multiple ceiling and gypsum solutions worked in conjunction

with the other design features seamlessly. There were no particular design challenges, as the ceilings were modular and quite easy to deal with."

A Massive Undertaking

While the flexibility and modular nature of CertainTeed products allowed for a smooth design process, there were several unique and challenging manufacturing and installation requirements in a project of this scale.

"This was a very large and specialized project," said Aaron Plamondon, estimator and project manager at Sunco Commercial Construction Supply. As the GC for the terminal project, Sunco worked intensely with CertainTeed Ceilings on a variety of installations. "A new system was developed for the project with



PROJECT
Calgary International Airport —
International Terminal
& Airport Renovation

LOCATION
Calgary, Alberta
Canada

SIZE
2,000,000 square feet

PRODUCTS
Decoustics Custom Panels
by CertainTeed Ceilings
+ Additional CertainTeed Ceiling
and Gypsum Products

ARCHITECT
Dialog Design

CONTRACTOR
Sunco Commercial
Construction Supply

BUILDER
EllisDon

premanufactured panels, which in turn created a learning curve for our team," added Plamondon.

The specialized steel framing panels were created by an outside vendor and supplied by CertainTeed Decoustics, with Sunco creating their own methodology to suspend the ceiling panels from the deck above. "It was a collaborative effort to design a system that would work with the architect's vision," said Plamondon.

"While the panel system met the vision, the ceilings were 40-65 feet in the air," added Neubeker. "This was a challenge as we had to deliver the product to its final location and stabilize the panels long enough to connect them, which is not an easy task with massive pieces of custom woodwork."

This was made all the more difficult as the contractors had to work around fluctuating temperature and humidity levels on the job site, where extreme swings had major effects on the installation process. The wood panels could only be installed on low humidity days because once humidity rose, the panels swelled and joints closed creating an imbalance with spacing. The panel sizes around light boxes were also difficult to maneuver.

Furthermore, to meet specific acoustical values for the space, the CertainTeed Decoustics team sourced a superior acoustical fleece backer that was able to produce the result that was required. By sourcing and applying a special black thin fiberglass matt, CertainTeed was able to eliminate the need for additional fiberglass board behind the finish ceiling planks.

In addition, CertainTeed Ceilings provided a new, never-before-used innovative drywall

PRODUCTS FEATURED IN THE PROJECT:

CertainTeed Ceilings Products

- Classic Stab 15/16" Suspension System
- Bolt Slot Suspension System in white & silver
- Decoustics Perforated Metal Ceiling
- Decoustics Wood Plank Ceiling
- Decoustics Metal Suspension Framing
- Decoustics Customized Accessibility Suspension System
- Decoustics FSC Solo 16 Planks featuring a Douglas Fir Veneer with a Clear Coat Veneer
- Drywall Suspension System
- Sand Micro™ 500 x 1500
- Symphony® f

CertainTeed Gypsum Products

- 1/2" Easi-Lite® lightweight Drywall
- 5/8" Type X fire-rated Drywall
- GlasRoc® Diamondback® Tile Backer Panels
- Glasroc® Exterior Sheathing Panels

CertainTeed Finishing Products

- Lite Taping Ready-Mix Joint Compound
- Lite All-Purpose Ready-Mix Joint Compound
- Lite Finishing Ready-Mix Joint Compound
- Marco® Drywall Joint Tape
- No-Coat® High Performance Drywall Corner Products

grid system. The successful installation of the system over 250,000 sq. ft. of space in the terminal was a testament to future success of the product, which was officially launched in 2014.

A New and Shining Gateway to Canada's Frontier

After a massive design, manufacturing and installation process, CertainTeed Ceilings, CertainTeed Gypsum and CertainTeed Finishing products occupy a unique and important position at YYC/Calgary International Airport. An international

gateway to an increasingly international city, the finished product is a reminder that critical, billion-dollar infrastructure upgrades require out-of-the-box thinking and innovative, design conscious and functional solutions.

[View product details, installation tips, and testimonial videos at](#)

[CertainTeed.com/Calgary-Airport](https://www.certainteed.com/Calgary-Airport)