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Pratt & Whitney Canada's Mirabel Aerospace Center chooses Megadoors

Pratt & Whitney
Owner
Prattwhitney.com

Pomerleau
Contractor
Pomerleau.ca

Neuf Architect(e)s
Architect
Neufarchitectes.com

Canam-Buildings
Building Engineer, Supply & Erect
Canam-construction.com

JPR Garage Doors
Megadoor distributor-Québec
jpr.ca

Statistics:

- (2) 214' x 34'/74' (65m x 10/22.5 m) 3-Part Megadoor Systems
- 300,000 ft² (28,000 m²) facility
- \$360 million investment

Pratt & Whitney Canada (P&WC) Mirabel Aerospace Center, located at the Montréal-Mirabel International Airport in Québec, Canada, is a state-of-the-art assembly and test facility for the company's next generation of jet engines. In 2010, P&WC, a unit of Raytheon Technologies Corporation (NYSE:RTX), invested \$360 million USD in the 300,000 ft² (27,800 m²) facility, constructed on only 910,430 ft² (84,580 m²) of land.

The Mirabel Aerospace Center is a global hub for engine flight testing for the complete range of Pratt & Whitney Canada and Pratt & Whitney engines. The center houses two Boeing 747SP aircraft that have been transformed into flying test beds, to simulate a complete range of flight conditions and record key engine data. At the facility, P&WC assembles and tests the geared turbofan PW1500G for the Airbus A220, along with three other jet engines.

In line with P&WC's commitment to sustainable development and operations, the Mirabel Aerospace Center was built to LEED Gold certification standards. It features a passive solar wall, Megadoor hangar doors,

energy efficient lighting and optimized use of natural light.

The old flight test hangar, utilizing traditional horizontal rolling doors, housed the two 747SP aircraft directly across the apron from the new center. These doors were inefficient and problematic, especially during the harsh Québec winters. One of PW&C's primary customers is Bombardier, which has two manufacturing facilities in Montréal, incorporating over eighty Megadoor systems. After seeing the Megadoor system in action and talking with Bombardier's facility and maintenance managers, PW&C decided to incorporate Megadoor hangar doors on their new facility.





Critical Issues:

Sustainability – The engines built and tested at the Mirabel Aerospace Center incorporate the most advanced environmental technologies; therefore it was essential to PW&C that the facility also reflect the same environmental commitment.

Energy Efficiency – Cost-effectively climate control the hangar facilities in the cold Montréal winters.

Cold Weather Performance – The door must operate reliably in harsh winter conditions in order to not impede test schedules.

Site Constraints – The 300,000 ft² (27,800 m²) facility needed to be constructed on only 910,430 ft² (84,580 m²) of land.

Aesthetics – P&WC desired stylish, modern facilities that complemented the company's image.

Benefits:

Sustainability – Megadoor systems are chosen for projects where sustainability is a priority. Due to very low air infiltration values, it is the most energy efficient large door on the market. The Megadoor can also be provided with a translucent fabric that allows natural sunlight to brighten the hangar, minimizing energy and lighting maintenance costs. Over 99% of a Megadoor can be recycled.

Energy Efficiency – The first Megadoor systems were installed in Montréal in 1997 at the Bombardier Delivery Center at Montréal's Dorval airport, as an alternative to traditional hangar doors that failed to meet customer expectations. *(Please refer to the Megadoor Bombardier case study for more information.) Since then, over seventy five Megadoor systems have been installed for various customers at both Dorval and Mirabel airports in Montréal. Eighty percent of energy loss on a closed hangar door is attributed to air infiltration around poor seals. The dramatically superior seals on the Megadoor help reduce this air infiltration more than any other door. In addition, the vertically operating Megadoor system

enables the user to open each door just enough for aircraft or vehicle movement. With this system, crews do not unnecessarily expose the top of the hangar, releasing all the warm, conditioned air. Together, these features enable operating a cost effective, climate controlled hangar.

Cold Weather Performance – Megadoor understands that if a door does not open when required, it can delay operations with huge financial consequences. Since Megadoor systems operate vertically, they do not require the floor tracks needed by horizontal rolling doors, which commonly fill with ice during winter months. Ice does not accumulate on the Megadoor exterior surface, as it does on conventional doors, because as the door fabric flexes in the wind or folds during operation, the ice just flakes off. Lastly, the Megadoor will not freeze to the ground like other door systems that can be severely damaged if operated while locked in ice.

Site Constraints – By utilizing Megadoor systems that lift vertically and do not require rail systems, the architects were able to reduce the depth of the entire two bay hangars by approximately ten feet. Door pockets required by traditional horizontal rolling doors were also eliminated, allowing for a compact and efficient design. Together, eliminating the door pockets and rails saved approximately 5,000 ft² (465 m²) of space and reduced other construction costs.

Aesthetics – The clean lines of the Megadoor complement modern architectural spaces, distinguishing it from the common hangar door.

For more information about this product, please contact: (800) 927-6342 or sales.us.megadoor@assaabloy.com

