



CITY OF BRANDON MUNICIPAL AIRPORT

400 AGNEW DR.,
BRANDON, MB

^ View of the main entrance to the new airport addition from the dropoff lane.

In order to accommodate larger airline carriers and their enhanced passenger check-in, screening, boarding, luggage and arrival services, The City of Brandon commissioned Prairie Architects Inc. to address the expansion and redevelopment of the aging 1970 municipal airport in Brandon, Manitoba.

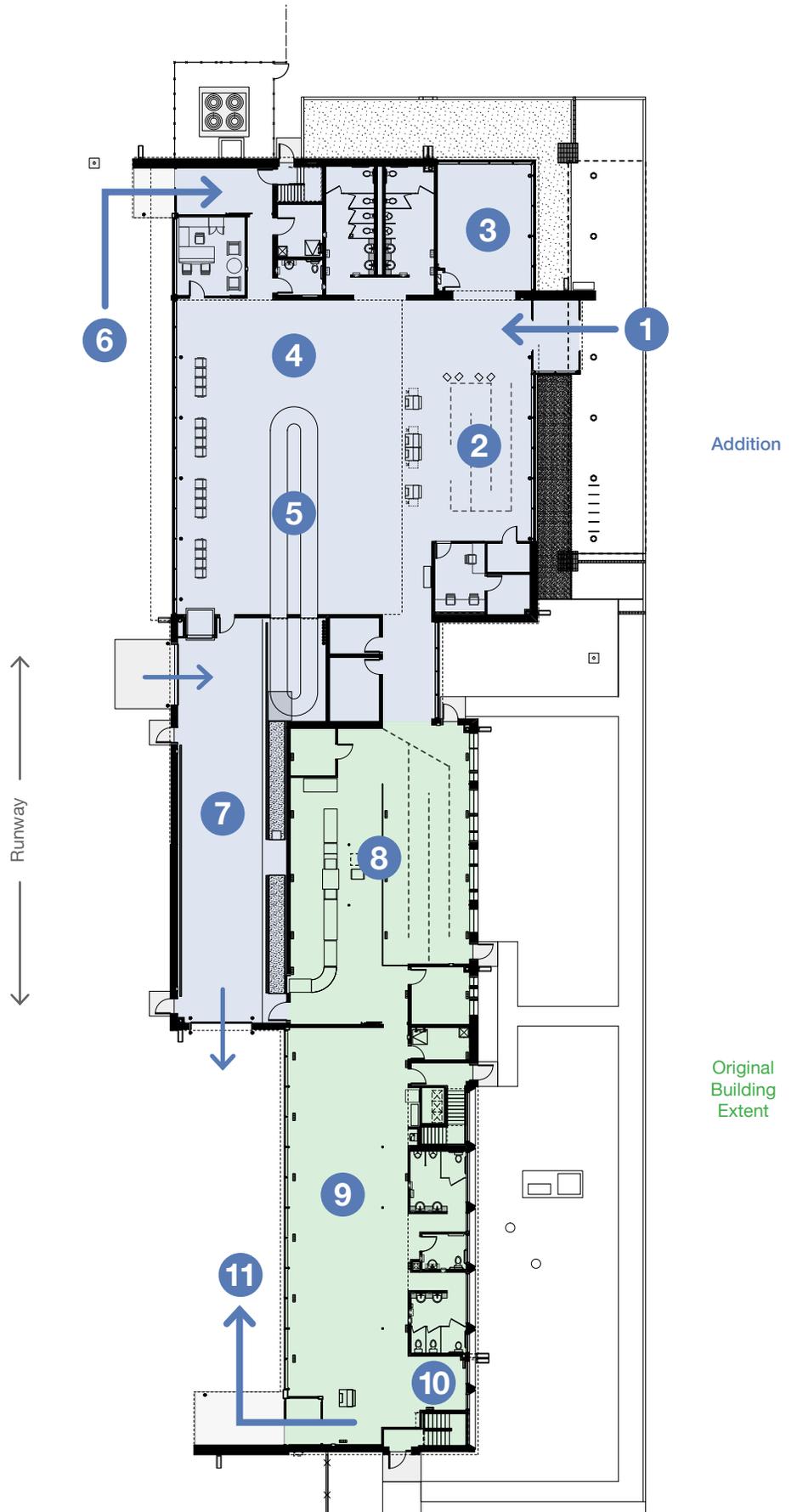
Prairie was tasked with maintaining seamless daily operations of the existing terminal and minimizing any impact on passenger travel during the full duration of construction. By establishing a three phased approach, Prairie was able to deliver an expanded and much improved facility while maintaining an efficient and secure travel experience.

Phase 1 saw continued operations from the existing 5,400 s.f. terminal during new construction of the 9,300 s.f. expansion to the east of the existing terminal. The expansion provided expanded arrival & departure halls, a larger baggage-handling

facility, modernized check-in, and baggage claim areas complete with carousel. Phase 2 temporarily converted the new expansion into departure and arrival space while the existing terminal renovation began. The renovation scope addressed energy efficiency improvements of the old terminal, added a separate security screening area operated by The Canadian Air Transport Security Authority (CATSA), and a secure side departure lounge with new seating, charging stations, as well as vending machines, water fountain, ATM terminal, and accessible washroom facilities. The final phase of construction joined Phase 1 and Phase 2, overnight, with zero impact on the daily operations of the facility.

The final terminal provided an expansion of 9,300 s.f. along with a complete redevelopment of the 5,400 s.f. existing spaces at a total cost of \$8.4 million.

- 1 Entrance & Vestibule
- 2 Check-In
- 3 Retail
- 4 Arrivals Halls
- 5 Luggage Carousel
- 6 Arrivals Entrance
- 7 Baggage Garage
- 8 Security
- 9 Departures Lounge
- 10 Retail
- 11 Departures Exit



N  Main Floor Plan



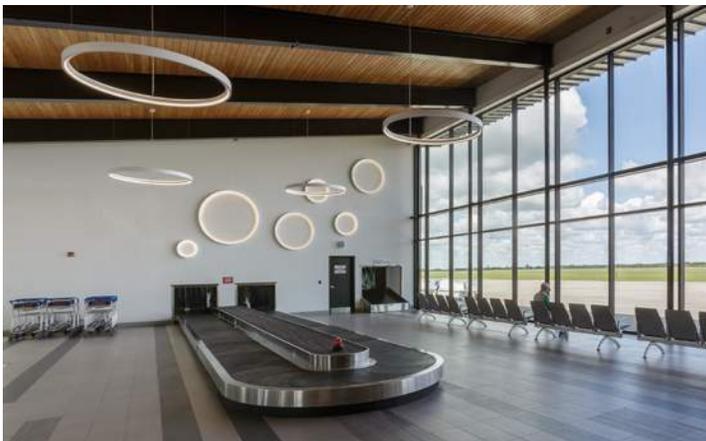
▲ View of the arrival hall and the runway beyond. Visitors can watch the planes arrive and those they are waiting for disembark.



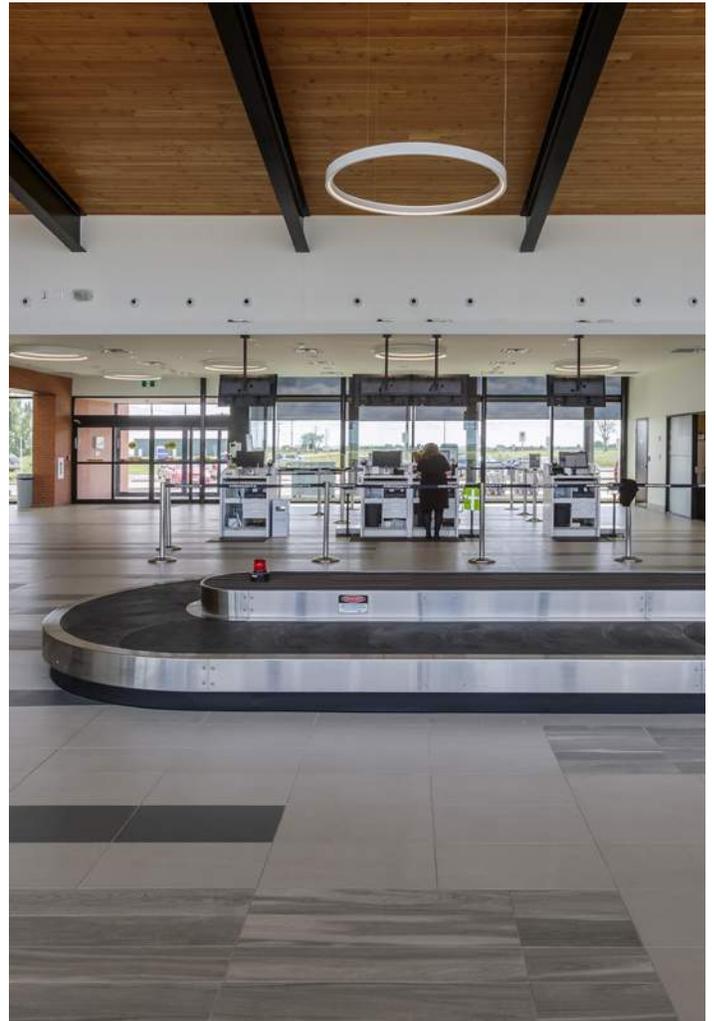
▲ Arrivals entrance and large arrivals hall glazing as seen from the runway.



▲ Check-in space as seen from main entrance.



▲ Arrivals Hall and baggage carousel with large window out to runway.



▲ Looking towards main entrance and check-in from Arrivals Hall window.

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▲ The front façade of the complete Brandon Municipal Airport.

Following is a summary of the health, performance and environmental features of the building based on LEED® (Leadership in Energy and Environmental Design) criteria:

quick facts

LEED®:	LEED® Gold
client:	City of Brandon
location:	51 Balmoral Ave., Winnipeg, MB
contractor:	T.L. Penner Construction
consultants:	S/ Wolfrom M/ SMS Engineering E/ KGS Group C/ WSP
area:	18,579 SF
status:	Opened May 2017

Sustainable Sites

The Brandon Municipal Airport expansion is built on a previously developed and remediated site, just north of Brandon. Though the site is in a rural area, shower facilities and bike storage have been provided for staff to encourage cycling to work or moving around the compound, as well as bike storage to accommodate visitors.

Careful thought and planning were put into the interior and exterior lighting design, so as to reduce light pollution into the night sky and adjacent land.

Water Efficiency

The airport maximizes water efficiency with the use of low flow fixtures and aerated faucets, with over a 43% reduction in potable water use. The fixtures alone contribute to these exemplary water savings.

There is no permanent irrigation equipment for the airport's green spaces, as landscape design includes native, drought-tolerant species that will not require irrigation once established.

Regional Priority

Regional priority focuses on giving extra weight to existing credits that are important to a particular region. Optimized Energy Performance, Enhanced Commissioning and Durable Building are all identified as important for rural Manitoba sites.

CSA Guideline on Durability of Buildings adhered to during design and followed during construction.

Integrated Design Process

The Brandon Municipal Airport has been designed using an Integrated Design Process, whereby team members are

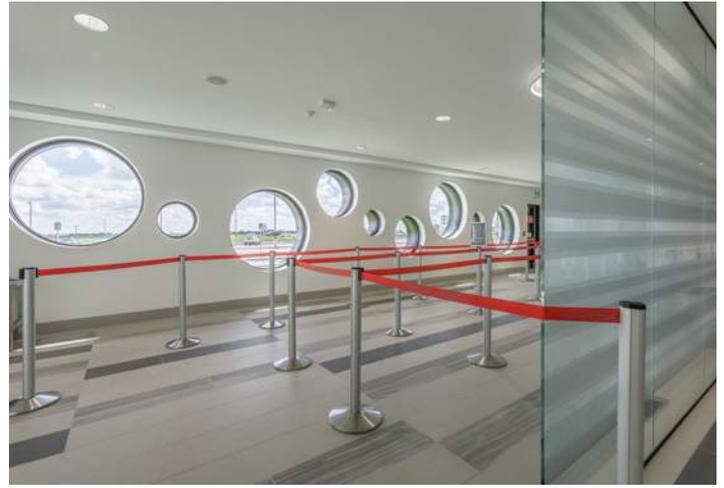
able to advocate how system/design decisions impact their specific discipline. This results in decisions that have been critically evaluated and that aren't made without full understanding of their impact. During the design process, the project team reviewed several options for HVAC systems and compared them among many criteria, such as: energy savings, capital cost, and life-cycle cost.

Innovation & Design Process

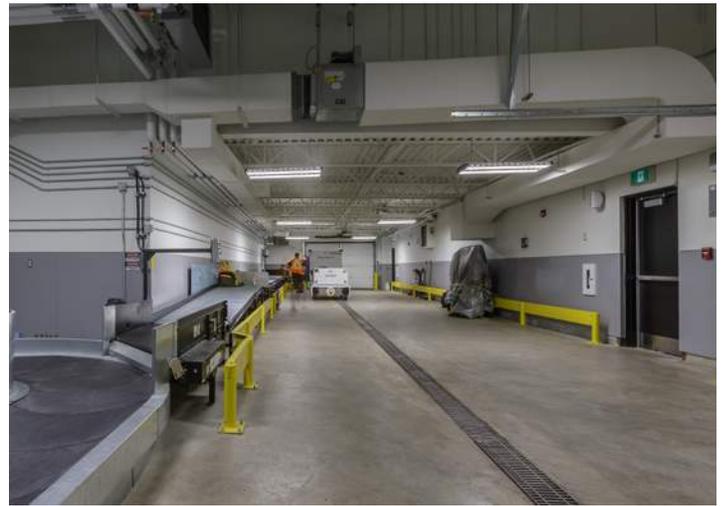
The Brandon Municipal Airport has incorporated a self-guided tour, highlighting the green building facts of the project. There are two LCD screens dedicated to the green information, with a variety of signage placed throughout the building. There are future plans for the slideshow to become a self-guided virtual tour where patrons can scan a barcode to bring up facts on their smart phones. The general public can also access this information from the Brandon Airport website.



▲ Corridor leading from check-in to security.



▲ Security queuing area.



▲ Interior view of baggage garage with carousel at left.



▲ Departure lounge with view out to runway. Washrooms and retail to left.



▲ The rear façade of the complete Brandon Municipal Airport. Arrivals hall at left and departures lounge to right.

Materials & Resources

Together, the contractor and sustainability team have diverted over 83% of construction waste from the landfill for reuse, recycle, or repurposing. Almost 20% of new materials, including rebar, concrete, and millwork, contain recycled content and over 12.5% of new building materials used were extracted and manufactured within an 800km radius of the project site (or transported by rail within a 2400km radius).

Over 82% of the original structural walls, floors and roof of the existing airport terminal have been maintained, including reuse of several materials within. Retaining original building materials reduces the environmental impacts of extracting, manufacturing, transporting, and incorporating new materials into the project.

The Brandon Municipal Airport is designed for at least a 50-year lifespan. A durable building ensures the selection of durable materials and components, quality control during construction, and increases the service life of the building.

Indoor Environmental Quality

The Brandon Municipal Airport is a non-smoking building, and grounds. The building has been designed with optimal ventilation that includes a 100% fresh air ventilation system to provide excellent indoor air quality for staff and visitors. All carpet, adhesives, sealants, paints and coatings used in the building were specifically chosen to have a low level of Volatile Organic Compounds (VOC). VOCs can cause irritating effects or health issues for the installers as well as the building occupants. All composite wood used, including plywood, MDF and particleboard, contains no added urea-formaldehyde.

An Indoor Air Quality Management Plan was in effect during construction and included measures such as covering openings in ductwork, keeping a clean worksite and scheduling to protect the indoor air quality of the building. A building flush was conducted for each phase prior and overlapping with early occupancy. With occupant comfort of the utmost importance, outdoor air and humidity monitoring is integrated into the mechanical system controls. Rooms are designed with a high degree of controllability for users (accessible lighting and thermal comfort controls).

The airport was designed so that over 98% of regularly occupied spaces have views to the outdoors and that all regularly occupied spaces are receiving natural light.

Energy & Atmosphere

Elements of the building design were selected to maximize occupant comfort and minimize energy consumption. The HVAC system will contribute to an energy cost savings of 47.1% compared to a baseline building designed with the Model National Energy Code for Building's standards, with most of the savings found in space heating and interior lighting. Energy conservation design features include:

- Improved roof and wall U-value
- High efficiency space heating plant
- Variable speed pump control
- Reduced interior & exterior lighting power densities
- Interior lighting controls – occupancy and daylight sensors
- Low flow service hot water fixtures
- Demand controlled ventilation
- Exhaust air heat recovery

To ensure the mechanical system is functioning as the design team intended, a commissioning agent has been a part of the design process, acting as a third-party reviewer of the system design for the Owner.

To minimize the impact of the building on the depletion of the ozone layer, all systems are CFC and HCFC free, and the fire suppression system contains no halons.



eco-facts



City of Brandon
900 Richmond Ave, Brandon, MB
www.brandon.ca



This project is
LEED® Gold Certified.

prairie
architects inc.

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