Description of Service

**Pre-Construction**
- Area Development Planning
- Project Management
- Feasibility Studies
- Site Investigations and Condition Surveys
- Preliminary Design, Design Review and Final Design of:
  - runways, taxiways, ramps, aprons, tunnels, roadways and bridges
  - service, departure and arrival structures
  - parking structures
  - electrical systems and illumination
  - power generation and distribution master plans
  - mechanical systems and utilities
  - water, sewer, storm, storm retention sub-structures, water reservoirs
  - building envelope, roofing, windows and curtainwalls
  - residential and business park

**During Construction**
- Full Resident and Non-Resident Services
- Contract Administration and Construction Supervision of Groundside and Airside Projects
- Construction Staging
- Inspections and Field Review
- Traffic Detours and Operation Plans
- Signage
- NOTAM and Advisory Documentation Preparation
- Provision of Site Staff with Security Clearances
- Security and Escort Co-ordination
- Tenant/Community Liaison Conflict Resolution Services

**Post Construction**
- Testing and Commissioning
- Strategic Maintenance Planning
- Renewals Planning
- Aircraft and Airport Noise Assessment
- Mediation, Arbitration and Expert Services

**MH sectors**
- Building Engineering
- Life Sciences
- Municipal
- Telecommunications
- Transportation
development
telecommunication systems

Specification Development and Contract Preparation
Project Scheduling and Cost Estimating
Construction Tendering
Expertise in the use of ICAO "Aerodrome Design Manual" and Transport Canada TP312E "Aerodrome Standards And Recommended Practices"
Rehabilitation Design Aircraft and Airport Noise Assessment Impact Analyses and Modeling
Life Safety Planning
  fire alarm systems
  fire protection systems
Code Consulting
  building, fire and electrical safety codes
Value Engineering

Calgary International Airport

The Calgary Airport Authority is developing 700 acres of land for industrial, aviation and recreational use. Morrison Hershfield was retained by the Authority to complete the preliminary design, detailed design and construction administration for two trade park sections at the Calgary International Airport. Significant design was required to create effective stormwater management facilities on the Deerfoot South site. Morrison Hershfield integrated the facilities to provide for the largest land area possible for saleable commercial property. The second section was prepared for future expansion of WestJet's head office, hangar expansion, and expanded parking facilities.
By the year 2020, the annual number of travelers at Pearson International is expected to be 50 million. Over the years, MH has provided a wide range of services at this, Canada’s busiest, airport. Major civil engineering projects undertaken at the airport include: the preliminary and detail design and field administration for a four-lane tunnel to the infield; a two-lane tunnel under Britannia Road to the de-icing facility; contract administration services for the redevelopment of road access in and around the new terminal development; five-year renewals/strategic maintenance plans for airport bridges, and; inspections and full engineering services for the rehabilitation of 22 concrete bridges including departure ramps.

Additional projects include the Utilities Master Plan, high-voltage distribution system design, parking garage restoration (Terminal 1), design of snow chutes for parking structures (Terminal 2), rehabilitation of the departure deck (Terminal 2), fire alarm system (Terminal 2), retaining wall rehabilitation, investigation of computer floor, and building code consulting (Terminal 3), re-roofing and fall arrest design (Terminal 3).

**Airport Utilities Master Plan**

Morrison Hershfield entered into a joint venture arrangement to prepare a utilities master plan for Lester B. Pearson International Airport. The objective of the assignment was to prepare a plan that would ensure the adequate provision of water supply, storm and sanitary systems, high temperature hot water and chilled water, electricity and telecommunications services during the airport’s evolution. Morrison Hershfield was responsible for the high temperature hot water, chilled water, electricity and telecommunications components of the utilities master plan.

**Southern Ontario Airport Assessment Study**

Morrison Hershfield (MH) developed a state-of-the-art object-oriented simulation program to create flexible and versatile models of complex, multi-component, and multi-modal transportation systems to various levels of detail. The program has come to be known as AIM® or the Airport Impact Model. It was used to simulate both the air and groundsides of airports in Southern Ontario, the road network connecting the various airports, and a high-speed rail link through the area.
The multi-modal aspect of the developed program made it possible for Transport Canada to trade-off investments in transportation facilities. Features of the model also allowed Transport Canada to assess operational factors, as well as the social, economic, and environmental factors associated with different policy and investment decisions.

Edmonton International Airport

Morrison Hershfield has provided building code consulting, planning, design, tender, and contract administration services for both asphalt and concrete reconstruction of runways, taxiways, and aprons at the Edmonton International Airport, following ICAO Aerodrome Design Standards. Additional projects include design services for improving the central pedestrian vertical transportation system at the Air Terminal Building and a water reservoir assessment.

Ottawa Macdonald-Cartier International Airport

Morrison Hershfield provided building envelope design review services and is undertaking field review of the building envelope of the new 57,000 sq. m. Passenger Terminal Building. The innovative, open-concept design of the three-level structure allows passengers to see aircraft right from the time they enter the terminal. MH specialists conducted impact testing of the glazing systems, and fire protection and life safety review. Periodic field reviews conducted during construction confirm that fire separations were built as the design intended.

Morrison Hershfield has also carried out the upgrade of power generation units and loadbanks at the airport.
Morrison Hershfield provided prime consultant services for upgrades to the Airport Operations Control Centre (AOCC) and Facilities Operations and Maintenance Control Centre (FOMCC) at Lester B. Pearson International Airport. The services provided encompassed the preparation of the project brief; the design concept; the construction documents; tender call, evaluation and award; and construction and contract administration.

An extensive investigation and evaluation of stakeholder requirements pertaining to engineering and architectural design, console design, display design and the IT systems that are used to manage airport operations was undertaken. The final project plan is focused on a reconfigured AOCC and enhancements to the FOMCC. The plan provides a roadmap that will help the airport manage growth while providing for immediate enhanced operational improvements that will facilitate the monitoring of a new terminal building. It outlines a staging strategy for the AOCC that was developed to meet the airport’s dynamic and divergent stakeholder needs amidst challenging operational constraints. Advanced technological solutions for end-to-end control of all operational, life safety and security systems have been developed.