

FACT SHEET

Billy Bishop Toronto City Airport Pedestrian Walkway

The Toronto Port Authority is building a pedestrian walkway across the Western Gap to Billy Bishop Toronto City Airport (BBTCA) that will allow passengers and airport users an alternative, efficient access point. Billy Bishop will serve more than 2 million passengers in 2012. The airport, which was completed in 1939, provides connections to more than 18 cities in Canada and the U.S. with connections to more than 80 cities across the globe.

The new walkway will be completed in Spring 2014 and flanked by a new pavilion on the mainland and an addition to the airport terminal building on the island. When it is completed the walkway will be the only known pedestrian tunnel in the world that connects to an airport and sits beneath a body of water.

Key Facts

- Pedestrian walkway will be 800 feet (243.8 metres) long
- Pedestrian walkway will cost \$82.5 million to build
- Total construction cost is 100 per cent financed by the private sector and ultimately paid for by a portion of the existing \$20 BBTCA passenger Airport Improvement Fee (AIF)
- Pedestrian walkway is one of the few being constructed through a public private partnership model
- Pedestrian walkway will be 10 stories (100 feet/30.4 metres) down
- Pedestrian walkway will have four moving sidewalks
- Moving sidewalks will move at 2.3 Km/h
- Two 90 tonne Canadian-made tunnel boring machines and one large excavator will be used for tunnelling
- The tunnel is below approximately 32.8 feet (10 metres) of rock and river bed, and 65.6 feet (20 metres) of water
- To reduce the potential for water ingress during construction seven six-foot (1.8 metres), interlocking tunnels will be constructed to form an arched roof for the walkway. Three of these tunnels will carry city mains to Toronto Island

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Tunnel Boring Machines

The Toronto Port Authority is building a pedestrian walkway across the Western Gap to Billy Bishop Toronto City Airport (BBTCA) that will allow passengers and airport users an alternative, efficient access point. The walkway will be completed in Spring 2014.

Construction will utilise the latest in tunnel and construction technology. The walkway roof will be arched and comprise seven smaller, interlocking tunnels (six feet/1.8 metres) designed to reduce the potential for water ingress during construction. These tunnels will be constructed to form an arched roof for the walkway. Three of these tunnels will carry city mains to the Toronto Islands. The small (drift) tunnels will be created using tunnel boring machines.

What is a tunnel boring machine?

A tunnel boring machine (TBM) is a circular machine used to excavate soil and rock when constructing tunnels.

Key Facts

- The pedestrian walkway is the only tunnel in the Toronto area built using drift tunnels as a canopy for the main structure.
- Two Canadian-made TBMs dubbed Chip and Dale will be used to create the drift tunnels
- The TBMs were built specifically for the project at Billy Bishop
- The TBMs were built by Technicore Underground, a leading tunnelling company based in Newmarket, Ontario
- The TBMs are 6.5 feet (2 metres) in diameter and 36 feet (11 metres) long
- Each TBM weighs 198,416 pounds (90 tonnes)
- The TBMs are made of steel, hydraulic cylinders and pumps, electric motors and have carbide cutters
- One TBM excavates 39.3 to 49.2 feet (12 to 15 metres) per work day
- The TBMs that will be used for the pedestrian walkway project can bore through soft ground, shale and limestone
- The cutter at the TBMs' head turns at a variable speed
- The TBMs cost \$2 million each