



BUILDING THINGS THAT MATTER



TRISTAR
Electric Inc.

Tristar Electric has developed new installation techniques that focus on minimizing the operational impact on runways and taxiways. Tristar has earned recognition from Transport Canada, the Greater Toronto Airport Authority's in-house engineering staff, consulting engineers, road-building contractors and the airfield equipment suppliers.

Established in 1983, Tristar has developed specialized in-pavement inset lighting installation techniques that have created new standards employed in airport construction worldwide. Tristar's notable airport electric projects include: the Toronto Pearson International Airport; the New Quito International Airport, Ecuador; Winnipeg's James Armstrong Richardson International Airport; St. John's International Airport, Newfoundland; and the Canadian Forces Base (CFB), Trenton, Ontario.

INVESTMENT IN INNOVATION

SAFETY EVERY DAY, EVERYWHERE

Tristar makes safety a priority—for employees, subcontractors and the public. Tristar's ultimate goal is an injury- and accident-free workplace and it takes every possible precaution to protect people, property and the environment from health or safety risks during the execution of business activities. Accident prevention is a prerequisite for optimal production, with positive results achieved through safe, healthy working conditions and well-maintained equipment.

Aecon's leadership position on workplace safety is maintained through the effort and participation of employees, subcontractors and suppliers at every level. At each workplace, Tristar's team is tasked with the highest standards of personal safety in accordance with all legislative requirements as well as Aecon's proven safety practices and procedures.

Regardless of project size, scope, or urgency, Tristar's dedication to value, quality, efficiency and safety remain steadfast. Take a look at the portfolio of Tristar's work—it speaks volumes about its experience, capabilities and commitment.



Aecon Group Inc. is the largest publicly traded construction and infrastructure development company in Canada. Tristar Electric Inc. is a division of the Aecon Group and is recognized around the world for its airport lighting installation techniques.

TRISTAR: AN OVERVIEW

THE CONVENIENCE OF A TRUSTED SINGLE-SOURCE PROVIDER

Aecon integrates the core disciplines that come together in building things that matter, all under one umbrella—from electrical and mechanical work, to specialized in-pavement inset lighting. Tristar holds a reputation for its candour and professionalism; business is conducted with the utmost respect, integrity and ethical responsibility.

UNSURPASSED TRACK RECORD

Tristar's broad experience in helping to ensure the safety of some of Canada's busiest airports has earned it a solid reputation for success across the entire airport lighting segment—from runways and taxiways, to aprons, high-mast lighting and approach systems.

VALUE-DRIVEN SOLUTIONS

The most complex construction and infrastructure development projects begin with one simple action: listening. Tristar delivers measurable, bottom-line value by first gaining a thorough understanding of clients' needs and objectives; only then does work begin to start crafting a solution designed to exceed expectations at every stage.

To ensure high customer satisfaction, Tristar principals oversee each project, regardless of size. The systems and procedures used were developed for quality assurance and guarantee that clients receive end products of the highest standard.

Services provided by Tristar include:

- High-mast lighting
- Conventional lighting
- Power and communication systems
- In-pavement lighting installations
- In-pavement lighting design
- Approach lighting systems
- Electrical maintenance services
- Field electric centers (FEC)
- Airport visual aids

NOTABLE PARTNERSHIP PROJECTS

TORONTO PEARSON INTERNATIONAL AIRPORT; TORONTO, ONTARIO, CANADA

Client
Greater Toronto Airport Authority

Contract Value
\$100+ million over 25 years

Tristar's first project as a newly formed organization was the installation of flood lighting on the general aviation customs apron at Toronto Pearson International Airport (then Toronto International Airport) in 1983. Since then, Tristar has been involved in the major expansion of Pearson—including hundreds of projects spanning some 25 years.

Many of these projects involved the construction and rehabilitation of runways with the installation of inset lighting, runway edge lighting and approach lighting. They required extensive pre-planning and an intimate knowledge of all systems involved at Canada's largest international airport.

Tristar's collaboration with Public Works & Government Services, Engineering Department at Pearson's Terminal 3 earned accolades from the Illuminating Engineering Society of North America. The project was recognized with the "Air Carrier Award" for the innovative solution developed for installing lights that would not disrupt traffic at the busy terminal.



NEW QUITO INTERNATIONAL AIRPORT; QUITO, ECUADOR

Client
City of Quito

Contract Value
\$600 million

Together with its parent company Aecon Construction Group Inc., Tristar has been responsible for the design, procurement, installation methodology and construction of all navigational aids for runways, taxiways and approach systems incorporated into the multi-dimensional project at Ecuador's newest airport.

The project began in 2006 after an extraordinary three-decade-long effort to plan the replacement of Quito's aging airport. Aecon joined the project as a major equity partner in both the project concessionaire and constructor. The new airport construction is expected to be completed in 2010 after which the concessionaire will operate it for an additional 30 years.

The project provides for a 3,600-metre runway, 38,000-square metre terminal building, a 4-kilometre approach road, control tower, air navigation, security equipment and six passenger bridges.



JAMES ARMSTRONG RICHARDSON INTERNATIONAL AIRPORT; WINNIPEG, MANITOBA, CANADA

Client
Winnipeg Airports Authority
& Nelson River Contracting—
Black & McDonald

Contract Value
\$1 million

This runway rehabilitation project was completed in a relatively short period given the history of the airport. Runway 18–36 had been constructed in stages over more than five decades.

This staggered construction meant that the rehabilitation team encountered several different surface conditions. Each challenge was met with an appropriate construction methodology, ensuring that the newly rehabilitated runway would enjoy a long-lasting lifespan.

One challenge was trenching the original concrete beneath an overlay of rippling and cracking asphalt; an effect quite apparent over time. Tristar developed a design change to fill the trenches with a modified polymer concrete. Many of the new design strategies developed at this project site have since been employed at other airports.



ST. JOHN'S INTERNATIONAL AIRPORT; ST. JOHN'S, NEWFOUNDLAND, CANADA

Client
St. John's International Airport—
Pyramid Construction/
Black & McDonald

Contract Value
\$1.7 million

Rehabilitation of the airfield at Newfoundland's biggest airport included the installation of 520 inset lights. The project included many challenges, restricted access to work locations and overcoming operational constraints. The remote worksite accessible only by air or ferry required preplanning of logistics and implementation critical to the success of this project.

Weather played a significant role. St. John's lays claim to having Canada's most inclement weather. With a tight timeline for completion and the early onset of winter-like conditions, work was carried out under adverse conditions.

Tristar worked closely with suppliers to help reduce overall project costs. This joint effort led to the design of a new fixture; combining the taxiway and runway centerline lighting into a single fixture.

CANADIAN FORCES BASE (CFB) TRENTON; TRENTON, ONTARIO, CANADA

Client
Government of Canada,
Department of National Defence—
Black & MacDonald

Contract Value
\$1+ million over 10 years

Working within an active Canadian Forces Base requires extensive pre-planning for all aspects of the job.

Tristar Electric completed several jobs within the last decade and remains active in the future airfield lighting plans of this base.

Notable projects include the rehabilitation of Runway 06–24 in 2000 which included the installation of 160 inset fixtures. In 2008, the South-East ramp was completed with the installation of 202 inset lights and future infra-red approach lighting.

Work began in the fall of 2009 on the installation of 106 inset lights on the North-West ramp, and is scheduled for completion in the summer of 2010.





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Tristar Electric Inc.
6068 Netherhart Rd., Unit #1
Mississauga, Ontario, Canada
L5T 1N3

Phone: +1 905 670 1642
Fax: +1 905 670 1932
info@tristarelectric.ca



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www.aecon.com

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