

# Vancouver International airport (YVR) Flywheel Energy Storage & Airfield Power System Project

TransLink



## WSP SMART™ SOLUTION

More efficient and low-cost energy storage and power generation system

## MAKING WSP SMART™ CONNECTIONS

- Uninterruptable power supply via an intelligent power switchgear distribution system
- Advanced control algorithms allowing faster transfer between generators

## PROJECT OVERVIEW

SECTOR SERVED Private Sector	SOLUTION DELIVERED	FUTURE READY®	
 Property & Buildings	 Digital Solution	 Technology	 Society
		 Resources	

## PROJECT SUMMARY

YVR engaged WSP in Canada to provide a design solution to replace its existing electrical back-up power system. Working with YVR, WSP in Canada evaluated a range of design options and technologies to determine the most suitable design to meet the project objectives.



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A flywheel energy storage and power generation system was designed to provide YVR with a more efficient and low-cost solution consisting of two 600 kW redundant high-efficiency diesel generators, an intelligent power switchgear distribution system, and a 625-kVA flywheel uninterruptable power supply (UPS).

This innovative solution provides uninterrupted power during a power outage while the backup generators start-up and allow significant flexibility in how they operate. WSP in Canada also developed advanced control algorithms to allow fast transfer between the different power generators and achieved further energy savings with innovative ideas such as engine jacket water air source heat pumps.

The YVR Flywheel Energy Storage and Airfield Power System Project was awarded with the Award of Excellence and the Tree for Life Award from the 2018 CCE Awards.

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#### WSP SMART™

WSP Smart™ integrates technology, sensors, communication and real-time analytics capabilities with the environment. WSP Smart™ brings new thinking to designing cities, buildings, infrastructure, across the built and natural environment.

#### CONTACT US

For more information on WSP Smart™, please contact [Lucy.Casacia@wsp.com](mailto:Lucy.Casacia@wsp.com)

#### ABOUT US

As one of the world's leading professional services firms, WSP provides engineering and design services to clients in the Transportation & Infrastructure, Property & Buildings, Environment, Power & Energy, Resources and Industry sectors, as well as offering strategic advisory services. Our experts include engineers, advisors, technicians, scientists, architects, planners, surveyors and environmental specialists, as well as other design, program and construction management professionals. With approximately 49,800 talented people globally, and 8,000 here in Canada, we are uniquely positioned to deliver successful and sustainable projects, wherever our clients need us. [www.wsp.com](http://www.wsp.com)