

Montréal City Hall: Public Safety Distributed Antenna System (DAS)

CASE STUDY



CUSTOMER

Designated a national historic site of Canada, the City of Montréal's prestigious city hall is a magnificent stone building constructed between 1872 and 1878, and then rebuilt again in 1926 after a devastating fire destroyed everything but its outer walls. As the first city hall in the country, it also holds historical significance as its balcony is where French President Charles de Gaulle uttered his famous "Vive le Québec libre!" (Long live free Québec) during a public speech while on an official state visit in 1967 to mark the World's Fair.

In 2019, the building closed its doors as it underwent an extensive 5-year, \$211 million restoration project that required over 750,000 labor hours and 3,000 workers, many of whom hyper-specialized in heritage renovations. Now, the building has not only been restored to its original splendor but expanded and improved upon. It has five storeys above ground and two storeys underground, its façade is largely made up of intricate Montréal sand stone, and its interior is rebuilt with a self-supporting steel structure, wood-paneled walls, thick marble trim, arched windows, and mosaic floors throughout. The renovations were done with sustainable development in mind and in pursuit of LEED gold certification.

CHALLENGE

During and after the renovation, the City's Public Safety and Public Works staff who frequently use P25 two-way radios to communicate with one another were experiencing weak signal and poor coverage in various areas throughout the building, notably its basement and underground access tunnels. The new construction materials used in the building's major architectural transformation, such as dense concrete, steel, metal, and marble, was hindering RF signal penetration within the building. In turn, the City was looking for a turnkey solution for a Distributed Antenna System (DAS) that will allow the extension of their current P25 radio frequency coverage throughout the necessary areas in the city hall building, its underground floors and maintenance tunnels.

AT A GLANCE

Customer

- City of Montréal

Building

- Montréal City Hall
- +150,000 sq. ft.

Location

- Montréal, Québec

Market

- Government

Project Duration

- June 2023 - July 2024

Challenge

- Weak RF signal throughout Montréal City Hall's building, including its basements and access tunnels

Solution

- Public Safety DAS
- Design, installation, commissioning, and RF grid testing
- 8 antennas, 1 BDA

SOLUTION

Cartel Communication Systems was proud to be chosen to provide a turnkey DAS solution for one of Canada's most significant historical renovations. We completed the design, installation, commissioning, and final coverage validation for a Public Safety DAS, addressing the radio reception challenges at Montréal City Hall. This solution ensures that Public Safety and Public Works personnel now have reliable two-way radio coverage throughout the entire building.

Cartel's approach included a thorough review of the building's floor plans, signal coverage testing, preliminary and final design stages, installation, commissioning, RF grid testing, and ongoing maintenance. The initial RF signal coverage assessment identified the weakest signal strength on the ground floor and in the two underground levels. To enhance coverage, eight omnidirectional in-building antennas were installed, along with a 700/800 MHz dual-band bi-directional amplifier (BDA), which supports over a dozen channels on each band. Following the installation, Cartel conducted a final RF grid test to measure signal strength throughout the building. The results confirmed that every zone met or exceeded the City's requirement of -95 dBm, validating the system's optimal performance. Cartel continues to support the City through an ongoing service-level agreement, ensuring sustained system reliability.



TECHNICAL SOLUTION OVERVIEW

- ✓ Comba CriticalPoint Public Safety Bi-Directional Amplifier 700/800 MHz BDA
- ✓ Galtronics Omnidirectional Antennas
- ✓ Microlab Splitters/Tappers
- ✓ Trilogy AirCell Coaxial Cables and Connectors

Cartel Communication Systems is proud to have played a key role in preserving the functionality and safety of such a historic site. By delivering reliable, high-performance communication solutions, we ensure that essential services remain connected, even in the most challenging environments. If your organization is facing similar communication challenges, contact us today to discover how our custom DAS solutions can enhance your coverage and improve operational efficiency.

Need a public safety or cellular DAS?

DAS is our bread and butter. With over 30 years of experience deploying Distributed Antenna Systems, Cartel can provide a tailored, turnkey solution specific to your needs. Get in touch with us today!

[Talk to us](#)

LANGLEY (HEAD OFFICE)
9415 202 Street
Langley, BC V1M 4B5
T: 604.888.9711

TORONTO
42 750 Oakdale Road
Toronto, ON M3N 2Z4
T: 416.747.6444



CARTEL
Communication Systems Inc.

cartelsys.com | info@cartelsys.com