



An Industrial Facility Design Case Study: PlyGem-Mitten in Calgary

Ply Gem Canada, a division of Cornerstone Building Brands, is a leading manufacturer of vinyl windows, doors, siding, trim, and other exterior building products across North America. With over 75 years of experience, Ply Gem is known for delivering high-performance, energy-efficient solutions that meet the needs of both residential and commercial construction.



LED LIGHTING THROUGHOUT
High-efficiency fixtures with motion sensors and daylight harvesting



ELECTRICAL DISTRIBUTION
Dedicated warehouse and office panels, 600V 3-phase service, sub-metering provision



EV CHARGER READINESS
Conduit rough-ins for future Level 2 EV charging stations



FIRE ALARM SYSTEM
Code-compliant addressable system with audio/visual devices



**FULLY COMPLIANT WITH
NECB 2017 – PARTS 5, 6 AID 7**
Economizers, demand control ventilation, insulation of HVAC ducts and piping

For the new Great Plains Warehouse in Calgary, D.B.K. Engineering Ltd. was retained by CRESA to provide full mechanical, electrical, and plumbing (MEP) design services. The scope included the integration of a large-scale dust collection system and a high-pressure compressed air system—two critical components supporting the facility’s specialized manufacturing and material handling operations. D.B.K.’s design ensured these complex systems were seamlessly coordinated with the architectural layout and core building services, all while meeting NECB 2017 energy compliance.

Mechanical Design Highlights

- High-efficiency RTUs with DX cooling and modulating gas heat
- Radiant tube heaters in high-ceiling warehouse zones
- Demand-control ventilation with CO sensors
- Efficient plumbing layout with freeze protection

Electrical Design Highlights

- LED lighting with motion sensors and daylight harvesting
- EV charger readiness with conduit infrastructure
- Code-compliant fire alarm and life safety systems
- Structured cabling for communication and IT

Code Compliance

The project complies with NECB 2017 Parts 5, 6, and 7. Mechanical and electrical systems were designed following prescriptive requirements for HVAC, service water heating, and power systems. Energy-conscious features were prioritized to enhance long-term efficiency.

Scope of Work by D.B.K. Engineering Ltd.

- Mechanical & Electrical Design
- NECB Compliance Support
- Permit Documentation
- Design Coordination

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