

George Cromley Emergency Services Building

New wood framed and structural steel framed superstructure



PHOTO TAKEN OF THE TRUCK BAY BUILDING ELEVATION.

Hiawatha emergency services building is a 2 story building with 4 truck bays, offices, and an upper floor meeting room. This building is a designed in accordance with the Ontario Building Code as a Post-Disaster structure. Bradley Engineering was the prime structural engineering sub-consultant to Ronald Awde Architect, Bethany, Ontario. 586 m2 (6,300 sf) \$1.4M

Foundations:

The interior and perimeter foundation walls and footings are typical reinforced concrete foundations set below the depth of frost. The truck bay was designed with a heavy duty interior slab on grade and each bay has a centered trench drain.

Superstructure:

The superstructure was designed with wood framed exterior bearing walls which incorporated wood panel shear walls with discrete hold-down anchors, and structural steel moment frames and interior beam lines.

Highlights:

High stud wall framing (16 ft) created conditions where combined compression and bending stresses required close analysis to provide an economical structure; partial second floor area created floor diaphragm discontinuities and special load transfer detailing requirements; ceiling profile varied requiring multiple end-wall framing solutions; significant openings in the truck door endwall required special detailing to transfer lateral loads between wood shearwalls and steel moment frame; Ontario Building Code post disaster designation.

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Summary Tags: First Nations - Municipal partnered project; Shallow reinforced concrete foundations; Tall wood framed walls; Prefabricated wood trusses; Special timber detailing; Large openings; Earthquake design for post disaster designation; 586m2.

