Lightweight Steel Framing Case Studies

## HOLIDAY INN EXPRESS & SUITES

Bronte, Ontario

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**Design and Construction Team**

**Owner:**
Darko Vranich

**Agent:**
Ray Luft

**Architect:**
Mekinda Snyder Partnership

**Project manager:**
Maple Engineering and Construction

**Engineer (prime structure):**
Phillips Engineering and Planning Ltd.

**Engineer (panelization and steel framing):**
Joseph T.K. Ha Engineering Inc.

**Stucco panelization contractor:**
Admiral Drywall Ltd.

**Steel framing:**
Standard Drywall Ltd.

# Light Steel Framing Responds to Both Building Use and Construction Conditions

The Holiday Inn Express & Suites in Bronte, Ontario, is a study in how steel responds to both building use and construction conditions. Owner Darko Vranich framed his broad shouldered, seven-storey hotel in steel because it was clearly the best way to guarantee the building's long, useful life.

"The hotel industry is volatile," says his project manager Ray Luft. Survival, he explained, means having the flexibility to change the interior of the building to reflect changes in the market. "One of the things that has devalued older hotels is shear-wall construction that leaves no way to move the walls," he said. Post and beam steel framing offers the perfect answer. "If room sales are slow but conference business grows, we can easily convert a floor of
28 rooms to conference use." Doing so is a simple matter of removing the double steel stud interior walls (65 mm (2-1/2") and 92 mm (3-5/8") light steel framing (LSF), produced from Z275 (G90) galvanized steel), and rebuilding.

Using steel to frame the 9,302 m$^2$ (100,000 ft$^2$) building also simplified winter construction, says Luft. While typical shear walls and poured-in-place concrete floors would have required heating, using steel framing along with precast flooring meant that, "short of a gale," Luft could continue to build in any weather.

Steel also made the unique EIFS exterior panels possible. According to Admiral Drywall president Petar Paso, the eight 13.6 m by 1.55 m (approximately 44.5 ft by 5.5 ft) Dryvit stucco panels that run from the second floor to the top of the building were easily the longest he has ever manufactured. "And it was a tricky installation," he said. The transport and installation loading, which was much greater than the load in place, called for seven 100 mm light steel studs to run the full length of the panel, and provision of bridging and cross-bracing for additional structural strength. Using such long panels meant no horizontal expansion joints, which saved time in the finishing. Instead, the panels were mounted in slotted holes in the

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floor slabs to keep the vertical movement of the building from buckling the panels. But the biggest challenge, according to Paso, was installing the near perfectly flat and square factory engineered and built panels over five floors of framing which was site built under much greater allowable tolerances. The rest of the perimeter wall was framed with heavy gauge, 150 mm steel stud.

The brick clad wings of this 145 room hotel are topped with a typical flat roof, while the cottage roof rising from the centre is a steel standing seam roof installed by VICWEST, complete with 25 mm (1") corrugated steel deck substrate (RD938) on steel rafters and 100 mm (4") of rigid foam insulation under the CL840 cladding, coloured QC258 Pacific Turquoise.

**Photos:**

1 Using long panels meant no horizontal expansion joints, which saved time in the finishing.

2 Wind bearing stud walls were used to support the exterior wall panels, and light steel framing (LSF) was used throughout the interior."LSF allows us the flexibility to change the interior of the building to reflect changes in the market."

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