



Project: Reflections On Bogart Pond
Location: Newmarket, Ontario
Design and Construction Team Owner: Rockport Group
Architect: David Lieberman
Engineer: Atkins + Van Groll, Inc.
Developer/Builder: Rockport Construction Services, Inc.
Pre-engineered and pre-assembled cold-formed steel framing panels:
 KML Building Solutions and GenesisTP Inc.

Cold-Formed Steel Framing Facilitates Both Architectural and Acoustic Design



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Bogart Pond Condominium Phase I nearing completion. By Jeff Wilkinson

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Just as beauty is in the eye of the beholder, so potential is in the eye of the imaginative. There are still folks out there who hear words like “pre-engineered” and “system” and think that translates to “box” — with self-imposed limits on both usefulness and appearance.

Not so, according to Raymond Van Groll, managing partner of Atkins + Van Groll Inc., consulting engineers of Toronto. “We enjoy working with cold-formed steel framing (CFS) and panelization. It’s a very effective form of construction that facilitates both design and building. In fact we’ve developed our own software to optimize designing with CFS.”

Atkins + Van Groll teamed up with the Rockport Group, developers and builders also of Toronto, on the Reflections on Bogart Pond project, a five-story condominium of 132 units on 15 acres of private park land in Newmarket, Ontario. The two-phase project began in July of 2002, and was scheduled for completion in April 2004. Sold mainly to senior citizens, the units sport balconies or landscaped terraces and overlook a natural setting including Bogart Pond and nature trails. The facade of the building is rough cultured stone and wood siding.

The galvanized and Galvalume™ cold-formed steel framing is pre-engineered and pre-assembled into open-frame panels by KML Building Solutions, an affiliated GenesisTP Inc. partner, of Cambridge, Ontario. The thickness of the steel framing members ranged from 1.9 mm (0.075”) at first floor level, to 1.22 mm (0.048”) on the top floor. Due to the layout,

most of the CFS walls were structural, with a few non-structural of 18 mil (25 gauge) at the corridors. The roof deck comprised 0.91 mm (.036”) steel with 0.88 mm (0.035”) trusses. The steel for the composite floor deck was 1.52 mm (0.060”).

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John Wilkinson, president of Rockport Construction Services Inc., believes the approach taken at the time with the floor deck was a first for this type of construction. “We wanted to control impact sound from floor-to-floor. We devised a floor system modeled after the structural approach used in industrial buildings. We went without joists and took a corrugated steel deck and poured concrete on to a depth of 6-1/2” at the low points and 3-1/2” at the high points to create a composite floor of 8”, compared to 16” for alternative methods. This resulted in significant savings in building height and facade costs.”



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02 The steel for the wall studs and panels ranged from 1.9 mm (0.075") at the first floor to 1.22 mm (0.048") on the top floor. The steel floor deck is 1.52 mm (0.060"). By Jeff Wilkinson

That approach also meant savings on insurance premiums at non-combustible rates. In addition, Wilkinson said that the CFS panel system allowed him to save 2" at every demising wall in the 148,375 square-foot project. Depending on the choice of floor system, that could translate to considerable cost savings. In terms of long-term savings on maintenance and energy costs, he said "This was our first time using CFS, so we were too new at it to discuss whether long-term benefits to owners and end-users would occur, but given the product's attributes they should."

The CFS system allowed Rockport to install the windows, close off a floor and put heat in as they went, before working on the next floor. "We liked the simplicity of working with CFS," Wilkinson said.

Still, there was a learning curve, albeit a relatively short one. One project is usually all it takes. In fact, Raymond van Groll continues to see CFS systems as the way to go for projects like Bogart Pond. "We had been working with CFS for about 10 years and it now represents a significant portion of our business. I believe it to be both faster and cheaper than poured concrete or hollow slab and concrete block. Once you've worked with it, familiarity comes quickly and it's actually quite simple."



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03 Interior and exterior walls complete and ready for steel deck. By Jeff Wilkinson



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04 Installation of wall panels on finished slab of third floor of Phase II. By Jeff Wilkinson



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05 Intersection of the walls and floor system. The deck is 75 mm (3") x 1.22 mm (0.048") composite deck by Vicwest, and the studs are 90 mm (3-5/8") x 1.52 mm (0.060") studs. By Jeff Wilkinson



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06 Bogart Pond. By Bev Rosner