Steel is a Good Fit with Northern Construction Schedules

NUNAVUT TRADES TRAINING CENTRE

RANKIN INLET, NUNAVUT

(Reprinted with permission from ArcelorMittal Dofasco Steel Design, Fall 2012)

With a short construction season and daylight hours at a premium in Nunavut, choosing steel building materials that would enable rapid construction of the 1,900m^2 (20,450 sq. ft.) Nunavut Trades Training Centre in Rankin Inlet was critical. "Ease of construction is a large factor in northern construction," says Terry Gray, project manager, FSC Architects & Engineers, in Iqaluit. The two-phase construction began in August 2008 and was substantially complete by August, 2010.

DESIGN AND CONSTRUCTION TEAM

ARCHITECT/ENGINEER:
FSC Architects & Engineers (now Stantec)

OWNER/DEVELOPER:
Government of Nunavut

STRUCTURAL ENGINEERING:
Adjeleian Allen Rubeli Consulting Engineers

STEEL CLADDING AND DECK SUPPLIER: Vicwest

Part of Nunavut Arctic College, the Training Centre currently offers pre-apprenticeship electrician, oil burner mechanic, plumbing, and trades access programs. The building itself forms a teaching tool: students learn in and from it.

The roof structure consists of 1,800 square metres of 38mm galvanized steel deck at 300mm (Vicwest TSR) on open web steel joists spanning to steel girders. The second and main floors are concrete on a total of 3,396m^2 (36,554 sq. ft.) of 38mm x 0.76mm (1.5" x .0299") galvanized composite steel deck (Vicwest P-2432) supported by wide flange beam and girder systems.

Light steel framing was used for the nearly 5,400 linear metres of walls, including 18 gauge steel studs for the exterior wind bearing walls. The roof deck consists of 1,800m^2 (19,375 sq. ft.) of S-TSR-1E .0299" G90 from Vicwest. The exterior cladding was 1,888 square metres of light commercial type refinished horizontal and vertical metal strip siding from Vicwest Diamond Rib DR762 and Vicwest Corrugated 22mm D x 68mm W rib-to-rib. "Light steel framing systems allow ease of construction and adaptability to sometimes unforeseen site conditions," Gray says.

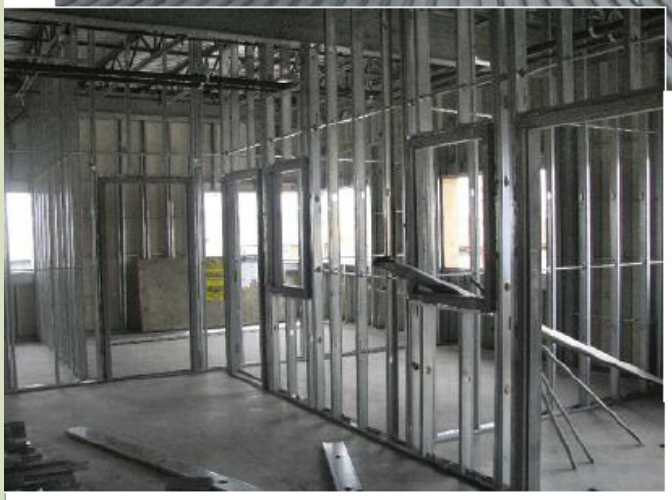
"Steel cladding was selected for the majority of the building envelope due generally to cost effectiveness and low maintenance. When used within the Arctic setting, not only does pre-painted steel reduce assembly time, it also offers ease of installation during compressed schedules, while providing low maintenance to the end users," Gray explains. "Having steel elements pre-finished with their protective coating provides an ideal solution for both the architect and the contractor in getting the project finished on schedule.

Design intent was to have the building be a teaching tool in itself. A wide range of materials, building systems and construction techniques were incorporated into the design.

1

Planned for 70 students, the facility provides a generous computer lab, three classrooms, four fully furnished workshops with labs, two student lounges and a two-storey technical resource library.

Light steel framing was used for the nearly 5,400 linear metres (17,716') of walls, including 1.22mm (.048") steel studs for the exterior wind bearing walls.



The second and main floors are concrete on a total of 3,396m^2 of 38mm x 0.76mm (1.5" x .0299") galvanized composite steel deck (Vicwest P-2432) supported by wide flange beam and girder systems.

Canadian Sheet Steel
Building Institute
652 Bishop St. N., Unit 2A
Cambridge, ON N3H 4V6
Tel: (519) 650-1285
Fax (519) 650-8081
www.cssbi.ca