

Concentrate for 30 years in the wilderness & STEEL makes it possible



ABOVE LEFT: The 8mil (.0088", 200 micron) thick Barrier Series coating resists attack by alkalis, acids, salts and bleaching agents. The textured coating also resists coating impact damage.
ABOVE RIGHT: Ship loader for Nickel, Copper and Cobalt ore.

Voisey's Bay sits at the eastern edge of a vast expanse of wilderness 350 km north of Happy Valley-Goose Bay in Labrador. Voisey's Bay Nickel Company is a wholly-owned subsidiary of Inco Ltd., responsible for developing a \$950 million project there to mine 6,000 tonnes of ore per day and in winter store concentrates of nickel, copper, cobalt and zinc.

During the early spring of 2004, MetalWorld Inc., fabricator and building supplier, and Structural Engineers, SDI Engineering Inc., negotiated the design build for the concentrate storage building at Voisey's Bay. In addition the Roll Form Group worked very closely with the team in providing technical details and pricing for the panel system. In mid-May, 2004, the contract was awarded to MetalWorld Inc. In addition to the design, a method for modularizing and shipping the components to Labrador, was performed by the Structural Engineers, SDI Engineering Inc., working very

closely with the fabricator, MetalWorld Inc. This meant that 4000 tons of structural steel and insulated panels had to be designed, detailed, fabricated and modularized during June, July, August and September. Shipments to Labrador were completed between October and December.

The building modules comprised 18.3m (60 ft) long by 7.9m (26 ft) wide steel panels consisting of cladding, purlins and structural framing. They were fabricated and shipped to the site from Argentia, Newfoundland. Where required, insulation was included as part of the finished assembly. On site, panels were assembled into larger modules 54.9m x 7.9m (180' x 26') that were lifted into place. Hinged on base sections connected to the foundations, they were rotated into position and joined at the peak, with closure plates installed to make the building watertight.

The building is a modified A-frame with a traveling tripper conveyor system hung from the

peak to distribute ore concentrate to the appropriate storage area. The storage facility involved the use of 8,360m² (90,000 sq. ft.) of Roll Form Group's Samson panel cladding with a .61mm (.0239") galvanized substrate and paint finish of Barriercoat 8/8 QC7164 Slate Blue and on the reverse side QC1508 Bone White, with the roof comprising 19,274m² (215,000 sq. ft.) of Roll Form Group's S-40 panel with .61mm (.0299") galvanized substrate and the same Barriercoat finish. The same wall and roof materials were used on the smaller receiving facility with 604m² (6500 sq. ft.) of siding and 604m² (6500 sq. ft.) of roofing.

The use of pre-engineered steel modules and their erection system allowed winter construction, which in turn allowed the installation of mechanical systems in the Spring of 2005. Consequently the first shipment of nickel concentrate occurred on November 16, 2005, more than six months ahead of schedule.



The initial challenge was to develop an infrastructure at Voisey's Bay including a ship-loading and concentrate storage building. The timing was such that winter construction would be involved.

2. The concentrate storage building is a modified A-frame 36.6m high x 62.5m wide x 226m long (120' x 205' x 741') and is clad with Dofasco's Barriercoat prepainted steel. Barriercoat's 8mil thick coating offers a remarkably effective long lasting barrier against aggressive environments.

3. After further assembly on-site, the 54.9m x 6.1m (180' x 20') panels, hinged on base sections connected to the foundations, were rotated into position and joined at the peak.

4. The use of pre-engineered steel modules and their erection system allowed winter construction.

Design and Construction Team

OWNER:
Voisey's Bay Nickel Company

PROJECT ENGINEER:
SNC Lavalin, Torbay, NL 709-758-8868

STRUCTURAL ENGINEERS:
SDI Engineering Inc. 709-726-3468

STEEL FABRICATOR & BUILDING SUPPLIER:
MetalWorld Inc. 709-726-3880

STEEL SIDING & ROOFING SUPPLIER:
Roll Form Group 1-800-233-6228