



PORT OF ENTRY COUTTS, ALBERTA AND SWEETGRASS, MONTANA

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ArcelorMittal Dofasco Steel Design, 2008)



Main Port building viewed from the East, showing the US portion on the left and Canadian on the right. The facing sloped and vertical surfaces, as well as, the horizontal cladding are .76mm (.0299") prepainted galvanized coloured QC6904 Silver Grey in the Metallic Series. The fascia on the bridge prepainted Z275 galvanized coloured QC6724 Silver, also in the Metallic Series.

Design and Construction Team

Owners: U.S. General Services Administration and Canada Border Services Agency

Architect: Kasian Architecture Interior Design and Planning Ltd. 780-454-4477

Structural Engineers: Read Jones Christoffersen Ltd. 403-283-5073

General Contractor: Design Build – Bird Management Ltd. 403-319-0470

Construction Manager: Abide International Construction and Management Services 707-935-1577

Roofing & Cladding Installer: Thermal Systems KWC Ltd. 403-250-5507

Roofing & Cladding Supplier: Vicwest, 780-454-4477

Light Steel Framing Manufacturer: Bailey Metal Products 1-800-668-2154

Light Steel Framing Supplier: Don's Drywall, 403-328-3535

Light Steel Framing & Drywall Installer: Roest Acoustics 403-327-2501

Roof & Floor Deck Supplier & Installer (Canada): Custom Metals, 403-291-9767

Structural Steel Supplier & Installer: Anglia Steel, 403-720-2363

The Best of Both Worlds

This is a first for Steel Design – a building straddling the Canada-USA border and not by accident! A joint Port of Entry between the town of Coutts, Alberta and Sweetgrass, Montana, the facility links Interstate I-15 from the States with Highway 4 to Calgary and Edmonton on the Canadian side. Situated on a 23 acre site, the 9,290m² (100,000 sq. ft.) Port sees over a million people and approaching half-a-million trucks a year pass through. The border is the centre line of a steel 'bridge' running through the main building as a circulation spine and access to parking.

The adjective 'joint' applies not only to design and construction phases, but also the ongoing daily operations for the clients: Canada Border Services Agency (CBSA) and US General Services Administration (GSA). Initially, a design consultant from Los Angeles provided Bridging Documents comprising technical performance specifications and drawings approximately 25% complete. The Calgary branch of Bird Construction of Toronto was the Canadian GC for this design/build project and hired Kasian Architecture Interior Design and Planning Ltd. of Edmonton who complemented the input of CBSA architect Dane Ashlie. The applicable codes and standards for each side of the border had to be observed. Work was executed by contractors and sub-contractors on their

respective sides – with the added challenge of meeting at the right place at the right time! Today, CBSA and GSA staff while working in their own halves of the main Port building share its lunchroom facilities, locker rooms, conference rooms, and other areas.

The facility comprises the main building of three storeys and 6,000m² (64,584 sq. ft.) and six ancillary structures including inspection buildings and hazmat storage. It has won eight awards and is the first Can-US border station to be LEED® certified. Achieving that involved meeting appropriate criteria for issues such as construction waste recycled (98%), water use reduction (22%), materials manufactured within 500 miles (47%), occupied spaces with outside views (96%), and others relating to site usage, energy and atmosphere, building materials and more.

Building materials included structural steel joists, prepainted galvanized wall and roof cladding, steel floor decking and roof deck. Light steel framing (LSF) was used for exterior load- and wind-bearing walls and interior partitioning for drywall. John Roest of Roest Acoustics who did the LSF framing and drywalling says, "LSF was used because of speed of construction, cost, and light weight."

Photos:

1. The exterior design objectives were to echo the aesthetic of the surrounding prairies and farmland. The Silver Grey and Silver prepainted Z275 galvanized steel cladding was sleek and modern while reflecting the 'feel' of farm buildings and silos in the area.
2. View from the North – showing (R to L) the overhead pedestrian bridge and Canadian Main Port Building, Inspection Booths and Commercial Inspection Building. Highway #4 Southbound is on the right and Northbound on the left.
3. Central main stairs serving all three floors of both the US and Canadian portion of the Main Port building. The international border runs through the centre of the stair shaft/corridor with Canada on the left and the US on the right. The horizontal wall cladding is Vicwest's CL3070 profile, prepainted Z275 galvanized coloured QC6904 Silver Grey.


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SHEET STEEL MATERIALS USED
Wall Insulation:

Batt insulation over poly vapour barrier

Roof Insulation:

Batt with peel and stick membrane under it and the Z girts

Roof and Vertical Wall Cladding:

Tradition 275 – .76mm (.0299") (SSR) panel
Pan size: 396mm x 66mm (15-3/5 x 2-3/5")
Prepainted Z275 (G90) galvanized Metallic Series*
QC6904 Silver Grey 7,060m² (76,000 sq. ft.)

Horizontal Wall Cladding:

CL938 Type 1 – .76mm (.0299")
Prepainted Z275 (G90) galvanized Metallic Series*
QC6904 Silver Grey 780m² (8,400 sq. ft.)

CL3070 Type 2 – .76mm (.0299")
Prepainted Z275 (G90) galvanized Metallic Series*
QC6904 Silver Grey 3,016m² (32,500 sq. ft.)

Interior liner:

Tradition 275 Type 1 – .76mm (.0299")
Prepainted Z275 (G90) galvanized Metallic Series*
QC6904 Silver Grey 1,300m² (14,000 sq. ft.)

Fascia and Soffit:

AD300 Type 3 – .76mm (.0299")
Prepainted Z275 (G90) galvanized Metallic Series*
QC6724 Silver 3,016m² (32,500 sq. ft.)

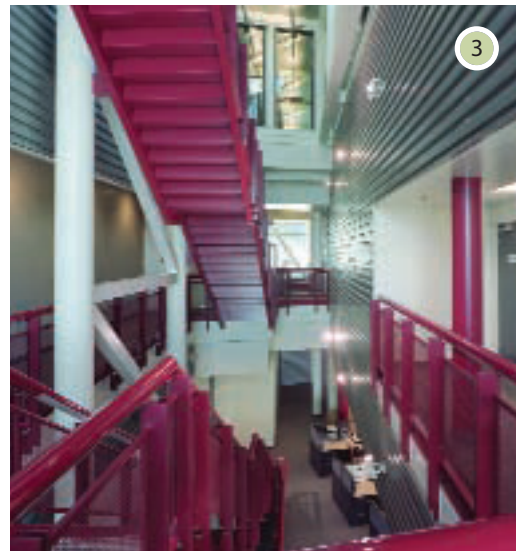
Light Steel Framing:

Exterior Walls:
203mm x 1.22mm (8" x .048") MPA340 (Grade 50)

Interior Walls:
152.4mm x .91mm (6" x .036")
92mm x .46mm (3-5/8" x .018")
152.4mm x .46mm (6" x .018") MPA230 (Grade 33)

Security Area: plus expanded mesh
152.4mm x 91mm (6" x .036") MPA230 (Grade 33)

* A 4-coat Kynar based system



The exterior design objectives were, according to Kasian architect Ken Mah, "...to echo the aesthetic of the surrounding prairies and farmland. Silver grey steel wall and roof cladding used horizontally and vertically was chosen to achieve that. It was sleek and modern while reflecting the 'feel' off farm buildings and silos in the area.