

Steel Transforms Alberta Skyline

BY NEIL KAARSEMAKER

The contribution of structural steel to the transformation of the skyline of Edmonton and Calgary is unmistakable. While the Alberta economy may be faltering due to global slump in energy prices, the current pace of construction in Alberta's two major cities has been impressive. Several major projects stand out for their innovation in design and the construction process utilized:

- Rogers Place Arena and Ice District development, Edmonton (Canam, Whitemud Ironworks, Beauce Atlas, Quirion Metal) nearing completion
- Brookfield Place tower, Calgary — 56 stories (Walters Group), under construction
- Royal Alberta Museum, Edmonton (Collins Steel), nearing completion
- National Music Centre, Calgary (Walters Group), completed
- City of Edmonton office tower, Edmonton— 27 stories (Beauce Atlas), nearing completion
- Central Library, Calgary (Supermetal & Supreme Steel), under construction
- Kelly Ramsay Tower, Edmonton — 25 stories (Leder Steel), nearing completion
- Stantec Tower, Edmonton — 62 stories (Supreme Steel), under construction
- Peter Lougheed Leadership College, Edmonton, University of Alberta campus (Spartan Steel), nearing completion

The selection of structural steel was crucial for each of these projects. Ryan Renihan, structural engineer with Dialog, explains the decision to use steel for Royal Alberta Museum in this way: “Steel was selected to accommodate large unsupported spans over gallery spaces, long cantilevers supporting significant loads, and to assist with aggressive construction scheduling. In certain instances, steel was the only feasible framing solution to satisfy the functionality and spatial requirements mandated for this unique building.”

The choice of steel is crucial to bringing the building design to life but equally crucial is the early engagement of steel fabricator in the design and project planning process. This was reinforced in comments from Ryan Gedman of architect HOK and reinforced by Jesse Chrismer, engineer with Thornton Tomasetti in their work on Rogers Place Arena.

“For any project that requires specialized engineering and fabrication, there are certain factors that are critical to a smooth process. First, all consultants and stakeholders must have a seat at the table to help shape and refine the project approach. This allows them to share knowledge and



provide realistic pricing. Second, it's always helpful to have consultants involved as early as possible in the process. As architects we appreciate the knowledge base of the experts who help make our designs a reality and we value having them involved from day one. Another key benefit of working with steel fabricators is their experience with and keen interest in collaborative design.”

This is further reinforced in the comments made by project manager Greg Penney and estimating manager Craig Scharff with Collins Steel: “The Royal Alberta Museum has become a project of reference for our company for how design-build projects should be completed in our industry with a project first approach, having open lines of communication between all construction team members. I believe the general contractor realized the value in having the Collins team communicate directly with Dialog's engineers rather than the standard RFI submittal process. These open lines of communication helped to build relationships and trust within the team which allowed us to solve connection and framing issues directly using shared 3D model based communication, expediting solutions and shop drawing development. This helped the project save a significant amount of time reducing overall construction costs.”

The benefits of design assist and collaboration in project delivery is echoed by each of the steel fabricators listed in the above projects. The time invested by owner, general contractor, architect and structural engineering in working with the steel fabricator in early design consultation produces cost savings through a more efficient

design, more reliable construction schedule, smoother problem solving and the virtual elimination of non-conformities. The early and ongoing engagement with the steel fabricator resulted in costs savings from:

- Design modifications that allowed for more efficient fabrication and erection.
- Improved connection design to achieve desired form and required strength.
- Recommendations on material selection based on availability, speed of delivery, price and ease of fabrication.
- Just in time delivery to achieve lean construction process, accommodate limited lay down space and minimize traffic disruption in an active city core construction zones.

The steel construction industry is justifiably proud of its record of helping to build iconic structures in the communities, whether it is a unique design like the Art Gallery of Alberta or the massive scale of public infrastructure such as the interchanges on Anthony Henday Drive and Stoney Trail. We are building most of the new schools so urgently needed for the growing population in Alberta and bringing creativity to the renovation of existing schools to help extend and expand their use.

There is real strength and beauty to building in steel and working with the Canadian steel construction industry. **CB**

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