News Release

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Structural Engineer Reviews Case Studies Showing Façade Systems Selection for Iconic Building Architecture

SCHAUMBURG, IL – Participants at the Fenestration and Glazing Industry Alliance (FGIA) Summer Conference in Montreal, QC, heard from a structural engineer about how to select façade systems for iconic building architecture. David Vadocz, Principal Engineer, shared background information about façademovement, including balconies within facades and various other design considerations. He provided several case studies with special emphasis on the recently renovated University of British Columbia Museum of Anthropology building.

“Imagine working on an iconic building,” said Vadocz. “They materialize from a dream, based on a sketch.”

**Façade System Selection**

Vadocz said selecting an appropriate facade system depends on, firstly, facade movement. “A major type is interstory drift, or its lateral movement relative to the floor above and below,” he said. “The facade goes along for the ride.” Glazing systems like curtain walls, window walls and glass walls are often used in facades. “The facade engineer needs to confirm what the interstory drift amounts are before the facade can be designed,” said Vadocz. “Pay attention to both elastic or service interstory drift and inelastic interstory seismic drift.”

**Façade Movement**

The three types of façade movement are rotating, racking and translating. Typical interstory drift allows for movement of up to six inches, he said, although vertical movement is considered too, and usually allows for up to 3/4 inch movement.

“Façades can have a combination of movements,” he said. “Don't underestimate gravity and friction. This is where full-scale mockups can be important.” Other tips he offered included paying special attention to inside and outside corners of racking curtain walls ang glass walls and always detailing corners and jamb joints with translating window walls. When done properly, the results can be remarkable, said Vadocz. “It is incredible to see the movement allowed in these mockups where the structure goes back to normal again and passes air, water and structural testing.”

**Considerations for Balconies**

When it comes to balconies, he said he understands hesitation. “You may think, are they really a good idea with a curtain wall? But it can be done,” he said. He advised allowing for the different movements of a window wall or curtain wall. “The joints matter,” he said. For a less complicated fix, Vadocz said his company is seeing many bolt-on balconies that allow for faster installation.

**Museum of Anthropology**

He concluded with an overview of the University of British Columbia Museum of Anthropology building’s renovations. Designed in 1976 by the late architect Arthur Erickson, it was determined to have a high level of seismic risk in 2017. Its modern structural glass façade and skylight replacement was completed to preserve the integrity of this glass-paned historic building. Unique glass structural challenges were overcome to make an architect and owner’s dream come true. Among other things, it used multiple types of fittings.

“This structure houses artifacts,” said Vadocz. “It was more than 40 years old and was not built with seismic movement in mind. Much consideration was needed for its glass performance criteria.”

The FGIA Summer Conference continues through June 6. For more information about the event, visit [FGIAonline.org](https://fgiaonline.org/)/news.

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