

## ALUMINUM WINDOW WALL SYSTEMS FOR LOW TEDI HIGH-RISE RESIDENTIAL BUILDINGS

MH report on impact of aluminum window-wall systems for achieving Step 3 & 4 TEDI target for high-rise residential buildings in the lower mainland area of BC (Climate Zone 4)<sup>1</sup>.

A recent report from Morrison Hershfield compared the energy performance of the Starline 9000 and 9600 Series Window-Wall Systems and potential building design paths to meet the upper levels of the BC Energy Step Code for a typical residential high-rise building in the lower mainland regions of BC<sup>1</sup>.

A holistic approach was adopted in the building energy analysis that considered the impact of double glazed and tripled glazed windows, vision to opaque ratio (WWR), building envelope thermal bridging and airtightness and HRV efficiencies.

The analysis showed there are multiple design options for a typical high-rise residential building to meet Step 3 TEDI target of 30 kWh/m<sup>2</sup>/yr with the

Starline 9000 & 9600 Window-Wall System with double glazed IGUs with single Low-E coating.

Similarly, there are various design options to meet the Step 4 TEDI target of 15 kWh/m<sup>2</sup>/yr with the Starline 9600 Window-Wall System with double or triple glazed IGUs.

The improvement in Starline's 9600 Window-Wall System enables more design flexibility while still meeting low TEDI targets, these include:

- Higher vision area
- Reduce building envelope airtightness
- Lower HRV efficiency

### STEP 3 PROJECTS

*Starline 9000 & 9600 Window-Wall with Double Glazed X1 Low E Coating*

WWR  
**40%**

SERIES 9000  
TEDI (kWh/m<sup>2</sup>/y) 29.8



WWR  
**65%**

SERIES 9600  
TEDI (kWh/m<sup>2</sup>/y) 29.9

### STEP 4 PROJECTS

*Starline 9600 Window-Wall with Triple Glazed X2 Low E Coating*

WWR  
**65%**

SERIES 9600  
TEDI (kWh/m<sup>2</sup>/y) 14.5

