

# The award-winning Dura House, Halifax

## Inline meets performance expectations



As the architect and owner of Dura House in Halifax, a winner in the 2016 Canadian Green Building Awards, I wanted windows for my high-performance home and studio which would meet my expectations for performance, aesthetics, maintenance, affordability, and service.

By David Coole

Inline Fiberglass met the grade with its series 400 for the fixed windows and series 325 for the casements and awning windows. Inline added 3.25" aluminum extensions for all of the windows so that they could be installed near centre of the ICF walls and painted to match the exterior window frames.

**Performance:** Fiberglass windows are high performing because the coefficient of thermal expansion for both fiberglass and glass is similar which results in a tight window year round. Located by the ocean, the Dura House needed to have a hyper-tight envelope against the relentless North Atlantic winds. The blower door test for the house resulted in a 0.32 ACH @ 50kPa. Inline windows, combined with good building practices contributed to this very impressive result.

Inline recommended "soft coat" Low E coating with a higher SHGC for the east and south elevations for improved solar heat gain, provided there was adequate sun shading to the south, which coordinated well with the morning solar heating cycle and the south-facing "brise-soleil" balcony.

Inline also recommended a "hard coat" Low E coating with a lower SHGC for the west and north elevations for reduced late-day solar heat gain to the west and improved U value to the north.

Using the respective glazing type performance values and costs with my HOT2000 energy modelling consultant ThermalWise at the design stage we determined that double-glazed windows throughout would result in the "sweet spot" for my project.

The estimated payback period for the south-facing windows is less than eight years. After only two winters the annual energy use is half of that projected by the energy modelling - which I attribute to better than modelled passive solar heat gain due to the high-performance windows.

**Aesthetics:** I wanted the sleek look of slender modern window frames which Inline could provide, and it could match any colour I selected. To contrast with the black cube massing and to hint at my live-work configuration, I used two colours for exterior window frames, which also fits with the Atlantic region practice of using bright colours on ocean side homes. I also specified black interior window frames which I find more optically pleasing to view through.

**Durability:** As an Architect I appreciate good performance and comfort in my projects; coupled with low maintenance and durable longevity indicated by a 20 year frame warranty from Inline.

**Affordability:** I found that Inline windows were no more costly than good quality vinyl windows but delivered higher performance. They gave me the best value to performance ratio.

David Coole, NSAA is principal of DR Coole Architecture Inc.

