

## Weather-sensitive architectural skins integrate form with function

November 6 2009

---



Ryerson School of Interior Design Professor Filiz Klassen has produced a series of building skins to create responsive structures, adding a new dimension to architecture. Her exhibition, *Snow, Rain, Light, Wind: Weathering Architecture*, is at Design at Riverside, Cambridge Galleries, Cambridge, Ont. from Nov. 17 to Jan. 3.

Buildings typically provide shelter from the elements, but one Ryerson University researcher thinks structures ought to relate more to the environment instead. To this end, she has created architectural "skins," which interact with the weather to ultimately create environmental structures that integrate form with function.

An associate professor in Ryerson's School of Interior Design, Filiz Klassen's material innovations research in architecture has produced a series of building skins to create responsive structures which can be described as hot, cold, wet or dry. Examples include walls that reveal etched poems, create flashes of light, or that pulse with the pressure of wind, differences in temperature and lighting conditions or when subjected to rain.

By integrating weather elements into her innovative designs, Klassen is adding an entirely new dimension to architecture. It's not just about aesthetics, but a building's dynamic response to the elements. Integrating innovative textiles and building materials will also change a building's environmental footprint by changing our attitudes and [energy consumption](#). "Scientific research has produced materials that adjust to environmental conditions in different contexts," explained Klassen.

In the future, Klassen's conceptual designs could help catapult Canada ahead in the field of sustainable, energy-conscious building design, helping architects visualize building skins that harness, transfer and release nature's energy for better performance rather than solely relying on mechanical heating, cooling and artificial lighting.

Klassen's first set of conceptual prototypes and a feature film documenting the process will be exhibited at Design at Riverside, Cambridge Galleries, Cambridge, Ont. from Nov. 17 to Jan. 3. Highlighting the connection between architecture and the physical environment, the show, Snow, Rain, Light, Wind: Weathering Architecture, will feature a number of interactive textile installations including engravings that shimmer with accidental and ambient lighting; walls that change colour with the temperature; and fabrics that channel daylighting. The exhibition also incorporates lenticular photographs, and the showstopper, an exterior installation that covers part of the building façade across from the gallery.

"We spend so much time and energy warding off or protecting buildings against the elements that it takes an adjustment to embrace their full potential," said Klassen. "I hope that my research can act as a catalyst to extend a language that is responsive to the climate in the architectural community in Toronto."

More information: To see further examples of Malleable Matter, visit [www.ryerson.ca/malleablematter](http://www.ryerson.ca/malleablematter) . For more information on the Snow, Rain, Light, Wind exhibition, visit [www.cambridgegalleries.ca](http://www.cambridgegalleries.ca) .

Provided by Ryerson University

Citation: Weather-sensitive architectural skins integrate form with function (2009, November 6)  
retrieved 27 April 2024 from  
<https://phys.org/news/2009-11-weather-sensitive-architectural-skins-function.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.