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Construction

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# Field Assessment of the Thermal Characteristics of Low Emissivity, Spectrally Selective Coatings on Glazing Systems

## Objective

To provide an assessment of the energy performance of low emissivity, spectrally selective coatings on glazing systems intended for use in residential buildings.

## Background

Spectrally selective low emissivity coatings on glazing systems can reduce the need for heating in winter by allowing more solar radiation to be transmitted indoors. Also, low emissivity coatings can keep rooms warmer by reflecting infrared radiation back into the living space during night time. These coatings are in use, but there is only limited field data to predict their impact on energy use.

## Statement of Work

- Replaced all high solar heat gain glazing units in the Test House of the Canadian Centre for Housing Technology (CCHT), with low solar heat gain coated glass.
- Monitored indoor and outdoor temperatures and energy use in the CCHT Test and Reference houses for four weeks in winter and again for four weeks during the summer of 2006.
- Determined the impact of high and low solar heat gain coatings on the net energy use in CCHT twin houses.
- Performed energy analysis of the performance of the two types of windows in a typical new house in 10 Canadian locations, and 7 locations in the United States.

## Outcomes

- A final report including a summary of all measurements and actual energy use in the CCHT Reference and Test Houses.
- Summary of the computer simulation of energy use and solar heat gain characteristics of the existing and new glazing systems.

## Partners

Pilkington North America Inc. and Natural Resources Canada (NRCAN)

## Start/Expected Completion Dates

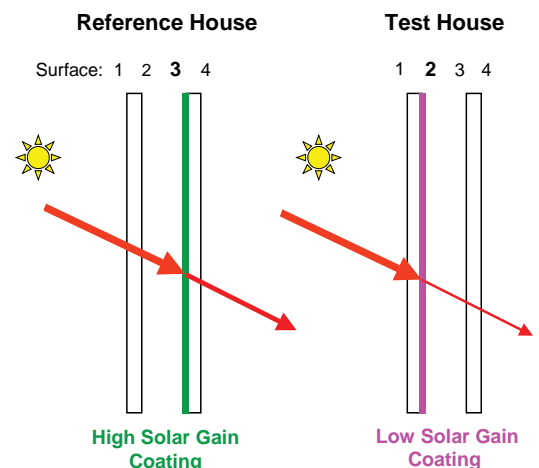
This project began in September 2005 and was completed in 2006.

A final report will be delivered in 2007.

## Project Manager

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For more information, please see [http://irc.nrc-cnrc.gc.ca/bes/hmpe/selective\\_e.html](http://irc.nrc-cnrc.gc.ca/bes/hmpe/selective_e.html)



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