

The first  
**NET-POSITIVE**  
office building  
in Canada!

# HOWLAND GREEN

*Cachet Woods Court, Markham, Ontario*

## Beyond Net-Zero

Howland Green Homes Ltd.'s new mission is simple: Build Beyond Net Zero. The objective was achieved in Markham, Ontario with the Howland Green Business Centre, a first of its kind office building in Canada which produces more energy than it consumes. For Dave de Sylva Eng., President of Howland Green Homes, the future is now. This sets a whole new standard for environmentally conscious development that goes above and beyond the current objectives Canadian developers must meet.

The net zero energy standard describes a building's self-generating ability to produce energy by renewable, onsite means. This practice has been increasingly realized in Ontario by several developers, and Howland Green is a pivotal example of such developments in the Greater Toronto Area.

To go beyond net zero, or to become net positive, a building must generate more energy than needed for its annual operation. Howland Green raises the bar in development practices, not only with regards to ensuring a clean ecological footprint but also in terms of economic efficiency by reducing energy costs.

## Project Stats

<b>Completion Date</b>	September 2020
<b>Project Type</b>	Net-Positive Building
<b>Project Sq.Ft.</b>	70,000
<b>Products Used</b>	Nudura XR35
<b># of Stories</b>	3 above with 2 underground parking

## Construction Team

<b>Owner</b>	Dave de Sylva
<b>ICF Contractor</b>	Elite Building Group
<b>ICF Distributor</b>	FastForm
<b>Architect</b>	Keith Loffler McAlpine Architects





## Why ICF?

The building was constructed with Nudura's XR35 solution, an enhanced Insulated Concrete Form, that adds to the building's thermal resistance more than typical insulated formwork.

Nudura XR35 increases the thickness of the EPS insulation of the walls from 2 5/8 inches on each side to over 4", creating an estimated R35 value—approximately three (3) times more than the Ontario Building Code guideline.

With these benefits, Insulated Concrete Forms played a key role in reducing heating and cooling costs for the building owner and its future occupants.

## Howland Green's Net-Positive Strategies:

- ✓ Triple-glazed windows
- ✓ Geothermal heating & air conditioning
- ✓ Photovoltaics (solar panels)
- ✓ High-efficiency appliances
- ✓ Clean & greywater harvesting
- ✓ Insulated Concrete Forms, totaling 20.32 cm (8 in) of EPS foam insulation

Tremco Construction Products Group (CPG) brings together Tremco CPG Inc. and its Dryvit and Nudura brands; Willseal; Prebuck LLC; Tremco Barrier Solutions, Inc.; Weatherproofing Technologies, Inc. and its Pure Air Control Services and Canam Building Envelope Specialists offerings; and Weatherproofing Technologies Canada, Inc.



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