

CANADA'S LARGEST PASSIVE HOUSE RETROFIT PROJECT USES ELASTOCHEM'S SPRAY FOAM WITH SOLSTICE® LBA

Indwell's \$10.5 million Parkdale Landing Focuses on Quality and Environmental Preservation

Case Study

**GRAHAM CUBITT,
DIRECTOR OF PROJECTS &
DEVELOPMENT, INDWELL**

"Elastochem's Insulthane® Extreme was really important as our insulation choice because we wanted to minimize our impact on the broader environment. Honeywell's Solstice® LBA was the ingredient that really set it apart from some of the competitive products."

Honeywell

DERELICT STRUCTURE TRANSFORMED INTO HIGH QUALITY APARTMENTS AND COMMERCIAL SPACE

As one of Ontario's leading developers of affordable housing, Indwell's Graham Cubitt is passionate about creating "a really amazing placeto live" for people who have often had very poor housing experiences.

Indwell's vision is to provide community renewal for its tenants, neighbors, and the broader cities where it undertakes these muchneeded projects. Cubitt said, "Our interest also extends to energy efficiency. It's important for our tenants, many of whom have experienced homelessness, mental illness, or other disabilities, to be able to afford their utilities. Because Parkdale Landing will deliver such high performance, our tenants will enjoy safe and stable housing with very low utility bills."

It is important for Indwell that its choices of insulation, equipment, and other construction materials reduce environmental impact. "A deciding factor for us was that Insulthane Extreme provided a global warming potential many times less than alternative products we considered," said Cubitt. "There really wasn't a difference in the cost of the overall project to use this much superior product. It became a clear, valuesaligned choice for us as a non-profit organization committed to environmental stewardship, along with economic stewardship."

THE OPPORTUNITY

Provide Invizij Architects with an insulation solution to meet the Passive House1 standard for Indwell's Parkdale Landing 57-unit apartment retrofit project. Built by Schilthuis Construction in Hamilton, Ontario, the complex will provide energyefficient, low-maintenance housing for its low-income tenants.

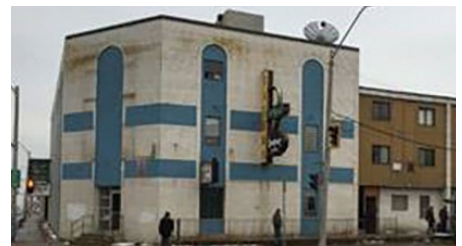
THE SOLUTION

Invizij and Indwell chose Elastochem's Insulthane Extreme closed-cell spray foam formulated with Honeywell Solstice Liquid Blowing Agent (LBA). Great Northern Insulation, a leading contractor for over 37 years, applied 6 inches of spray foam (3 passes) over membrane on the exterior walls to achieve a nominal R-39* in insulating performance and added air tightness.

"We're proud that Solstice LBA is contributing to Indwell's goal to provide sustainable and affordable housing," said Laura Reinhard, vice president and general manager, Honeywell's Foam and Industrial Products business. "It's also exciting to see the ongoing success of Elastochem's Insulthane Extreme. As this project demonstrates, architects and leading contractors, such as Great Northern, value its ultra-low global warming potential (GWP) and superior foam performance."

CASE STUDY RESULTS

Laura Reinhard,
Vice President and
General Manager,
Honeywell's
Foam and
Industrial Products Business.



Prior to the retrofit, the complex had been a tavern, banquet hall, and rooming house. It had been neglected and fire-damaged.



Closed-cell spray foam is being applied over the membrane on the exterior walls to meet Passive House requirements.



Parkdale Landing's design is intended to draw people's attention and be an exciting new element for East Hamilton.

ATTRACTIVE, HIGH PERFORMANCE DESIGN REFLECTS CITY'S HERITAGE

From the beginning, it was clear that close collaboration between Indwell, Invizij Architects, Schilthuis Construction, and others would be essential. This complex project included gutting, rebuilding, and renovating an approximately 60-year-old neglected, fire-damaged building that at one time was a tavern and rooming house.

Emma Cubitt, project architect at Invizij, explained the design inspiration, "The building is located quite close to steel mills and the industrial part of our city. We wanted to reflect some of that heritage in the design by using exterior cladding that kind of looks like shipping containers, and colorful patterns to give energy to the facade."

CLOSED-CELL SPRAY FOAM - THE RIGHT INSULATION CHOICE

Early in the design phase, Invizij explored different insulation options

PARKDALE LANDING AT A GLANCE

- First Passive House¹ retrofit project of this scale in Canada
- Restaurant and retail space (ground level)
- 57 apartments (mainly studio)
- Large upper deck where tenants can grow vegetables and enjoy gardens
- Funding is through Indwell's fund raising and federal, provincial, and municipal forgivable loans
- Completion anticipated summer 2018

to achieve the high level of energy efficiency required for Passive House certification, including mineral wool, wood fiber, and various types of wall assemblies. "Because part of this building was a retrofit, we had to insulate on the outside of the brick that was already there," Cubitt said. "Therefore, to simplify the overall construction, we decided to insulate the entire building from the outside. Spray foam was the best way to achieve the R-values* and the air tightness we require." Fiberglass clips for the cladding were specified to reduce thermal bridging.

Rockford Boyer, technical manager, building enclosure, at Elastochem added, "Today's architects want superior technology in their insulation. Traditionally, Passive House buildings have used basic insulation types such as mineral fiber and others. By applying Insulthane Extreme to the building's exterior over the membrane, it is providing a high-performance building envelope with a very low GWP." Boyer emphasized that like all insulations, spray foam must be installed correctly and therefore, Elastochem partners with experienced contractors such as Great Northern Insulation (GNI).

SOLSTICE LBA IS BASED ON HYDROFLUORO-OLEFIN TECHNOLOGY. SOME OF ITS FEATURES INCLUDE:

- Ultra-low global warming potential of 1 (99.9% lower than the HFC blowing agents it replaces and equal to carbon dioxide)
- Non-ozone-depleting
- Nonflammable (ASTM E-681, EU A11)
- Listed under the U.S. EPA's Significant New Alternatives Policy (SNAP) program to replace ozone depleting substances
- Listed on the TSCA inventory
- VOC-exempt per U.S. EPA
- Reliable supply from Honeywell



Graham Cubitt,
Indwell



Emma Cubitt,
Invizij Architects



C.J. Vanderwoude,
Great Northern Insulation



Rockford Boyer,
Elastochem

DEMAND FOR INSULTHANE EXTREME WITH SOLSTICE LBA RISES

At Parkdale Landing, GNI is spraying 23 sets of Insulthane Extreme. C.J. Vanderwoude, GNI's corporate production, training, and development coordinator, said the installation

is going very well, "Our crew really enjoys the product. The adhesion and foam consistency have been extraordinary. The crew is also excited about being able to control and spray the same pattern at all times, with consistent yields and densities."

He said, "To have a system that is easy to use for our sprayers, especially during training, is very important at GNI. The Solstice LBA system is an asset to us and all other insulation companies."

Mike Benetti, Elastochem's commercial sales manager, is pleased with the way architects and contractors are embracing the product, "Architects see the environmental benefits of Solstice LBA over traditional spray foam materials and we're seeing a big uptake in both the commercial and residential segments."

Benetti said, "Insulthane Extreme is an integral part of Elastochem's future growth. Due to its outstanding performance, as well as the phaseout of HFC blowing agents, we see it becoming a larger and larger percentage of our sales."

PARKDALE LANDING – PROVIDING HOPE AND DIGNITY

Graham Cubitt explained that Parkdale Landing will not only provide high quality housing, it represents much more, "For us, the underlying values are hope, dignity, and love. When we extend that to our tenants, they thrive. When we extend that to our neighborhood, it thrives. When we can extend that to our environment, we know we are having a positive impact on every community we're a part of and we're really proud of that."

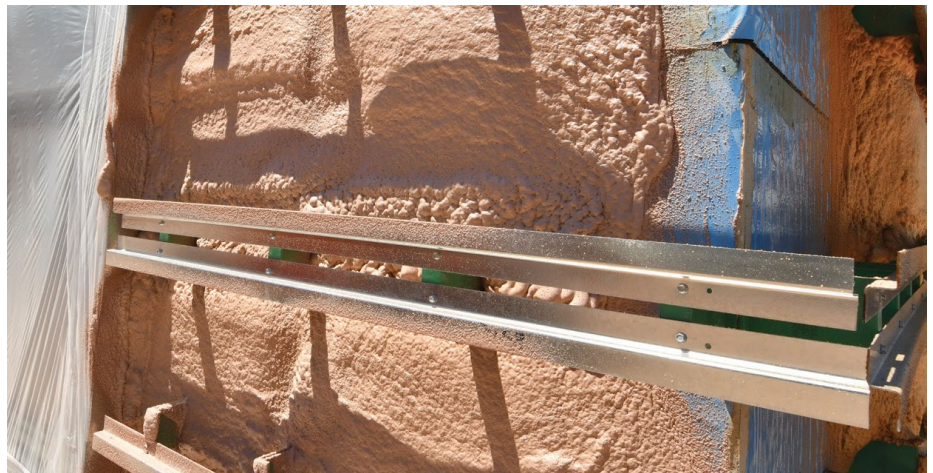
ADDITIONAL SYSTEM BENEFITS HIGHLIGHTED BY GNI INCLUDE:

- Minimal equipment and temperature adjustments
- Easier pattern recognition
- Requires less gun drilling (reduced clogging)
- Ability to use O1 and O2 gun chambers with different pressures improves performance
- Increases crew productivity



To date, we've done over 100 commercial projects and about 1,000 residential projects using Insulthane Extreme coast to coast.

Mike Benetti, Elastochem



Insulthane Extreme featuring Solstice LBA was applied on the exterior walls to provide outstanding thermal performance and air tightness.

1. Passive House is recognized internationally as the proven best way to build for comfort, affordability, and energy efficiency of residential, institutional and commercial buildings, through all stages of design, construction, and livability. www.passivehousecanada.com

* Check your SPF seller's fact sheet for specific R-values when comparing ccSPF to other insulations. Higher R-values mean greater insulating power.

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For more information

advancedmaterials.honeywell.com/us/en/products/foam-blowing-agents

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3319 FP BA v6 | August 2024
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