# Cabot Aerogel Enhances Daylighting Experience for Green New York City Apartments

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*TEN23 architects utilize Solera® glass units with Lumira™ aerogel windows to provide natural light and dramatically improve thermal performance while minimizing energy costs*

BOSTON--(BUSINESS WIRE)--Mar. 28, 2012-- A 12-story apartment building in New York has become the world's first large residential project to use Cabot Corporation's (NYSE: CBT) Lumira™ aerogel within its window system. Cabot's material was used within Advanced Glazings' Solera® insulated glass units which allows for maximum daylight to enter a building, while providing superior levels of insulation and sound resistance.

Solera(R) glass units with Lumira(TM) aerogel provide daylighting capabilities for luxury green apar ...

Solera(R) glass units with Lumira(TM) aerogel provide daylighting capabilities for luxury green apartment building, TEN23 (Photo: Business Wire)

The New York apartment building, known locally as TEN23, has 111 units and is located next to Highline Park at 500 West 23rd Street. The new building, which opened in January, was designed by Gerner Kronick + Valcarcel, Architects PC.

The owners of TEN23 told the architects they wanted to design apartments that were filled with natural daylight, and common terraces filled with trees and lawns, to help create a home that reflects the harmony of the countryside with the excitement of the city.

To help achieve this goal, Gerner Kronick + Valcarcel, Architects PC chose Advanced Glazings, Ltd., to daylight the building. Advanced Glazings partnered with Cabot to develop a unique solution. The system created by Advanced Glazings Ltd. uses a combination of glass fiber veils that act as a controlled light diffuser, patented InsolCore™ insulation to eliminate air convection, and Lumira aerogel (formerly called Nanogel® aerogel) to create a daylighting system with the same insulation value as that of a solid wall.

Due to the size of the apartments, it was vital to provide as much valuable daylight as possible. In order to do this while still complying with the strict New York building regulations for energy efficiency and sound insulation, the architects used Solera R18 glass units with Lumira aerogel to increase the overall insulation value of the project. Consequently, the building was designed so that 34 percent of all the windows are Solera glass units, which offers a glass insulation resistance value of R-18 and a sound insulation that exceeds outdoor-indoor transmission class (OITC) 36 using a standard construction of 6mm annealed. In comparison to a typical double glazed window that offers a resistance value of R-3 to R-4 and an OITC in the low 20s, these results are unprecedented in a glass window of 6mm.

"We were excited to have an opportunity to showcase Solera glass units with Lumira aerogel in TEN23," said Avi Bar, vice president of Advanced Glazings, Ltd. "Our patented method to stabilize aerogel in our InsolCore™ insulation, meant that architects finally had a robust solution that allowed for controlled daylighting with unmatched durability and thermal efficiency."

The remaining windows were triple glazed. The combination of Lumira™ aerogel and triple glazed windows ensured that the apartments could have floor to ceiling windows admitting the maximum amount of light while offering superior energy efficiency, excellent sound insulation and building code compliance.

"Using Solera R18 units with Lumira aerogel was a very important component of the project," said project architect Michael Fontaine of Gerner Kronick + Valcarcel, Architects PC. "The panels have excellent insulation value which enabled us to design very large windows. In addition, the windows diffuse the natural daylight eliminating hot spots and glare and filling the apartments with soft museum quality light. We were also able to exploit the translucent appearance of the Lumira aerogel to enhance the exterior design of the building by contrasting clean hi-tech glass sheets against a playful pattern of decagons formed in the adjacent concrete panels."

In order to meet building code, the south façade of TEN23 required a fire-resistant construction. Rather than build that façade with brick or concrete infill, the architects installed insulated, opaque glass panels with fire-rated systems behind to maintain the scale and pattern of the façade. Where permitted, the architects designed a number of panels with translucent and clear glass to provide privacy and light.

The TEN23 project was designed to be as environmentally friendly as possible. To achieve this, Gerner Kronick + Valcarcel, Architects PC designed the building to be constructed with locally sourced poured concrete formed with the same architectural forms on each floor. The exposed concrete adds to the overall modern design of the building and also helps to regulate temperature. The use of Lumira aerogel and other environmentally friendly building materials such as these have resulted in TEN23 earning a Silver Award from the National Green Building Standard, ICC 700-2008.

"As green and sustainable building construction continues to grow, we understand that energy efficiency and sustainability are top of mind for architects in the design and construction of today's buildings," said Raj Chary, general manager of Cabot Aerogel. "TEN23 is a testament to the need for products that can provide high performance insulation and energy efficiency, while also delivering additional benefits such as natural lighting and noise reduction. Our collaboration with Advanced Glazing is a great example of how our technical partnerships can deliver innovative products containing Cabot's aerogel materials to meet the needs of the market today and in the future."

**What is Lumira™ aerogel?**

Sometimes called "frozen smoke," aerogel is the lightest and best insulating solid in the world. Lumira aerogel, Cabot's branded aerogel, is a hydrophobic aerogel produced as particles. Each particle consists largely of air, greater than 90 percent, contained in a structure with pore sizes less than the mean free path of air molecules, which severely inhibits heat transfer through the material. Cabot produces Lumira™ aerogel in a state-

of-the-art manufacturing facility located near Frankfurt, Germany where it began commercial production in 2003. Cabot certifies it has completed the EU REACH pre-registrations required for all Cabot aerogel products. For more information about Lumira aerogel please visit www.cabotaerogel.com.

**About Cabot Corporation**

Cabot Aerogel is a business of Cabot Corporation. Cabot Corporation is a global specialty chemical and performance materials company headquartered in Boston, Massachusetts, USA. Cabot's major products include carbon black, fumed silica, inkjet colorants, aerogel, elastomer composites, and cesium formate drilling fluids. The company's website is: www.cabotcorp.com.

**About Advanced Glazing**

Advanced Glazings Ltd. (www.advancedglazings.com) has developed a line of glass glazing products that effectively daylight buildings by diffusing direct sunlight, reducing glare and driving light deeper into interior spaces. Solera® units improve indoor light quality and energy efficiency. In 2009 Solera launched its line of Solera R18 units with Lumira aerogel (formerly Nanogel® aerogel) units to provide a robust and stabilized aerogel solution. The result is the highest insulated daylighting units in the world. Designed in a standard insulated glass format, these units can be handled and installed by any glazing contractor and work with any industry standard glass framing system. Founded in 1995, Advanced Glazings Ltd. develops, manufactures and markets sustainable and commercially viable technologies related to sunlight.

Photos/Multimedia Gallery Available: http://www.businesswire.com/cgi-bin/mmg.cgi?eid=50219945&lang=en

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