



## Case Study:

# Leading-edge glass design enlightens the Lincoln Center's Alice Tully Hall renovation

Architect Diller, Scofidio, & Renfro transforms 40-year-old design into a new “grand opening” on Broadway, made with high-strength SentryGlas<sup>®</sup> ionoplast interlayer.

TO LEARN MORE ABOUT PUSHING THE LIMITS OF GLASS, VISIT  
[WWW.SENTRYGLAS.COM](http://WWW.SENTRYGLAS.COM)

**kuraray**

Leading-edge glass design enlightens the Lincoln Center's Alice Tully Hall renovation



The New York arts community is turning inside-out to celebrate a dramatic change of scenery at the Lincoln Center's renovated Alice Tully Hall and Julliard Building. Once seen by many as imposing and bunker-like, the building entrance has been lifted, cantilevered and opened into a inviting "Grand Foyer." The popular new gathering place helps set the tone for continued development of a "Street of the Arts" at the Lincoln Center.

The redesign at 65th and Broadway literally suspends belief. It transforms the venue into a floating performance hall, jutting out like the prow of a ship, riding on a wave of clear, mullionless glass. The building's all-glass entranceway and facade are made with SentryGlas® in a Pilkington Planar® system installed by W&W Glass.

Challenging both size and fixturing limitations of the past, the new facade features individual laminated glass lites up to 4.88 m (16 ft) tall, tiled together to create a vast, wide-open expanse of glass that brings the outside in, and artfully blends people and activities from the street scene, to the performance hall.

"Our challenge was to engineer as tall and open a facade as possible, including a frameless glass that's more than 13.8 m (45 ft) tall at the leading edge," explains Jeff Haber at W&W Glass. Haber's firm specializes in point-supported facades and has been an early adopter of new glass strength and planarity made possible by SentryGlas®.

The result is a truly grand opening that puts SentryGlas® at yet another widely popular Manhattan arts-related destination. (Another recently completed project using SentryGlas® in Manhattan is the gem-like, all-glass TKTS booth at Times Square, where visitors line up for same-day Broadway show tickets.)

New York architects have been keen to adapt the latest in safety glass technology, both for strength and security reasons, but also for the dramatic expanses of daylight and transparency made possible by systems such as the Pilkington Planar® facade system.

Advantages of using SentryGlas® in such designs include the ability to butt-seal adjacent pieces of glass with reduced

## Leading-edge glass design enlightens the Lincoln Center's Alice Tully Hall renovation

worry about sealant compatibility or edge degradation due to weathering. Compared with traditional safety glass interlayers, SentryGlas® is 5 times tougher and up to 100 times more rigid, enabling novel structural designs and fixturing solutions.

The creation of frameless leading edge of the entryway glass is particularly effective at creating the feeling of a floating structure overhead, and seamless transparency looking from outside in, or from inside out to the street.

Haber adds, "SentryGlas® lent itself to wider spans with less need for intermediate fittings; it also reduced the needed glass thickness."

For the Alice Tully Hall transformation, W&W used laminates made of two glass layers, 6 mm (¼") and 12 mm (½") thick, brought together with a 1.52 mm (60 mil) interlayer of

SentryGlas®. For positive fixation at the corners of the large glass panes, W&W relied on a TriPyramid cable net structure with 101.6 mm (4 inch) round corner patches. Mid-span fixturing, which adds to stability and planarity of the structure, uses Pilkington's elegantly engineered "Integral™" fixtures, offering structural support via a flange and bolt embedded in the laminate. Because the Integral™ fittings are secured inside the laminate, the result is a smooth exterior glass surface adding further to the project's elegance and reflective sparkle.

Hosting around 750 events a year, the Alice Tully Hall renovation is being widely praised by architects and patrons alike. Its glass-enclosed Grand Foyer space also hosts the "at 65" cafe, which is open to the public. The resulting visual blend of New York's street scene and performance arts venue adds special magic to the modernized arts setting and people-watching opportunity, made possible by SentryGlas®.



SentryGlas® helped W&W Glass engineer a frameless leading edge for the Alice Tully Hall renovation, adding to its feeling of openness.

## Lighter façade panels enable more subtle supporting structures

For decades, interlayers made of polyvinyl butyral (PVB) have been the industry standard when producing laminated safety glass. Architects are well aware of the possibilities and limitations of such glass when used extensively in façade engineering, for roofing and window panels. In contrast, SentryGlas® enables an entirely new approach because the interlayer is over 100 times stiffer and five times stronger than PVB. As a consequence, there is an almost perfect

transmission of load between two laminated sheets of glass, even at high temperatures, leading to the excellent flexural behavior of the glass when under load - also under direct sunlight in high summer. Accordingly, laminates with SentryGlas® show less than half the rate of deflection when compared to laminates with PVB, when under the same load, and thus almost the same behavior as monolithic glass of the same thickness.

Leading-edge glass design enlightens the Lincoln Center's Alice Tully Hall renovation



As well as improved strength and stiffness, other benefits of SentryGlas® include:

- **Safety:** In the event of breakage, glass fragments remain firmly bonded to the interlayer, reducing the chance for injury
- **Security:** SentryGlas® can be used in glazing that withstands bullets, hurricane-force winds and even bomb blasts
- **Durability:** SentryGlas® is extremely durable and resistant to clouding, even after years of exposure
- **Design Versatility:** SentryGlas® can be used in glass manufactured flat or curved, including annealed, toughened, heat-strengthened, spandrel, wired, patterned and color tinted glass
- **UV control:** SentryGlas® is available with or without UV transmittance

**REGIONAL CONTACT CENTERS**

Kuraray Co., LTD  
Ote Center Bldg.  
1-1-3, Otemachi  
Chiyoda-ku, Tokyo, 100-8115, Japan  
Phone: +81 3 6701 1508

Kuraray Europe GmbH  
Glass Laminating Solutions  
Philipp-Reis-Str. 4  
65795 Hattersheim, Germany  
Phone: +49 (0) 69 30585300

Kuraray Americas, Inc.  
2625 Bay Area Blvd. #600  
Houston TX 77058, USA  
Phone: +1.800.423.9762

Kuraray Mexico S.de R.L. de C.V.  
Homero 206, Polanco V seccion,  
cp 11570,  
Mexico City, Mexico  
Phone: +52 55 5722 1043

For further information  
about SentryGlas®, please visit  
[www.sentryglas.com](http://www.sentryglas.com)

**kuraray**