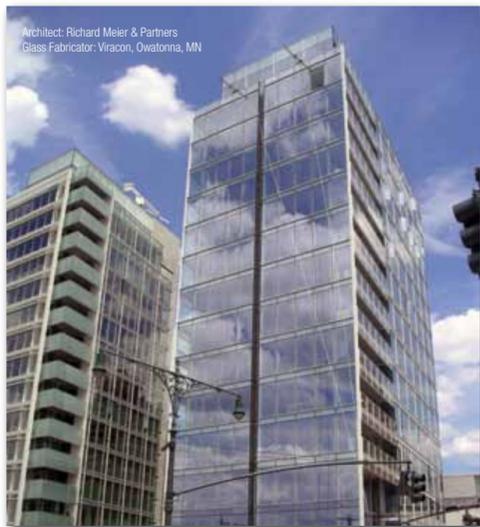




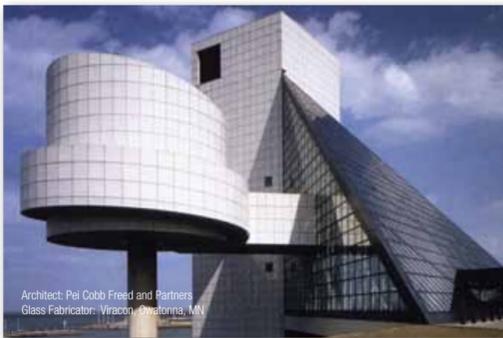
## Project Gallery



Architect: Richard Meier & Partners  
Glass Fabricator: Viracon, Owatonna, MN

### 165 Charles Street Apartments

Glass can be the weakest link in the transmission of unwanted noise into a building. The insulating glass, made with Saflex® polyvinyl butyral (PVB) interlayers, provides isolation of the towers' interior spaces from exterior building sounds, which was a critical consideration when selecting glazing for the glass tower. The sound-dampening performance of the Saflex interlayers enhances the relaxing, retreat-like quality of life at the luxury apartments on Charles Street.



Architect: Pei Cobb Freed and Partners  
Glass Fabricator: Viracon, Owatonna, MN

### Rock & Roll Hall of Fame

To fulfill the building's artistic vision as designed by architect I.M. Pei, while meeting the thermal and acoustical design challenges, laminated glass made with Saflex® protective interlayer was used on the sloped glazing applications of the building.

## Architects and Designers Trust Saflex®

Around the world, architects and designers trust Saflex when performance and safety are their most critical concerns. The reason for their confidence is simple. No matter what the specifications or performance targets, Saflex interlayer technology delivers advanced glazing performance for demanding applications.

[www.saflex.com/acoustic](http://www.saflex.com/acoustic)

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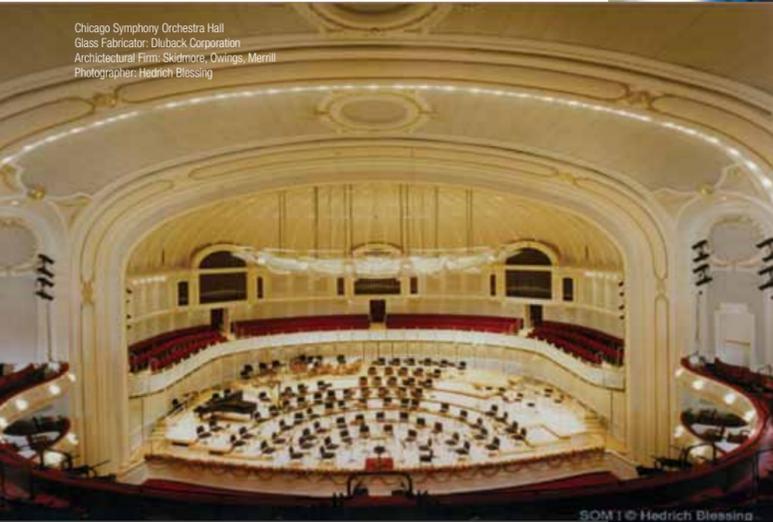


# A Sound Solution

## Advanced Acoustic Glazing Technology



Chicago Symphony Orchestra Hall  
Glass Fabricator: Duiback Corporation  
Architectural Firm: Skidmore, Owings, Merrill  
Photographer: Hedrich Blessing



Saflex® extends the frontiers of acoustic glazing for architects and designers who demand the highest level of sound damping performance. In fact, for more than 80 years, Saflex® has been the world's leading brand of protective interlayer used in laminated glass – extending the frontiers of performance glazing for architects and designers who demand the most reliable level of acoustic performance.



According to the United States Environmental Protection Agency's Office of Noise Abatement and Control, "Noise constitutes a real and present danger to people's health and can produce serious physical and psychological stress."

## Sounds of the City

Rush hour traffic, airplanes, construction sites, equipment, blaring music – these are just some of the noises polluting urban environments today. Unfortunately, noise is an unavoidable part of the daily environment, but it can be especially intrusive when it finds its way indoors.

To some, unwanted noise may only be a minor irritant. To others, exposure to excessive noise has been shown to cause hearing problems, stress, poor concentration, lower workplace

productivity, communication difficulties, lack of sleep and a loss of psychological well-being. At its most extreme, loud noise can even cause instant and permanent hearing loss.

Since transferred ground vibrations and sound transmitted through windows are the greatest contributors to noise in building spaces, improving the ability of windows to resist the passage of sound into building spaces is a high priority for architects and building designers.



## Designing for Sound Reduction

Modern design trends emphasize the liberal use of glass in building exteriors and interiors, while building owners and occupants still demand the highest level of environmental comfort. Sound transmission into building spaces generally occurs through the weakest element – typically, glazing constructed of ordinary window glass.

In response, architects and designers must consider protecting a building's environment from increasing noise levels when specifying glazing materials for new and renovated structures. The proven sound-damping performance of Saflex acoustic interlayers offers architects and designers a clear and compelling alternative for addressing these complex demands.

### Exterior Applications

Isolating interior building spaces from exterior sound is critical in order for those spaces to serve their intended purpose. Nearly all buildings have at least some areas that could be adversely affected by high levels of sound transmitted from outside. Certain applications like airports, hotels and high-rises as well as densely populated commercial and residential areas, mandate sound reduction as a key design goal.

- Offices and retail centers
- Schools, hospitals, and government buildings
- Theaters, museums, other entertainment venues
- Airports and surrounding structures
- Hotels and condominiums
- Neighborhoods

### Interior Applications

With the growing trend of open architectural environments and increased use of glass for interior walls, unwanted sound is on the rise. Unfortunately, ordinary glass is a poor acoustic barrier. Interior sound pollution can make it more difficult to concentrate, to speak on the phone or to keep information private and confidential. Many application opportunities exist where noise reduction can provide increased interior security, privacy and comfort including:

- Business offices, boardrooms, meeting rooms and cubicles
- Hotel and restaurant spaces
- Medical care centers and health clinics
- School classrooms and lecture halls
- Recording studios and broadcast facilities
- Concert halls, theaters, auditoriums and museums
- Legal, investment and accounting private practices
- Home offices and theaters



## Saflex® Sound Solutions

### Reduce Perceived Noise by up to 50%

While Saflex's standard interlayer provides superior noise reduction capabilities compared to ordinary glass, Saflex's SilentGlass Technology™ is the solution for architects specifying glazing systems that require even higher levels of acoustic comfort.

SilentGlass Technology is an advanced, three layer system designed to decouple and disseminate sound waves for superior sound damping performance. This patent-pending system targets sounds in the 1000 – 3000 Hz range which is the "noise transparency" range that allows the most irritating of sounds to penetrate windows. Window systems utilizing Saflex's SilentGlass Technology can result in a reduction of up to 10 decibels in the "transparent" frequency which equates up to a 50% reduction in perceived sound!

This state-of-the-art product offers increased damping performance without increasing the overall glass thickness or air space for the same configuration. Weighing approximately 11 percent less than tempered glass of the same thickness, laminated glass made with Saflex SilentGlass Technology delivers higher STC performance while saving weight and consequently construction costs.

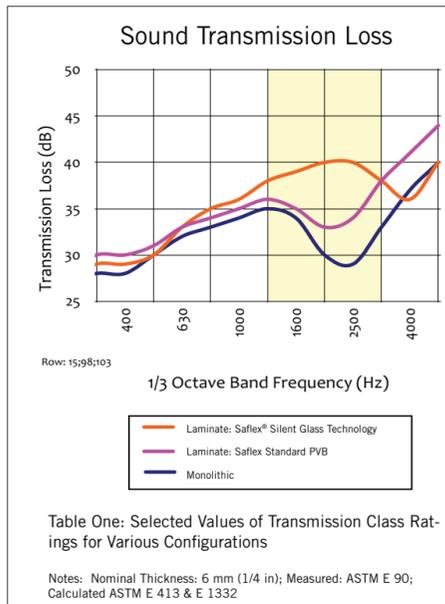
### Additional Benefits of Laminated Glass

In addition to proven acoustic performance, Saflex interlayers deliver all the other benefits inherent with laminated glass including:

- Safety:** Protecting building occupants and pedestrians from accidental glass impact, breakage, or fallout.
- Security:** Providing burglary and forced-entry resistance, ballistic (bullet) protection and bomb blast resistance.
- Storm:** Providing hurricane force resistant technology to laminated glazing systems.
- Solar:** Filtering more than 99 percent of UV rays, controlling visible light radiation & reducing heat build-up & thermal stress.

Architects and designers are also discovering the beauty that laminated glass provides with endless color options for glazing. Visit the Vanceva color studio at [www.saflex.com/vanceva](http://www.saflex.com/vanceva) to discover the custom color system, whites collection, specialty colors, and colors that match standard colored glass.

For additional information regarding designing for Acoustic performance using Saflex interlayers including technical information specific to Acoustic testing requirements, email us at: [glazin@solutia.com](mailto:glazin@solutia.com).



### Acoustic Performance

Common laminated glass configurations with Saflex SilentGlass Technology™ acoustic interlayer based on tests conducted at laboratories are shown below.

Specimen Configuration (inches)	Overall Thickness (inches)	STC <sup>1</sup>	OITC
<b>Monolithic Units</b>			
1/4	1/4	32	29
<b>Laminated Single Units</b>			
1/8- Saflex® 0.030-1/8	1/4	34	30
1/8- Saflex® SilentGlass Technology 0.030-1/8	1/4	35	30
1/4- Saflex 0.030-1/4	1/2	37	33
1/4- Saflex SilentGlass Technology 0.030-1/4	1/2	39	34
<b>Laminated Insulating Glass Units</b>			
1/4 [1/2 Air Space] 1/8- Saflex 0.030-1/8	1	41	34
1/4[1/2 Air Space]1/8- Saflex SilentGlass Technology 0.030-1/8	1	42	33
1/4 [1/2 Air Space] 1/4- Saflex 0.030-1/4	1 1/4	41	35
1/4 [1/2 Air Space] 1/4- SilentGlass Technology 0.030-1/4	1 1/4	43	34
<b>Double Laminated Insulating Glass Units</b>			
1/8- Saflex 0.030-1/8 [1/2 Air Space] 1/8- Saflex 0.030-1/8	1	40	33
1/8- Saflex SGT 0.030-1/8 [1/2 Air Space] 1/8- Saflex SGT 0.030-1/8	1	42	33

Notes: 1 = Glass only values. Frequency and single numbers transmission loss numbers will change with variables such as edge anchoring, size, temperature, frame type and air infiltration of window systems. STC and OITC values are provided from glass samples held in place with a pliable mastic; nominal glass size 3 ft x 6 ft; test temperature nominal 70 degrees F