

## Blast Protection and Physical Security

*GlassLock's ForceDefender™ window systems enhance security and offer blast protection to buildings, particularly those that place great emphasis on glass as an architectural element and design feature.*

The ForceDefender™ protective glazing systems included:

- Primary Windows
- Doors
- BlastBlinds™
- Store Fronts
- Catch Bar Systems
- Ballistic Resistant Glazing
- Mullion & Lobby Reinforcement
- Custom Masonry Anchors

ForceDefender™ windows and doors offer the finest and most flexible architectural solutions to your security fenestration requirements. They come in a primary and secondary version, fixed or operable, with a customizable finish. They have been tested to meet an ISC/GSA Performance Criteria Level 2 as-well-as provide Radio Frequency (RF) attenuation and eaves-dropping countermeasures.

Our new, energy efficient, low profile secondary windows provide a low cost security glazing solution to meet historical and architecturally significant requirements. These secondary windows are available in a fixed or operable configuration. The operable window is designed for easy access to the primary window for cleaning and maintenance.

GlassLock's architectural anchoring solutions provide a critical component to a "Balanced Design" solution that is often overlooked. The balanced design approach is to equalize the capacities of the glass, window frame and anchors with the rest of the structure (substrate, walls, structural frame, roof, etc.). GlassLock's systems can be design-built or retrofitted to meet architectural and structural requirements.

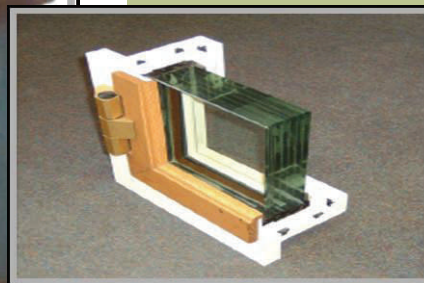


"Architectural glass has been used in buildings for centuries, but the recent use of larger areas of glass and the desire to minimize or remove the supporting structure, has placed greater demand on the glass a structural ma-

### Glass Failure, Glass Hazard

terial."

University of BATH Center of Structural and Architectural Engineering "...the building is almost completely made to resemble a glass house, which could be devastating in an emergency scenario...that is to say, that when shattered, each piece of glass becomes a potential flying piece of cutthroat shrapnel!!!" - excerpt from an Al Qaeda operative's potential target assessment report.

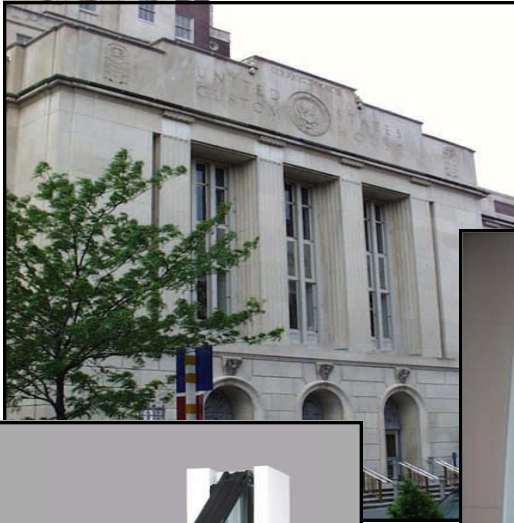


By enhancing the aesthetics of buildings with glass, they are made more susceptible to glass failure and terrorist attacks.

*Protecting the Homeland one building at a time.*

## Blast Protection and Physical Security

*Incorporated into new construction or as a retrofit solution, the ForceDefender™ product line meets the challenging requirements demanded by today's security professionals and design engineers.*



Interior Retrofit Blast Window



Operable Blast Window



Tilt and Turn Blast Window

**The Situation:** As part of a U.S. State Department initiative, officials at the U.S. Custom House in Philadelphia were

### US Custom House Retrofit

required to increase security protection for glass hazards. The building is on the National registrar of Historical Property. Its architectural integrity could no be compromised. There were twenty one original windows that could not be replaced or merely upgraded with standard glass fragment retention methods. Because GlassLock has experience installing protective window systems in architecturally significant and historic buildings, the GSA Regional Historic Officer was confident when choosing GlassLock to design and install the custom retrofit window and anchoring system.

**The Solution:** GlassLock worked closely with the GSA Regional Historic Officer to design a custom solution using low profile secondary windows. This solution provided the desired level of glass hazard protection with no effect on the existing window system. The secondary windows did not interfere with the building's sight lines and they were unnoticeable to the building's occupants. From the outside there was no indication anything had changed. The historical character of the interior and exterior view had not been compromised. With Blast criteria met and original sight lines undisturbed, these unobtrusive window inserts also offered the added feature of energy efficiency and sound abatement to a historic building.

### Windows and Doors

- Designed to project specifications
- New Replacement or insert
- Maintains historic façade