

### *Protective Glazing*

Exterior Protective Glazing: Properly made and installed leaded, stained and faceted glass does not require exterior protective glazing to make it waterproof; however, if properly installed in conjunction with stained or leaded glass, protective glazing may afford some protection against vandalism and external damage. Because of its high resistance to breakage, faceted glass does not need protective glazing. If protective glazing is to be included as part of the project, it must be decided early in the building program so that proper framing and installation details can be developed to eliminate many of the negative effects normally associated with its installation.

Clear, laminated safety glass and tempered glass are superior to acrylic or polycarbonate plastics as protective glazing. The plastics craze and yellow in relatively short periods of time, while glass remains clear, preserving a clean appearance to the building exterior.

Current research dictates that protective glazing be vented, thereby alleviating the possibility of excessive heat buildup and the trapping of condensation. The specific method of venting this enclosed space varies from installation to installation due to many diverse conditions, ranging from the type of frame system being used to the climatic conditions and microenvironment of the building. Before considering the inclusion of protective glazing, it is advised that the advantages and disadvantages as well as the appropriate installation method be discussed with the stained glass craftsman.

Protective glazing is sometimes installed as an afterthought over existing stained glass windows and frames, usually in such a fashion that is insensitive to the architecture of the building and without regard for potential harm to the stained glass. Systems of this type normally include installing the glazing material in a bed of sealant or butyl tape along with ethafoam backer rod and then face-glazing the material with a silicone sealant. This system can be detrimental to the stained glass and supporting frame and is not recommended

by the Stained Glass Association of America. In the event protective glazing over existing stained glass windows is determined to be a necessity, systems are available to safely install the needed protection with minimal disruption to the aesthetics of the building. Please refer to the Stained Glass Association of America's *Standards and Guidelines for the Preservation of Historic Stained Glass Windows* for further discussion of installation of protective glazing.

In general, protective glazing should be installed in a designed system originating concurrently with the stained glass, not included as an afterthought. When included, it should be installed in such a fashion that provides inter-cavity ventilation between the interior installed stained glass and the exterior installed protective glazing. The space between the layers of glazing should be as close to  $\frac{3}{4}$ " as conditions allow. It is recommended that glazing materials, regardless of type, be a minimum of  $\frac{1}{4}$ " thick, installed in a fashion that allows the material to freely expand and contract within the system and that provides for mechanical engagement of the material to the framing system.

Glazing Sealant: It is highly recommended that all sealant be of the non-acetic gas forming or neutral-cure variety and that it be chosen based on the composition of the materials and substrates to be sealed. Appropriate bond-breaking tape and ethafoam backer rod should be used as required to achieve the flexibility necessary for expansion and contraction of the finished installation.

Specifying stained, leaded and faceted glass — as well as protective glazing — can be as much of an art as the creation of the windows themselves. The requirements for installation are in most cases unique to the material and the project at hand and require considerable advance planning. The guarantee for a timely and successful project is laying the proper groundwork early on. Just as the foundation of a building dictates its strength, consulting with a stained glass artist before the building is started will lay the foundation for a cost-effective and successful stained glass project.

