

Advanced Optics

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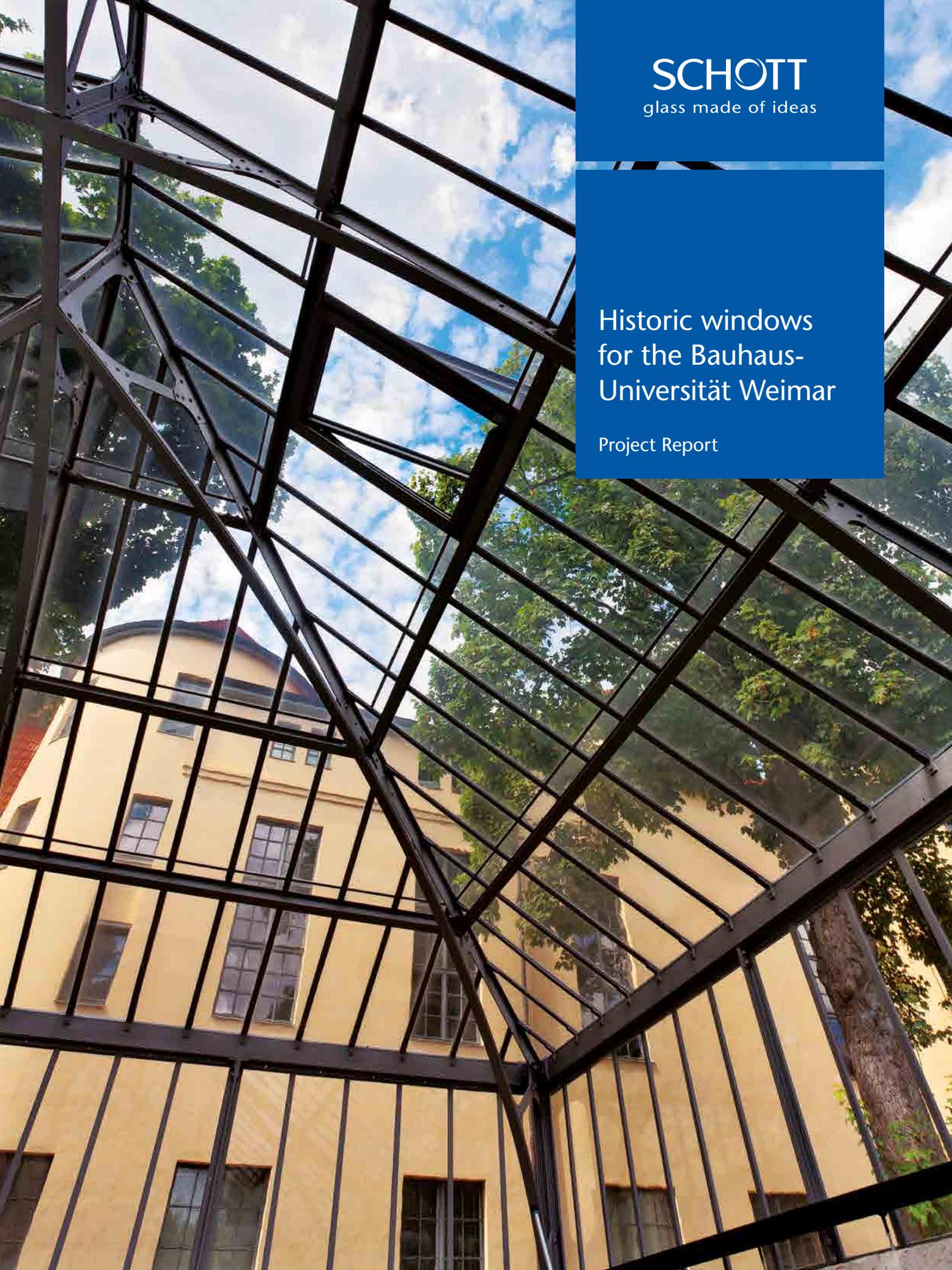
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**SCHOTT**  
glass made of ideas

Historic windows  
for the Bauhaus-  
Universität Weimar

Project Report

# Innovative customized solutions involving the SCHOTT Restoration Glasses RESTOVER® and TIKANA®

During restoration of the historic buildings at the Bauhaus-Universität Weimar, SCHOTT not only demonstrated its know-how as a manufacturer of restoration glasses, but mainly its expertise in developing innovative solutions that meet difficult technical and aesthetic challenges.

## The Task

The Bauhaus-Universität Weimar has written important chapters of art and building history over the past 150 years.

Two important showplaces for this history were elaborately restored to celebrate its anniversary: the Van-de-Velde-Building built in the years 1905/06 that has since been awarded the status of a UNESCO World Cultural Heritage site and the Bauhaus.Atelier built in 1886. Thanks to its extensive experience in the area of historic glass renovation, SCHOTT was hired to manage the restoration work as an expert on special-purpose glass.

The company developed and manufactured nearly 1,000 customized glass elements for the windows of the Van-de-Velde-Building and the roof and side glazing of the Bauhaus.Atelier.

## The Challenge

Due to their entirely different architectural natures, both buildings placed completely different demands on the glass products that had to be developed and their aesthetics and properties.

The monument protection authorities required a historically authentic, slightly irregular surface structure as well as transparency. At the same time, modern constructional parameters still applied for security, thermal insulation and protection against the sun: This called for a multi-pane glass construction that was completely different for each building, however. With the Van-de-Velde-Building, the greatest challenge was to make the insulated glass structure much thinner than it would normally be so that it would fit into the historic window frames.

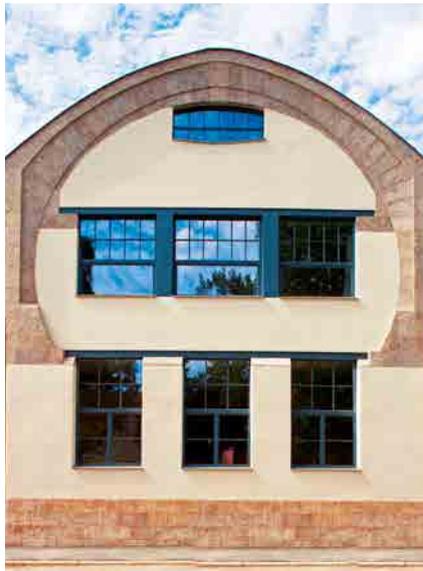
With the filigree, glazed metal framework (the roof and walls) of the Bauhaus.Atelier, producing the so-called pattern dies, in other words panes with completely different angles, made it much more difficult to cut and join the glass sheets.

## The Solution

SCHOTT developed a solution on the basis of its restoration glass TIKANA® for the Van-de-Velde-Building. With respect to its appearance, TIKANA® satisfied the monument conservation requirements thanks to its irregular surface structure. Technologically speaking, the experts at SCHOTT even went one step further by applying a sun protection coating. The second interior pane consists of a float glass that features a thermal insulation coating.

The intermediate space between the panes was reduced from approx. 16 to 4 mm and then filled with the noble gas krypton to increase the insulation effect.

SCHOTT also developed an innovative glass laminate for the glazed metal framework of the Bauhaus.Atelier. This consists of the restoration glass RESTOVER® on the outside and extra-clear low-iron float glass on the inside. Due to its wavy surface, RESTOVER® resembles the window glass that was used around the turn-of-the-century. Extra-clear low-iron float glass was chosen because it creates a clear impression without a green tint. The two elements were joined by several overlapping PVB foils that enhance the mechanical protective function of the glazed units and significantly block the level of UV transmission.



SCHOTT is not only capable of manufacturing modern glass, but can also manufacture drawn glass using the traditional Fourcault process. The restoration glasses RESTOVER® and TIKANA® feature the irregular, lively looking structure that is characteristic of historic window glass. This is achieved by manipulating during the production process.

#### THE MATERIALS

- TIKANA® |  
4 mm thick in insulation glass unit
- RESTOVER® in laminated glass
- PVB foil
- The noble gas krypton for improved thermal insulation