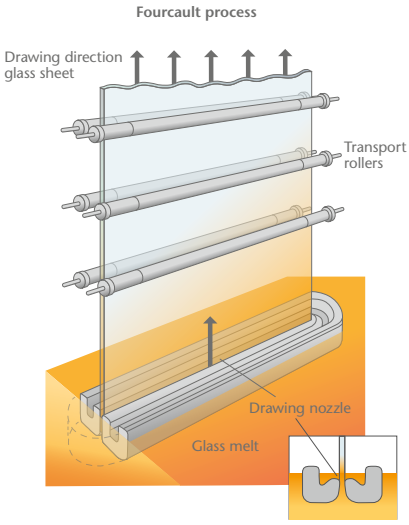
SCHOTT
glass made of ideas

# Glass for Restoration

GOETHEGLAS, RESTOVER®, TIKANA®

# SCHOTT Glass for Restoration

Restoring historical buildings and listed structures is a delicate task in which every detail is important. SCHOTT's glasses for restoration provide a diverse range of products that will meet the requirements of developers, conservationists and architects. The glass is manufactured using the traditional Fourcault process and can be made to look like window glass from different eras.




## Production process

The traditional Fourcault process vertically draws glass from a liquid melt upwards through a nozzle and into a drawing shaft. At the end of the shaft the glass is cut to size. SCHOTT glass for restoration features typical striations arising from the production process. It also has varying degrees of waviness depending on the product. These dynamic surfaces make the glass the ideal choice for restoring windows and doors in historical buildings and structures of different eras.

## Product portfolio

**GOETHEGLAS**
GOETHEGLAS is a colourless, drawn glass with the characterful, irregular surface of historic window glass from the 18th and 19th centuries in particular. It is also ideal for exterior protective glazing, e.g., to protect valuable stained glass from environmental and weather damage.

**RESTOVER®**
RESTOVER® is similar to glass manufactured at the turn of the twentieth century. Its minimal thickness enables easy installation in ancient window frames and profiles. RESTOVER® light has a less structured surface and RESTOVER® plus a more structured surface resembling hand-blown glass.

**TIKANA®**
TIKANA® is particularly suited to buildings dating from the Bauhaus period. Its slightly irregular surface blends harmoniously into the buildings in the classical modernist style. As with the other SCHOTT glass for restoration variants, TIKANA® enables historical looks to be combined with modern building features.

## Specifications and building approvals

Specifications are provided for the physiochemical and technical properties of all SCHOTT glass for restoration variants. The glasses also have the European Technical Assessment ETA-12/0159 from the German institute for building technology (Deutsches Institut für Bautechnik), i.e., they can be processed into standard building products such as toughened safety glass, laminated safety glass and insulating glass, subject to the thickness of the glass.

## Processing options

Processing into laminated glass or laminated safety glass is possible using standard PVB films. This provides security against vandalism, burglary and falls. Special UV or IR filter films can also be used for increased lighting requirements. Sound insulation films reduce noise pollution within a building.

SCHOTT glass for restoration can be thermally toughened and, subject to the thickness of the glass, also made into single-pane safety glass. The increased strength reduces the risk of breakage under certain loads.

In multi-pane insulating glass, SCHOTT glass for restoration is usually installed as the outer pane. Thin, approx. 10 mm insulating glass structures as well as combinations with vacuum insulating glass are possible. Solar protective coatings on the restoration glass can also be provided for some glass thicknesses, which will then reduce heat input into buildings.

## Glass quality

All variants of SCHOTT glass for restoration are characterised by a crystal-like brilliance. The extremely low-iron oxide glass results in high light transmission. It also has two fire-polished surfaces and no tin contamination.

# Content

## GOETHEGLAS



## RESTOVER® light

## RESTOVER® light + TIKANA®



## TIKANA®

# GOETHEGLAS

**Sülzer Burg, Overath**
(built around 1470)

The Sülzer Burg is one of the oldest buildings in Germany's Bergisches Land region. It is a prime example of a simple fortification structure from the late Middle Ages (late Gothic period).

In 2021, a catastrophic flood occurred. The cellar was completely inundated with water with it reaching heights of almost a metre on the ground floor. Extensive renovation work was consequently required, which included replacing the single-pane windows. The new windows were to have increased thermal insulation, soundproofing and burglary resistance. In keeping with the historic building's look, lead bars and 'vibrant' glass surfaces using SCHOTT GOETHEGLAS were used.

Combination of SCHOTT GOETHEGLAS, laminated security glass and SSK4 sound insulation glass in eucalyptus globulus wood

Implementation: 2022, Kuhl company, Odenthal
Planning: PaX AG

# GOETHEGLAS

**Brauhof Rattelsdorf**
(built around 1734)

The ‘Brauhof Rattelsdorf’ brewery was built in 1734 in the form of a 4-sided courtyard. It was then known as the ‘Schenkstatt zum Roten Ochsen’ (The Red Ox Inn).

An L-shaped layout was created on one corner by incorporating a courtyard passageway and a stable building. This layout features two imposing, large façades of roughly equal length, spanned by a hipped roof. The prestigious rural two-storey town house has therefore been skilfully merged into its location in the village.

From the 1960s onwards, the property increasingly fell into disrepair. In 2012, architect Oliver Fischer and his family acquired the derelict property and extensively renovated the listed building.

The renovation primarily involved the use of period materials and techniques. Fischer acted as both architect and owner and attached great importance to authentic, environmentally friendly and sustainable materials. In collaboration with Kramp & Kramp and SCHOTT AG, contemporary technology was combined with period designs, particularly in the windows. Extensive investment was also made in discreet, high-quality technology, such as a combined heat and power unit, laundry chute, PV and centralised vacuum cleaner system.

Renovation began in 2012 and was largely completed in 2022.

Today, the building complex serves as the headquarters of the architects ‘denk mal + Architekten GmbH’. The former public room is used as a marriage venue and regularly hosts events.

Implementation: 2017, Kramp & Kramp, Lemgo
Architectural office: denk mal + Architekten GmbH
Images: denk mal + Architekten GmbH

Combination of SCHOTT GOETHEGLAS and soundproof glazing SSK4 in larch wood


Erbaut im Jahre 1626
Altes Rathaus

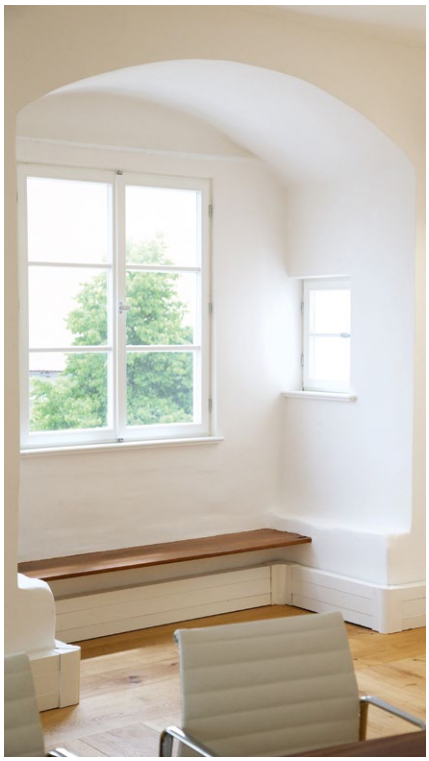
# RESTOVER® light

**Rathaus, Geisenfeld**
(built in 1626)

The historic Rathaus (town hall) is a three-storey, gabled, pitched roof building. Particularly striking are the ridge turret and the monumental columned aedicule on the central bay with a large stucco figure of the enthroned Justitia.

The new box-type windows have several special features. The exterior is made up of cross-pane windows using SCHOTT RESTOVER® light and lead glazing bars. The windows are made of hand painted larch. The box-type window interior comprises an extremely thin, barless insulating glass window with double insulating glass.

Baroque-style mullioned windows have been installed on the first floor, while on the second floor box-type windows with a structure and partitioning corresponding to the period around 1900 were used. These are a reminder of a fire that necessitated renovation work on the upper floor of the building.



Box-type windows with SCHOTT RESTOVER® light,
18 mm lead and wooden bars in larch wood

Implementation: 2015, Neumair, Geisenfeld
Architectural office: Jürgen Hlady, Geisenfeld
Images: Ralf Gamböck

# RESTOVER® light

**Farm building, Bergisch Gladbach**
(built in the early 19th century)

Implementation: 2010, Heil, Bergisch Gladbach
Architectural office: Bernd Heil, Kürten

Windows with SCHOTT RESTOVER® light and extremely narrow profiles in eucalyptus globulus wood

The historic farm building was fully renovated by the owner. The buildings date back to the early 19th century and comprise a house, adjoining stable and a barn. The farm building now serves as a merchandise centre, selling various garden and household items.

The windows in the half-timbered building are PaXpur58 and were fitted with SCHOTT RESTOVER® light.

# RESTOVER® light

**Farm building, Viersen**
(built around 1700)

Combination of SCHOTT RESTOVER® light and burglar-proof glass in eucalyptus globulus wood

The single-storey building with its characteristic half-hipped roof was built around 1700 and refurbished in the 19th century. A document from September 1250 also records a building being present in this location, and the house still features a late-medieval styled opkamer (Low German for a room above a cellar with a floor higher than the other rooms of a house) that survived a fire in the cellar and ground floor reasonably well.

The renovation had clear objectives: The house was to regain its authentic look and character, have minimal energy consumption and fulfil high safety standards.

The new windows and doors match the house as well as the region's styles and colours. A harmonious look is provided with security fittings and a combination of thermal insulation and security glass, as well as SCHOTT RESTOVER® and white spacers in the space between the panes.

Implementation: 2016, Niggemeier, Castrop Rauxel
Architectural office: Andreas Puntke, Dipl.-Ing. Architect AKNW

# RESTOVER® light

**Vöhlinschloß, Lauben**
(built in the 15th century)

The historic building in Frickenhausen in Unterallgäu, also known as the 'Schlößle', was built in the 15th century by the Vöhlin family. It is a fortified structure with thick walls, towers and a baroque-style knights' hall. The building has been extended over the centuries and includes well-preserved historical structures from the 15th century.

During renovation, many of the existing windows were restored and interior windows were added. An entire row of windows that were either no longer suitable for restoration or simply did not match the building were replaced with new PaXpur68 insulating glass windows. These merge harmoniously into the overall appearance of the building, not least because of the SCHOTT RESTOVER® light glazing.

## 1st place

2023 Craftsmanship Award
in Monument Preservation

Window with SCHOTT RESTOVER® light
in eucalyptus globulus wood

Implementation: 2022, Schuler, Rechtenstein
Architectural office: Kern Architects, Mindelheim

# RESTOVER® light

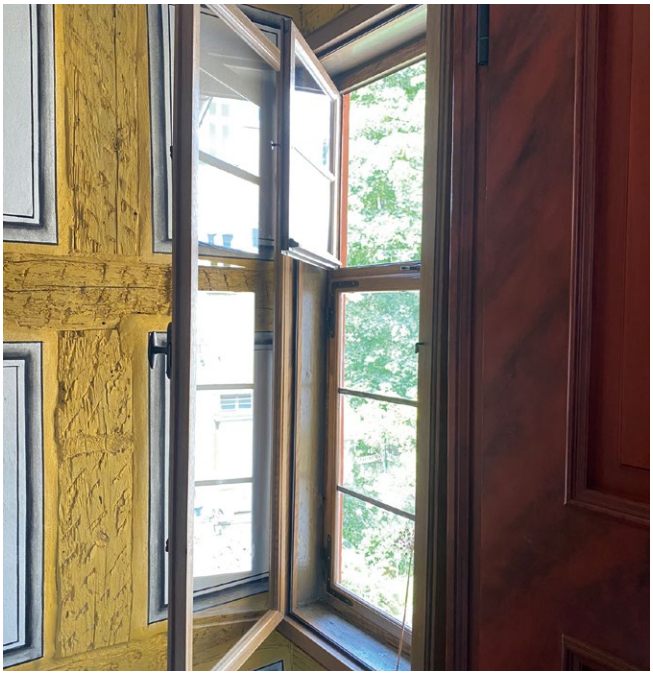
**Bürgerhaus, Schweinfurt**

## 1st place

2022 Building of the Year
Stadtbild Deutschland

The once proud town house, one of Schweinfurt's oldest buildings, was severely damaged at the end of the Second World War. The striking, curved gable was a victim to the war. Post-war, the building only underwent makeshift renovations to provide living space. There were even plans to demolish it. Damage remained visible until 2021 and its prime location made it a local eyesore.

The eventual renovation included the use of PaXpur58 windows with harmonious, filigree face widths and details such as closed parapet joints, authentic SCHOTT RESTOVER® light glass and lead bars.



Combination of SCHOTT RESTOVER® light and
12 mm lead bars in pine wood

Implementation: 2022, Weinhardt, Rotheburg/Tbr
Architectural office: Friedrich Staib
Images: Architekturbüro Friedrich Staib

# RESTOVER® light + TIKANA®

**Rebmannhaus, Sipplingen**
(built in 1662)

# Conservation Award 2020 Baden-Württemberg

## Gold Efficiency Award

Baden-Württemberg Ministry for the Environment, Climate and Energy

The former Rebmannhaus in Sipplingen on Lake Constance is a typical example of an 'Einhaus'. This type of construction features living areas on the upper floor with separate work rooms on the ground floor.

In 2013, a potential buyer was found who wanted to renovate the Rebmannhaus from the ground up in accordance with its listed status. At that time, however, the building was in such a poor condition that there was a risk of collapse with water seeping in through the leaking roof and ceilings. After the sale, emergency stabilisation was initially required. Parts of the building fabric, such as the ceiling panelling, were removed and stored for later restoration.

An extensive, four-year renovation then commenced. The new owners gave careful attention to the new windows. Many of the original single-glazed sash bar windows from the 19th and early-20th century were restored. These were converted into box-type windows with very graceful interior casement windows. The combination of new and historic windows provides optimum thermal and sound insulation. SCHOTT RESTOVER® light and TIKANA® were used in this building. The project was awarded the 2020 Baden-Württemberg Conservation Award.

Window with SCHOTT RESTOVER® light and SCHOTT TIKANA® in eucalyptus globulus wood

Implementation: 2020, Holzbau Schmäh, Meersburg
Site management: Sebastian Schmäh

Combination of SCHOTT TIKANA® and sound insulation glazing SSK3 in eucalyptus globulus wood

# TIKANA®

**Stadtpalais, Krefeld**
(built between 1791 and 1794)

This listed town hall building in Krefeld, originally built between 1791 and 1794 as a town mansion for the manufacturer Conrad von der Leyen, is considered a masterpiece of Rhenish classicism. It was sold to the city of Krefeld in 1860 and still serves as its town hall to this day.

In 2019, the Krefeld town administration decided to extensively renovate its ageing town hall. Refurbishment included work on the roof, the façade and, in particular, the windows. Since the large-format windows play a decisive role in the appearance of the façade, SCHOTT TIKANA® glass, which preserves the desired historical character with an authentic, slightly irregular surface, was used. The special glass quality also has the benefit of being uncoated and fully colour-neutral. The glass has modern and structurally optimised thermal insulation and high-level sound insulation while maintaining the building's historical look.

Implementation: 2020, Kramp & Kramp, Lemgo
Architectural office: Wrede Architects, Düsseldorf

Window work carried out by:

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