

UV Control

Case Study

Royal Garrison Church,
Portsmouth, UK



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Trosifol® UV Extra Protect PVB

Royal Garrison Church

When old meets new. Kuraray interlayer protects historic artifacts from damaging UV radiation.

We normally hear about modern interlayers enabling incredible contemporary feats of architecture and engineering, but special formulations can play an essential role in historic building too.

PORTSMOUTH, UK The Royal Garrison Church in Portsmouth, UK has had played a varied role throughout its 800-year history; as a medieval hospital, a Tudor ammunition store and eventually, in its current guise, as a church for the armed forces since the 1580s.

Bringing it up to date, in a recent refurbishment, modern interlayer technology has been deployed to help protect the historical artifacts and elements of the church's interior from the harmful effects of ultraviolet radiation and the environmental extremes of its coastal location.

This is not the first refurbishment. In the 19th century, a ten-year repair programme was undertaken, which saw a new south porch and vestry, new flooring, and specially designed furnishings and memorial windows. Completed by 1871, the church gained a new lease of life.

The church came into the care of the Office of Works in 1933. In January 1941 the church was severely damaged by incendiary bombs dropped during German raids on Portsmouth. The roof and most of the fixtures and fittings within the nave were lost, as were all the stained-glass windows throughout the building installed in the 1860s. The existing partition in the chancel arch is of reinforced concrete and glass and was introduced in 1967-8, replacing a temporary wall established during wartime. The nave remains roofless but the aisles and the chancel are roofed. The materials used in the chancel screen and the weathering experienced due to the coastal location contributed to its deterioration and English Heritage, which has been responsible for the care of the Royal Garrison Church since 1983, sought a new design, suitable for both the Royal Church and its environment.

Designed by architects Caroe & Partners and fabricated by Bassett and Findley, the new screen wall engineering, fabrication and installation was handed to Daedalus Conservation, a historic building specialist, with an impressive list of high-profile projects across the UK.

"The conservation team at English Heritage explained the importance of some of the very old and very frail military standards contained within the building," explains Gary

Jones, General Manager at Daedalus Conservation, "stressing that UV protection was essential. But these UV capabilities had to be combined with structural performance due to the high winds that come in off The Solent, the body of water surrounding Portsmouth."

Daedalus investigated a number of possibilities to prevent UV ingress – especially at certain more-damaging frequencies – some of which involved tinting. "We tested multiple formulations," Jones explains, "eventually moving away from tinting and on to laminating, but even here we faced a challenge. Interlayers are very good at stopping, with specialist varieties being even more effective, but we were struggling to find a UV-blocking interlayer that would block the wavelengths that damage fabrics and surfaces."

This led Daedalus to get in touch with Kuraray, where the story is picked up by Allan Gibson, Kuraray's High Performance Product Manager in Northern Europe. "My immediate thought was to introduce Gary to our Trosifol® UV Extra Protect PVB. Conventional window glass is impermeable to UV light below 320 nm and PVB films between glass plies filter out further UV light, but Trosifol® UV Extra Protect is a PVB blocks out incidental UV light in its entirety, delivering the protection needed for the highly sensitive standards and artifacts within the church."

The interlayer was deployed in a multi-panel screen wall, fabricated by ESG Group, which separates the roofless nave from the chancel. During the refurbishment Daedalus also incorporated a wheelchair ramp, bringing the building up to modern standards, but remaining highly sympathetic to its impressive history.

Interlayers play a huge role in contemporary building designs, giving architects and engineers the freedom to incorporate structural glazing in a multitude of eye-catching functional and aesthetic applications. But their role in preservation is essential too, where we see modern interlayer technologies coming to the aid of some of the world's most important historical architecture, with Frank Lloyd Wright's Falling Water being another high-profile example (read the case study [here](#)).



Kuraray is the global leader in PVB and ionoplast interlayers for laminated safety glass in the architectural segment.

With the broadest product portfolio Kuraray offers outstanding solutions:

- **Structural:** Trosifol® Extra Stiff PVB and SentryGlas® ionoplast interlayer
- **Acoustic:** Trosifol® SC Monolayer and Multilayer for sound insulation
- **UV Control:** from full UV protection to natural UV transmission
- **UltraClear:** lowest Yellowness Index in industry
- **Decorative & Design:** black & white & colored interlayers

Modern interlayer technology helps protect the church's interior from the harmful effects of UV radiation and the environmental extremes of its coastal location. The multi-panel screen wall separates the roofless nave from the chancel.

Contact



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