



BEAUTIFUL, CONTEMPORARY IMPROVEMENTS USING GLASS SCREENS



So many magnificent churches with a long and illustrious heritage, whilst undoubtedly beautiful, no longer adequately meet the requirements of 21st century visitors and parishioners. Buildings are frequently difficult to heat, draughty, provide minimal facilities such as meeting rooms or toilets and lack acoustic barriers. Church Managers are faced with the challenge of improving the functionality of the church, whilst at the same time preserving the unique qualities, atmosphere and architecture of the building.

Thoughtfully designed structural glass can radically change, improve and modernise a building whilst at the same time ensuring minimal impact to the original architecture. Furthermore, glass will not impede natural light from illuminating the interior, especially important in churches where the light is filtered through beautiful stained glass windows. Peter Hazeldean, MD of Ion Glass, specialists in architectural and structural glass for churches and heritage buildings, comments, 'Many people are surprised at just how versatile glass can be when used

Bishop of Coventry with Ion Glass MD Peter Hazeldean

as a building material. When correctly installed, structural glass is robust, durable and easy to maintain - it can provide an acoustic barrier, help minimise heat loss and be used to create functional spaces within the original building. However, it's important to ensure technical accuracy and understanding at all stages of the design, measurement and installation process in order to achieve the best possible result.'

Very precise measurements are of particular importance when working in churches and historic buildings, especially where the original stonework was hewn by hand. Arches that give a visual appearance of symmetry often prove to be substantially asymmetrical when surveyed using modern equipment. Fitting glass perfectly around stone corbels and carvings requires additional precise detailing. 'We have developed techniques to accurately measure and record every nuance of the stonework to achieve the optimum result,' continued Peter. 'Each panel of glass will be individually manufactured to order and accuracy in specification is critical, especially if the project demands a close fit to the original stonework to avoid heat loss.'

Ion Glass have been involved in numerous glass projects within churches around the UK.

Minimising heat loss at Great Bookham

St Nicolas at Great Bookham, is a delightful village church that dates back to the 11th Century and has seen many changes over the centuries, although it had been many years since the last redevelopment. The congregation had come to accept that any heat generated to alleviate the winter chill was rapidly lost up the ancient West Tower, supplemented by a strong draught from the wooden entrance doors.

Ion Glass were commissioned to install a substantial glass screen across the full width of the base of the church tower, combined with glass inner doors to sit inside the existing wooden entrance to keep out draughts and avoid any further heat loss. Keeping the visual impact of the screen to the absolute minimum involved a technically difficult construction using vertical glass fins to stabilise the multi-panel construction of the arch. The decision was taken to fix the panels of glass to the ancient stonework by using a series of stainless steel clamps in preference to a continuous metal channel. This approach minimised the impact on the ancient fabric of the walls and was less intrusive visually.

Access to the nave is now via a single, large glass door set into the screen. An impressive 1,100mm wide, the door was designed to ensure easy access for



Holy Trinity Meeting rooms.

wheelchair users and for pall-bearers during funeral services. The door is fixed using an over-sized floor spring cut into the original stone floor with bespoke fixings manufactured to take the weight and provide lateral stability while at the same time offering minimal visual impact.

Use of a laser survey and a templating comb ensured that the screen itself fits closely around the shape of every corbel and the resulting small clearances were sealed to minimise heat loss. The screen also reduces the acoustic intrusion of the bells during services. A pair of glass doors were also set just inside the main entrance without disturbing the ancient wooden entrance doors which remain. With the wooden doors open the glass doors now create a light and very welcoming entryway whilst also assisting with reducing heat loss.

Because the external door in the West Tower is now in regular use as the main access to the church, parishioners can enjoy the full glory of the aisle, stained glass windows and altar as they enter the building.

The new installation truly represents and reflects the spirit and atmosphere of the church, enhanced with the addition of a small cross detail on the doors and the screen. The emblem is embroidered on the altar cloth and was replicated in an applied manifestation in two rows across the new glass.

The finished result is truly stunning, meeting all criteria to reduce both heat loss and the acoustic intrusion of the bells to the church interior. Members of the congregation have expressed their delight in the added warmth of the Sunday services.

Creating spaces with glass at Holy Trinity Church, Sloane Square

Whether it's a place where younger children can be cared for during Sunday services to allow their parents to worship without distraction, or a private area for discussion or counselling, the addition of a meeting room in a church is a valuable addition. Holy Trinity Church is just off Sloane Square in the heart of fashionable Chelsea. Its tight urban site meant that the church's requirement for meeting rooms had to be met within the church – there was no opportunity to expand externally. Built in the late 1800s, Holy Trinity has been described as 'the cathedral of the Arts and Crafts Movement' and it contains treasures by some of the leaders of the movement, including magnificent stained glass windows by Edward Burne-Jones.

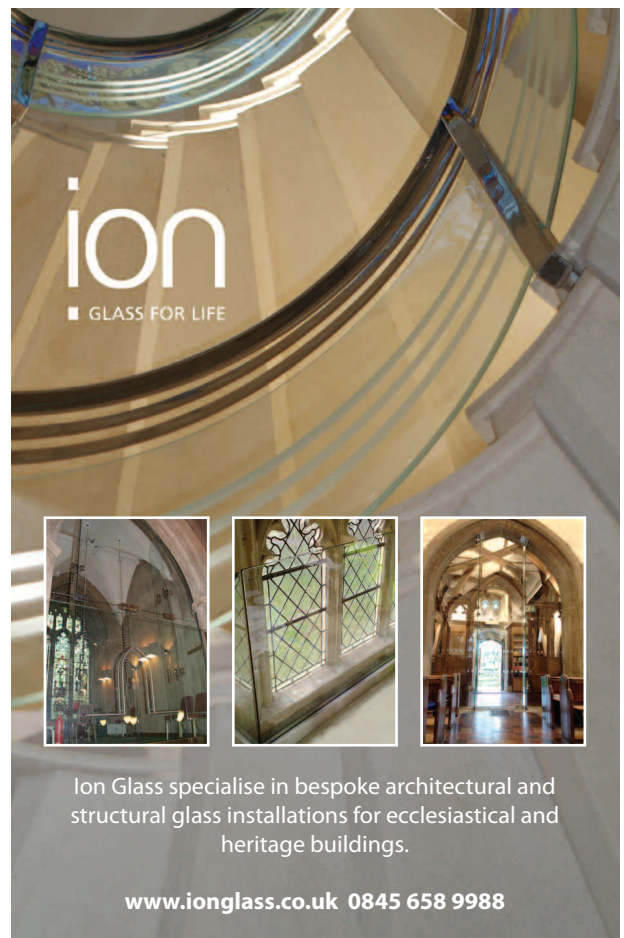
An area under the original gallery on either side of the main entrance to the church had been used for informal meetings and storage but offered no privacy. Plans were drawn up to create two rooms constructed from structural glass which would combine privacy with an unhindered view of the nave.

Ion Glass were commissioned to create the rooms using acoustic glass, significantly improving the sound insulation to provide a quiet and private environment. Due to the height of the glass partitions they needed to be stabilised with structural fins, also manufactured from glass to ensure nothing interfered with the minimal appearance of the final structure.

Moving original metal screens from the rear of the church to the front of the new meeting rooms retained the style of the Arts and Crafts movement and in further acknowledgment of the original design of the church, a matching motif was applied to the new glass screens and doors.

A lowered bell-ringing platform at Dunchurch

St Peter's at Dunchurch dates back to the 13th century and can trace its history back over a thousand years. Until recently the ringers coped with



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St Peter's Church Dunchurch Glass Screen & Balustrade

a bell ringing platform located deafeningly close to the bells themselves, whilst the sound of the peal competed directly with the music of the organ.

However, a legacy from a generous benefactor paved the way for a lowered ringing floor, allowing the bell ringers more space and the opportunity to separate themselves acoustically from both the bells and the organ. The design was required to blend with the architecture of the church; ensure that the beauty of the stained glass window at the end of the nave was preserved and meet the construction requirements of the Church Heritage committee.

The final design created a new ringing chamber inside the tower with the original floor forming the ceiling of the new room - which was to be wholly enclosed by glass screen across the front. Ion Glass installed the glass screen, a balustrade across the front of the platform and a frameless glass panel to protect the original stained glass window.

The door and glass screen across the front of the ringing chamber were produced in several sections: A triple panel of Planar glazing fits across the apex of the arch into a bespoke stainless channel made to the exact shape of the stonework. The channel compensates for a 75mm difference between the two sides of the span, which was not apparent visually

until Ion created an accurate template prior to manufacture.

The doors to the chamber pivot on concealed floor springs, set within the floor space between two fixed side panels and the whole screen is reinforced by bolted structural glass fins that ensure the absolute stability of the installation whether the doors are open or closed. The stylish bespoke handles supplied with the doors were designed to reflect the shape of the arch.

This was a technically demanding project, not least because the logistics of installing the glass and the type of crane that could be used within the church was severely constrained by the fixed wooden pews. The result was impressive, described by the Bishop of Coventry as 'the best glass installation I've seen!' 'We love working in churches and heritage buildings,' said Peter, 'meeting the challenge of producing a stunning contemporary and functional result without damaging or significantly altering the original fabric of the building. With thought, planning and sensitive installation, use of structural glass retains the beauty and atmosphere of each church we work in whilst bringing it firmly into the 21st century.' ■

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