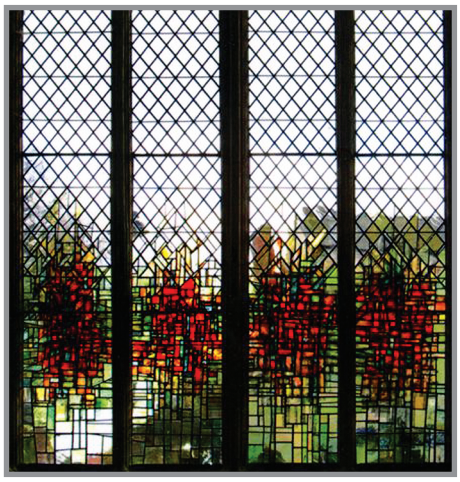
'STAINED GLASS – THE STATE OF THE ART:

THE POLITICS AND ETHICS OF CONSERVATION, RESTORATION AND THE DESIGN OF NEW STAINED GLASS IN HISTORIC BUILDINGS'

The London Conference took place at Glaziers' Hall on 7–8 April, organized by the BSMGP, hosted by The Worshipful Company of Glaziers and with speakers from stained glass and fine artists, the Institute of Conservation, Society for the Protection of Ancient Buildings, Church Building Council, Architects Accredited in Buildings Conservation and National Trust.



DAY ONE Caroline Benyon, Chair of BSMGP, opened the conference, introducing the day's speakers and Chair, Jill Channer. The first talk 'Criticism allowed!' by Steve Clare, BSMGP Conservation Committee Chairman and Director of Holy Well Glass, then delineated the problems he felt faced stained glass artists and conservators today: that small groups of particular-minded people unduly influence decisions, that younger people are 'disallowed' from giving their input, and finally the poor quality of much contemporary design and execution. He argued that whereas fine artists had produced successsful schemes in 'simple' buildings with less potential for discord (e.g. Matisse at Vence, Chagall at Tudeley), in historic buildings where knowledge of scale, colour harmony and the architecture were required modern designs often fell short – this and the 'celebrity cult' of the art world and oversensitivity by artists and patrons had resulted in a lack of constructive, informed criticism. In order to address this, professional studios and the BSMGP needed to help professional designers to take on students as apprentices, to raise their work quality, and liaise more closely with architects and DACs. Stained glass conservators had failed to develop ethics and principles of other conservation disciplines, and he suggested much could be learned from them; e.g. after participating at the Icon conference in the paper and painting groups, he had become concerned about the effect of secondary glazing on the microclimate. He was also of the view that much unnecessary releading was taking place, as lead was a historic part of the window; at King's College and Wells he had decided to intervene minimally – replacing only if absolutely necessary with archival lead of the same type (i.e Hedgeland or Kempe), while deteriorated bar ends had simply been exposed and packed with lime mortar, avoiding the need for removal.

Sam Kelly, senior conservator at Salisbury Cathedral, then described 3 recent projects with different conservation solutions. At Boyton, a very wet environment, his system was similar to Strawberry Hill, except he had devised a flat copper section bent to follow the lead, held with copper ties, plus bars following the border lead. At Wilton, also humid and with problematic bottom venting, he had brought the original glass forward in wooden frames, and at the bottom the glass now goes into a sill space, held with 1/2-circle copper channnel visible only from above. At Salisbury, where previous outside glazing painted with even matt had been criticized as 'a bit flat', he had substituted random matting.

Dan Humphries, Director, Holy Well Glass, listed some variables conservators should consider: practical – cost, stone profile, aperture shape, size, access; architectural integrity – condition/importance of lead, ferramenta, proper position, reversibility; and aesthetic – external view, height and scale. He went on to detail recent cases. In Wells Jesse window, they had tested 3 finishes and settled on a non-ferramentous material to hold the external glazing. Support panels were bent to follow major leads. Various solders were also used in areas with different stresses – lead/tin where these were low, and silver taken to 600–700°C for high-tensile strength in high-stress areas. The brief required removable panels, so they were hinged, and air gaps sealed with flexible compound that was compressed as the panels were screwed down. At St Mary Norbury, they had used brass fixed edge to edge forming T-bars to hold the external system. At Vyne Chapel and St Andrews Trent, their solution used mounting blocks and a clamp, similarly to other speakers. Dan finished by saying that although externally vented systems were little used they could be cost effective and were the simplest to install. This prompted a lengthy discussion on its merits, that of antireflective glass, and of storm glazing, in which it emerged that different studios had had radically divergent experiences and were of different opinions.

In the first afternoon talk Katy Lithgow, Head Conservator of the National Trust, decribed its system of freelance professional conservation advisers and CPIs (Conservation Priority Indicators) to prioritize projects, ranking them by urgency, condition, the significance of the building, glass, environmental and architectural concerns (e.g. guttering) and if the proposed change is beneficial (e.g. does it reveal new features?). It also classes damage as catastrophic or cumulative and the first is always the first priority. It may also undertake regular remedial conservation, such as the glass sibyls at Dunholm Massey, which are treated every 80 years.

The next talk – problems and solutions in isothermal protective glazing – was by Elise Learner who was working with Chapel Studios on the Walpole collection at Strawberry Hill. She thought that the resistance to such glazing was due to 3 factors: cost, the need to modify stonework and the external aesthetics. In this case, the original joinery wouldn't take the extra weight, so she had employed it only for the most vulnerable panels and those on loan that might need removal. She described the system devised, with plain glass behind, sometimes painted where there was bad paint loss, then blocks of unmilled lead as spacers and to hold panels in a cradle in front of the isothermal glass. Loaned panels were soldered at just 3 points so could easily be removed.

Images: (top) Glenn Carter: Yvonne window, St Denis, Sleaford; (above) Holywell Glass team fixing glazing at Wells, and window details at King's College Cambridge.

Next John Burton, architect and former Surveyor of the Fabric at Canterbury Cathedral and Westminster Abbey, described the Surveyor's role as 'friend of the building' and the need to weigh competing factors such as conservation as a work of art / historical artefact against restoration to restore usability, and make judgements about how much data to collect in a project.

Examples of past mistakes included the removal of the ferramenta at Long Melford so they could 'see the windows better' but which changed the whole building structure, and the Bossanyi windows at Canterbury – the wrong tones to blend with the windows flanking and the rose above. His talk moved to the subject of Westminster Abbey and the Alan Younger window. He described how Alan would look at the design in a mirror, as the design was intended as a triptych, with intense colour in the centre fading out towards the sides. He moved on to discuss the commissioning of Hughie O'Donoghue's recent windows that have been installed in place of Alan's designs for the side lights (not yet approved at the time of his death). The artist himself then spoke of the design's progression, intending at first to relate it to the central Younger window but on entering the space deciding instead to relate it to other features, especially the vaulted ceiling and the colourful banners. Due to the amount of interior objects claiming attention, he opted to 'keep it simple', with freely painted lilies for the Virgin and stars, in blue and white to relate to the golden ceiling. The work was executed by Helen Whittaker, who then described her experience. Starting with traditional brushes and mixers, she then realized this didn't work, so changed to mixing the blue pigment with varnish. Flashed blue glass was also used. Leading had been tied to the ferramenta so was structurally sound. A discussion followed that rapidly became vigorous – evidencing how Society events enable healthy exchange of members' opposing views!

After coffee we returned to the theme of new glass as Glenn Carter described his many commissions in which he combines contemporary imagery with the traditional craft idiom. He seeks motifs of relevance to 21st-century viewers and to local history / geography: autumn leaves in a memorial to Canadian airmen to relate 'the fall of men to the fall of leaves', swan's wings to represent resurrection in a church of St Hugh near a wildlife reserve (St Hugh befriended a swan). In the Yvonne window for a musician at St Denis, Sleaford (p. 5), repeated colours in the four lights convey a sense of musical rhythm. Glenn moved on to talk about his inspirations and idea sources. Seeing a stained bowl in the Corning Museum, he became inspired by the story of how stain was introduced in the 14th century; in the John Crust memorial window at Crowland Abbey for a lover of modern glass he used an abstract composition of different tones of stain with simple, strong leading lines to great dramatic effect.

The last speaker, Fernando Pizano, a Spanish conservator working at Lincoln, compared the conservation ethics and working practices in the two countries. He particularly criticized the fact that conservation–restoration is not a regulated profession. The 2004 CVMA–Icon Guidelines are not legally binding – hence there are no legal measures in place to guard against bad practice, such as fines and suspension. The perception of stained glass as a minor decorative art means it is deprived of priority funding, and fashion and personal taste also affect decisions over whether or how to restore an object. In Spain, he said, the lack of a tradition had led to a lack of expertise, and of an organization for people to meet, and general disinterest. He ended by calling for the stained glass commuity to promote proper regulation and education in conservation, and gave a number of practical ideas for raising the profile of stained glass. These included: providing training, inventorying the glass heritage, promoting publications on conservation, promoting meetings between conservation and heritage professionals, creating stained glass conservation institutions, increasing awareness among architects, owners, custodians and managers, and finally 'musicalization' and exhibitions of stained glass.

Eastern State Penitentiary: The Battle of Carnival and Lent, Icarus 1 and 2 (photos: J. Schaechter).

EVENING LECTURE In 'Nothing personal', Judith Schaechter, a US contemporary stained glass artist with work in the collection of the Metropolitan Museum NY, V&A, Hermitage in Russia, Philadelphia Museum of Art, Corning Museum of Glass, the Renwick Gallery of the Smithsonian Institution and numerous other public and private collections, gave an amusing, often exhilarating, tour through her artistic development in glass and her influences. She began in early childhood in a half Polish-Ukraine, half-Episcopelian family, one parent a scientist, one a social worker, and this was the pattern of her life: half-artist, half-craftsman – with which she was entirely happy!

She was always interested in death, royalty, superheroes, and beauty, and they appeared as motifs in her panels – from panels of dead cats and a pile of skulls in a wasteland 'to assuage my fears' of death, to falling, splayed and naked female figures in cosmic or surreal, dreamlike landscapes. Another fascination was with radial designs; a number of panels such as 'Seeing is believing' (2008) in the Museum of Modern Art are based on rose windows, rotifer animals, tat lace, and spirograph and kaleidoscope patterns. On entering art college envisioning herself as an oil painter, she found herself intimidated by the long history of painting, which had no respect for stained glass. She describes herself as a 'militant ornamentalist', seeing it as a basic natural urge to ornament our living spaces, and also likes the making process, as 'whenever you aren't, you lack the opportunity to allow the process of creation itself to inform the result'. By the time she left art school, she had been indoctrinated by the idea that she should show in galleries and the idea of obtaining commissions terrified her, hence many panels were made to exhibit in lightboxes.

Turning to the development of her techniques, she had begun with a lot of 3D work, using copper foiling, or leading 'only where I want it', and multiple layers of different-coloured flashed glass precisely lined up as in printmaking. The flashed glass is engraved, at first using photo-generated stencils, but as these proved expensive she switched to a flexible-shaft engraver – and often also sandblasted the glass. When designing, she doodles and then uses Photoshop to 'mix and match' images, and 3D-modelling software. In later panels she had lost interest in getting layers of flash to line up, or using sandblasting for the details, and now uses a file to get the soft colour gradations. In works such as 'Birth of Eve' she has used vitreous paint, and also slaps on silver stain because she loves engraving it.

She believes that one of the primary functions of artwork, as Abbé Suger said, is 'to help us feel our feelings deeper'. This is particularly apt in her recent installations at the Eastern State Penitentiary (above). This derelict building, saved from being turned into a shopping mall, had been founded on Quaker principles, with cells designed as solitary places where a person 'can get in touch with God' – hence you have to look up to the narrow, slit-like openings. Judith had promised the administrators 'colourful shadows'. Her theme was the 7 virtues and 7 deadly sins, and the idea of 'a devil on one shoulder and an angel on the other'. She googled the Web for images of mythological prisoners (e.g. Icarus) and biblical characters in trouble. In 3 windows, there is a 'wailing chorus' , as in Greek tragedy, behind – representing those left behind when people are imprisoned.

The talk over, questions from the delegates then probed the intricacies of Judith's technique. We picked up several useful tips – for instance, when working with glass layers she used a wide copper foil to bring them together all at once, and then soldered using a paste flux so it didn't seep between the layers. My favourite advice, though, was 'don't plan your Photoshop layers ahead because if you think about it your head will explode!'

DAY TWO The second day was chaired by Peter Cormack, and began with a session delineating the Glaziers' Foundation – the charitable arm of the Worshipful Company of Glaziers. Master John Dallimore first gave us its history starting from the Glaziers' Guild, which had fought against the attempted monopoly on the supply of glass by several monarchs. Steve Graham the current Chairman explained its structure and the 2011 set-up, which drew into one body several small charities including the Glaziers' Trust, as well as its activities in supporting the craft by giving financial aid to publications (online *Vidimus* and the BSMGP *Journal*), the SGM, commissions such as the recent Southwark window, and towards saving important historical windows such as the Strachan in Frogmore Lane. Steve Clare, speaking next, added that the Foundation also funded conservation projects, annual awards to for students, appentices and CPD, and gave grants to those in need 'from students to those in their dotage'. It had a unique independence and broad range of skills that it was important to maintain. Peter Cormack gave a brief history of its Stained Glass Repository, the role of which was to rescue significant and ultimately relocate it: 'conservation by recycling', but also the issues created: whether old glass was being used in place of new commissioning. Finally Andy Lane described the Craft and Competitions Committee's work supporting students, new professionals and studios through competitions and awards.

The topic returned to conservation practices with Frédéric Pivet, conservator at La Sainte-Chapelle, Paris, who looked at the various approaches favoured in France and Germany. Whereas French practice had from the early days at 14C Meaux cathedral adopted chemical methods to remove corrosion products, in the 80s the German physical method of removal with brushes had come to the fore. However, as both methods had advantages and problems (chemicals might lift unstable paint, physical methods might cause scratching), he argued a more pragmatic rather than a rigid approach, of using different techniques on a case-by-case basis. If methods were complementary, why then have a conflict? The speaker went on to show details of the Sainte Chapelle restoration, its particular problems (mechanically fragile paint with no glass adherence, iridescence, particulate dust), and their research to find the best conservationmethods (UV light analysis, comparison of EDTA with physical methods, etc.).

After lengthy debate on the technical merits or otherwise of various techniques, the focus returned to the commissioning of new glass with the next speakers: Dr Pedro Gaspar, Senior Conservation Officer of the CBC, and colleagues. They clarified the position of churches with regards planning permission, as well as the CBC's legal role in granting permission for new windows, and stressed that, although the Parish Council as commissioner might be staffed by volunteers with no specific stained glass expertise, the CBC when deciding whether to say yes, no, or yes but with conditions called on about 60 available experts to inform their decisions. He then gave specific examples for local churches. With cathedrals, though, the process differed as the Dean and Chapter are responsible and are the commissioning body, and it is the FAC (Fabric Advisory Committee) that gives permission. Factors taken into consideration include effects of sunlight and rain, impact of the transmitted light on surfaces, whether the artist understands the structural role of leading, visibility from a distance, long-term maintenance, and the church as a working building.

After lunch Tobit Curteis ACR, a leading consultant on environmental control in historic buildings, detailed the factors conservators needed to consider at the start of a project: not just the area in front of and behind the glass but the entire 'building envelope' – asking 'How does it work?', and 'How does it affect the glass?' A church with small windows can have a very different envelope from one such as Norbury, which is like a greenhouse. Factors include thermal buffering (good in buildings with small windows and thick walls), hygrothermal buffing (water vapour), external weather (whether there is unstable air outside), and artificial heating – which, counterintuitively, may actually increase the absolute humidity, and hence condensation problems, as evidenced by his studies at Kelmscott. The effects of ventilation can also be surprising: measurements at Stoke Orchard revealed that, in spring, when the church windows were opened in sunny weather, the humidity rose as SW air entered a cold building. The heating system is critical: convection heating fills the entire envelope with warm air, but radiant heaters can (as warm air rises) really heat up windows high in a building whilst leaving people at floor level cold! Pollution history is also a factor as although sulphur emissions have been falling since their 1950s peak the products remain in the building environment, and direct rain, chemical action and wind loading can all cause dissolution of the soluble fraction, leading to glass corrosion and delamination. The internal microclimate includes condensation – causing wet–dry cycles of soluble salts off the lead. These cycles are driven by heating causing evaporation: King's College has underfloor heating, causing slower air movement with less damage, whereas St George's Windsor has 2 massive convector fans below the West window causing rapid wetting and drying. Algal / microbiological growth is also part of the microclimate. Investigation should take note of the type and pattern of glass, also whether windows have been moved and have sustained damage from elsewhere. Macroclimatic factors may be important - for instance, near the coast there may be unusual wind loading. In considering protective glazing, although most has some effect in increasing thermal buffering, so reducing condensation, the degree is affected by design: whether external or internal, and the position of vents, which impacts on air flow, as does the window geometry. The Dean's Eye, Lincoln, required a specially designed 'mini' system to accommodate the odd shapes of glass.

Architect Oliver Caroe, Surveyor of the Fabric at St Paul's Cathedral, returned to the subject of new glass and the balance between creativity and conservation. He argued they were not an unresolvable as argued by some, but entirely compatible, even co-dependent and inseparable. The architect's role is to consider issues of space, weight, etc., which an artist may not, of visual continuity within the whole building, and to use the power of observation to generate creative yet sympathetic solutions. At St Pauls recently a new commission was proposed in the crypt chapel; after consideration of the whole glazing scheme, he suggested moving an existing window to a new place in order to 'free up' a location for the proposed commission. Sometimes a new commission can transform a place and its identity, and an artist can transform a brief. In this the architect's responsibility can be to give a person who is fired with ideas some latitude, and yet set boundaries; he likened the convoluted commissioning process to a whale, in which the architect is the nose providing the initial spark – but also the final flick of the tail! For example, Ripon Cathedral wished to 'open up' the 3 West doors and he commissioned 3 bronze doors with clear glass engraved by Sally Scott. He was then concerned about the amount of light entering, however, and his solution was to edge-light the space.

In the final talk Rachel Phillips, lecturer in Architectural Glass at Swansea University, discussed the future of stained glass design eduction. From its setup by Howard Martin of Celtic Studios, its courses were based on the principle of 'learning through making' and a strongly figurative approach; as stained glass often involves 'tacit knowledge', Swansea still focuses on skills learnt. Glass painting is taught in such a way that students can go into either new work or conservation. In the 60s new techniques such as sandblasting, screenprinting, fusing, etc., were added alongside the traditional methods, and recently also waterjet cutting, PV cells and film – all these as tools available for students to explore, but they are also encouraged to specialize in year 2 so as to develop in-depth knowledge. The course also focuses on design and, as stained glass is an applied art, how to consider a window's context through making models, visits to sites and fabricators, and live projects. To familiarize students with the real world of professional practice, students write a project proposal, detail their design development and finish with a simulated design presentation and a sample panel. Finally, the Dean of Art, Ian Walsh, updated delegates with changes in the structure of stained glass teaching at the college, and announced the recent move of the glass dept back into Art & Design, and a brand-new building! *Chris Wyard*