The conservation of Horace Walpole's stained glass collection in the fantasy villa he built at Strawberry Hill, Twickenham in the mid 18th century is part of the complete renovation of his 'little Gothic castle' due to reopen to visitors in spring 2010. The conservation work is presently being undertaken by Chapel Studio, Herts with Paul San Casciani Stained Glass Consultants, Oxford, who are involved in detailed discussion meetings regarding all processes with Inskip + Jenkins Architects (in charge of the complete conservation programme of the building and its fabric). They are accompanied by Dr Michael Peover Hon FMGP and former BMGP Librarian, representing Strawberry Hill Trust, who has for many years studied and written about the history of the collection and produced a CD-ROM Room History for the architects.

Chapel Studio's collaboration with Paul began in 1998 when he, a member of Oxford Conservators' Group, was asked to assess the condition of the stained glass in Duke Humphrey's Library, part of the Bodleian Library, University of Oxford, and invited Chapel Studio Conservation Team to carry out the work – a project that won a Royal Institute of Chartered Surveyors Award in 2000. Since then they have worked together on various major projects, going on site with Director Robert Holloway for analyses, Paul taking all the documentary photos and his wife Paula making comprehensive site notes and writing up all their findings. Strawberry Hill demanded an exhaustive three-volume Condition Report, begun in summer 2006 and taking 7 months to complete. In autumn 2008 their consequent tender was selected to carry out this demanding year-long project.

In the 1740s for over 30 years Walpole, dilettante son of Britain's first Prime Minister and author of the first horror novel, The Castle of Otranto, assembled the first collection of stained glass in Britain – English medieval and Tudor pieces, 16th- and 17th-century roundels from the Low Countries, commissions from William Price the Younger and William Peckitt, England's two chief exponents of his day, all to give added atmosphere to the extraordinary interiors packed with treasures and curios of this rural retreat from his town house, where he entertained many of the major figures of the age, leaving us a vivid picture of 18th-century high life in his multitudinous extant letters.

At present the three Accredited Conservator-Restorers of the Institute of Conservation (ICON): Robert Holloway (glazing and structural issues), Elise Learner (international conservation procedures) and Paul San Casciani (historical glass painting techniques) are leading the studio's experienced Conservation Team – Rachel Helleur, Laura Pes and Laura Hobson – in the task of dismantling, cleaning and initiating the conservation processes on more than 240 panels, subject to the guidelines of ICON and the Corpus Vitrearum Medii Aevi. Inexpert restoration over 50 years ago after war damage, when many cracked panels were clumsily sandwiched between two layers of thin glass in an attempt to prevent them, resulted in their developing conditions deleterious to the painted surface because they were not airtight. Moreover, they were in many cases carelessly glued, leaving exudation and smears, using adhesives that have now decayed, and any gaps filled in with an unsightly black putty-like substance. Current best practice, the mending of cracks with approved resins and making of kiln-formed backing plates to support broken panels, will take many hours of skilled and patient treatment, but a conservator has no greater delight than seeing a work in a parlous state given a fresh lease of life. Early next year we will produce a full article illustrated with a representative display of 'before' and 'after' photos showing dramatically clarified examples; but even at this early stage of limited treatment, the true quality of some panels can be appreciated.

The demands of this project are complex because after conservation the panels are being glazed into layouts as faithful as possible to Walpole's original schemes according to documentary evidence researched by Dr Peover in collaboration with the Room History specialist at the architects' practice, bearing in mind that a considerable number were sold in 1842 and set in other buildings here and in the USA.

The Library window, July 2006, showing the 1950s layout of Miss Joan Howson, introducing out-of-scale borders in blue and orange around the three lower antique panels and a painted and stained background pattern of roses and foliage which Dr Peover points out has no historical foundation. Moreover, the quality of glass painting is coarse and inexperienced, clashing with the refined, small-scale style of the antique originals from various centuries. After lengthy consultation with the architects and English Heritage, it was decided to discard the 20th-century backgrounds. ©Paul San Casciani

17th-century enamelled panel of Charles I: (left) detail from the Library window July 2006 – heavily mended, the many cracks are overpainted with black cold colour, as was customary in the 1950s; (right) panel on the bench: plating discarded, glue and all extraneous material removed, cleaned and awaiting next steps in conservation treatment © Paul San Casciani

The panels in their diversity provide not only a rich array of subject matter both religious and secular whose sources are continuing to be researched by Dr Peover, but also an invaluable compendium of glass-painting techniques about which Paul and Paula San Casciani hope to write an attractive booklet for the general public, and a volume of comprehensive analysis for students and specialists.

Generous grants from the Heritage Lottery Fund, English Heritage, the World Monuments Fund, the Getty Foundation and other important bodies are funding the dedicated teams engaged in all aspects of conservation of this extraordinary building, its gardens onto the Thames and its picturesque interiors; for further details see www.friendsofstrawberryhill.org.uk. The restored Strawberry Hill Villa and grounds is due to open in Spring 2010 to coincide with a comprehensive exhibition about Horace Walpole at the Victoria and Albert Museum, London curated by Michael Snodin, Senior Research Fellow, V & A, Chairman of the Trustees of Strawberry Hill. This exhibition will open at the University of Yale this summer. Paula San Casciani, February 2009