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Sir Joshua Reynolds's sketchbook: conservation of a rare
sketchbook by Sir Joshua Reynolds illustrating his period in Italy
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Heather Norville-Day

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Sir Joshua Reynolds's sketchbook: conservation of a rare sketchbook by Sir Joshua Reynolds illustrating his period in Italy during 1749–1752

Abstract

Plymouth's connection with Sir Joshua Reynolds, the first president of the Royal Academy of Arts, is unique. Reynolds was born and lived his early life in Plymouth, and importantly, he set sail from Plymouth to join the Grand Tour. During his time there he made sketches of Old Masters, filling several notebooks and ten sketchbooks, and these show Reynolds's personal interests and insights into his life during the Grand Tour. The sketchbooks were posthumously auctioned in 1821; one of these was recently auctioned at Sotheby's, which Plymouth City Museum and Art Gallery acquired with grant-funded support. The sketchbook in question contains drawings by Reynolds in pencil, pen and ink, and black chalk. It is bound in a limp vellum binding with a fore-edge flap. This paper presents the challenges and the final outcome of the sketchbook treatment. It was necessary to ensure minimum intervention and to retain all evidence within the binding while working in situ. Innovative conservation methods were used to treat and rectify pre-existing damage. Culmination of the project saw the sketchbook included as part of the 2016 exhibition *The Influence of Italy* held in Plymouth Museums Galleries Archives. The current project underway is the digital photography of the sketchbook in order allow wider access to the images.

Keywords

Sir Joshua Reynolds; sketchbook; vellum binding; chalk drawings; Old Master studies; conservation

The aim of this paper is to present the conservation challenges and the final outcome to the reinstatement of a rare eighteenth-century sketchbook by Sir Joshua Reynolds. The conservation project to treat this rare sketchbook was challenging: to ensure minimum intervention and encompass the curatorial and historic need to retain all evidence within the binding, with clear instruction to not unbind the original sketchbook. Innovative conservation methods were required to treat and rectify pre-existing damage that occurred from misuse while in private hands. These included damage from the deliberate removal of pages, the use of inappropriate materials to secure elements in the binding, tears and losses.

Culmination of the project saw the sketchbook included as one of the main exhibits in the 2016 exhibition *The Influence of Italy* presented by [Plymouth Museums Galleries Archives](#). The current project underway is the digital photography of the sketchbook pages in order to allow a wider public access to the images.

Reynolds: historical background

Plymouth's connection with Reynolds is unique. The artist was born in 1723 and lived his early life in its suburb of Plympton, attending Plympton Grammar School where his father, Reverend Samuel Reynolds, was headmaster. In 1740, Joshua Reynolds was apprenticed for four years to the fashionable London portraitist Thomas Hudson before returning to his hometown as a portrait painter in Plymouth Dock, sharing a house with his sisters.

In 1749, Reynolds was introduced to Augustus Keppel, then Commodore of the Mediterranean, by family friend Lord Edgcumbe. When Keppel departed Plymouth aboard HMS *Centurion*, Reynolds sailed with him to undertake a Grand Tour of European and Italian cities, sponsored by Lord Edgcumbe. The Grand Tour was a social requirement for aristocratic young men to visit the major European cities to study the classics and contemporary art. According to letters to his sisters and Lord Edgcumbe, Reynolds arrived in Italy in 1750. Keppel became a friend and accompanied Reynolds ashore when possible. During his time there he made sketches of works by the Italian and Dutch masters Titian, Raphael and Rembrandt, which filled several notebooks and ten sketchbooks. Arriving back in London in 1752, he remained there until his death in 1792.

Ten sketchbooks, part of the estate of the Marchioness of Thomond (Reynolds's niece), were posthumously auctioned in 1821; nine are currently held in public collections, two in private ownership. Recently one privately owned sketchbook was submitted to auction at Sotheby's, London. It was successfully acquired by Plymouth City Museum and Art Gallery¹ with support from the Heritage Lottery Fund,² Arts Council England/V&A Purchase Grant Fund, the Art Fund, and the Friends of the Plymouth Museum.

¹ In 2016 the Plymouth City Museum and Art Gallery building closed for redevelopment; in 2020 the building will reopen as [The Box](#), a new 'cultural destination' that brings Plymouth's collections, galleries and archives into one space, in 2020.

² Now the National Lottery Heritage Fund.

Sir Joshua Reynolds was one of the earliest members of the Royal Society of Arts, helped found the Society of Artists of Great Britain, and in 1768 became the first president of the Royal Academy of Arts in London, a position he was to hold until his death. In 1769, he was knighted by King George III, only the second artist to be so honoured.

Plymouth sketchbook

It is believed the sketches were made in situ. Many of the illustrations include notes on the use of colour and tone; the sketches range from simple outlines to developed pictures with analysis of chiaroscuro. His illustrations clearly summarised the essential elements of his subjects and analysed the techniques of the masters.

Interestingly Reynolds wrote some years later:

When I observed an extra ordinary effect of light and shade in any picture, I took a leaf of my pocket-book and darkened every part of it in the same graduation of light and shade as the picture, leaving the white paper untouched to represent the light. A few trials of this kind will be sufficient to give the method of their conduct in the management of their lights.

The sketches contained within the binding are a visual record of Reynolds's artistic eye and personal interests. It is a rare insight into the artist's work and his life which were to become so public in future years. Reynolds may not have considered the historic importance of any of his sketchbooks and that they would eventually be displayed, digitised, or heavily consulted. His use was as a tool for analysis or aide-memoire of other artists' techniques.

The key aim of this collaborative project between curator and conservator was to retain the essence of the sketchbook and to preserve the binding and sketches, with focus on minimal intervention to stabilise and repair the historic damage that occurred from misuse while in private hands. This included damage from the deliberate removal of pages and the use of inappropriate tapes and adhesives to secure elements in the binding, such as tears and losses. Poor storage and handling compounded the deterioration of the sketchbook.

The conservation project to conserve this rare sketchbook was challenging, to ensure minimum intervention and encompass the curatorial and historic need to retain all evidence within the binding with clear instruction to not disbind the original binding.

Sketchbook: construction

The 'Plymouth' sketchbook, a typical Italian vellum binding with a fore-edge flap, records Reynolds's tour of Rome, Venice, Parma and Florence in 1751–1752, containing the artist's delicate drawings in pencil, pen and ink, and black chalk.

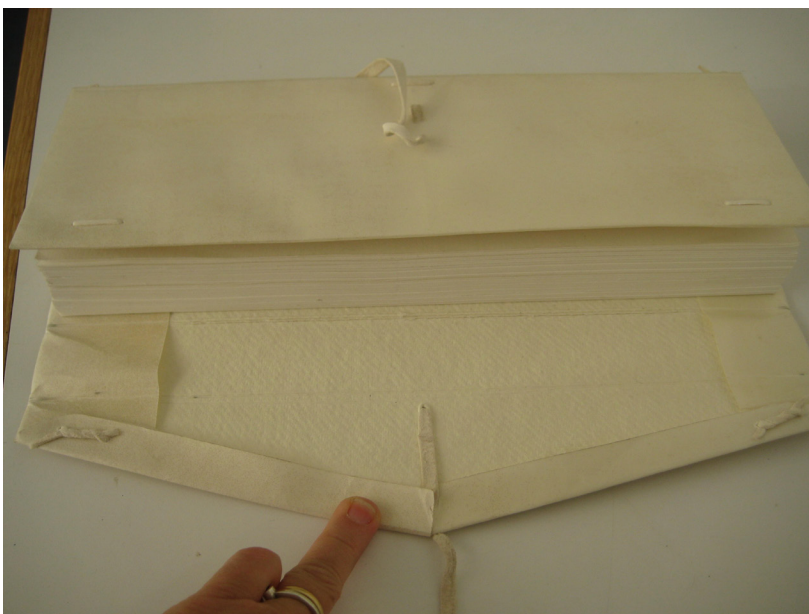


Fig. 1 Facsimile of a circa 1800 Benedictine binding; internal structure shows cartonnage and envelope fore-edge flap. Thaw Conservation Center, Morgan Library and Museum, New York, USA.

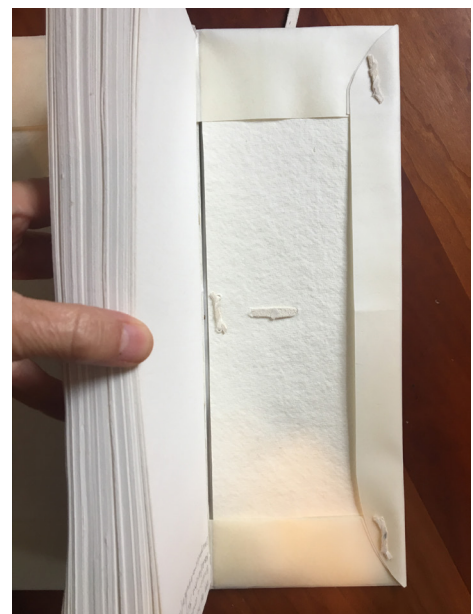


Fig. 2 The same binding from Figure 1; internal structure showing a detail of the vertical tacket used to fix the cartonnage to the parchment.

In order to understand the traditional construction of the binding, visits to strategic sites were arranged to consult with other professionals. According to Professor Giovanna Perini Folesani of the University of Urbino, Italy, who was working in collaboration with Plymouth Museum, the Morgan Library in New York held a Reynolds sketchbook which was the closest in comparison in content to the Plymouth sketchbook. This was correct, although the binding itself was vellum over stiff boards rather than a limp structure.

A visit to [the Morgan Library](#) in New York was arranged to view their Reynolds sketchbook and to visit the conservation studio to discuss the conservation treatment programme. The visit was kindly arranged by Margaret Holben Ellis, Professor of Paper Conservation at New York University's Institute of Fine Arts, and Maria Fredericks, the Drue Heinze Book Conservator and Acting Director of the Thaw Conservation Center at the Morgan Library and Museum. We discussed the parameters of appropriate conservation treatment and the method of binding. Fredericks helpfully illustrated the construction of the binding using a facsimile she made of an Italian account book belonging to a Benedictine convent in Montefiascone, Italy dating from about 1800, which was very similar in construction.

A second visit was arranged to visit Grottaferrata, Rome, site of the [Abbey of Santa Maria di Grottaferrata](#), founded by St Nilus, and consecrated in 1024 by the Pope John XIX. This houses the historic library of the Byzantine abbey where more than a thousand ancient manuscripts and about 50,000 priceless historic volumes are preserved, some dating back to the years of the foundation of the Abbey. In addition to the Library is the paper conservation laboratory and bindery founded in 1931. This is widely known as the 'Ancient Book Laboratory,' and is responsible for the important work on the restoration of the famous *Codex Atlanticus* or 'Atlantic Codex' by Leonardo da Vinci. The work of the laboratory was also crucial in the restoration of the manuscripts damaged by the Florence Flood of 1966. The institution mandates the use of traditional materials and binding techniques for these priceless artefacts.

This visit was made at the invitation of Father Pietro Costanza, director of the laboratory at the Biblioteca statale del monumento nazionale di Grottaferrata in Rome. The bindery restorers and helpers, Alessandra Belfiori, Massimo Breazzano, Silvia Casini and Claudio Fastelli, acted as guides and translators, making it possible to discuss the collection of historic limp vellum bindings that are held within the main library. Claudio Fastelli, conservation binder, demonstrated the construction of a new limp vellum cover, importantly showing the method of securing of the text to the binding with the attachment of the tackets and endband cores.



Fig. 3 The external structure of the new vellum binding showing the folds tackets at turn-ins. Grottaferrata conservation studio & bindery.



Fig. 4 The internal structure of the new vellum binding from Fig. 3.

³ Bower's findings are published in the *British Association of Paper Historians Quarterly* 97, 2016.

Identification of the drawing paper

Identification of the paper used for the Plymouth binding provided verification of the provenance of the sheets and the dating of the artworks. Photographs were taken of the watermarks contained within the pages of the sketchbook and assessed by Peter Bower, paper historian.³

The paper used for the binding was identified as a white laid writing paper with a *fleur-de-lys* in a single circle with a CB monogram. The paper was found to be made in Foligno, Umbria. The fibre furnish was a linen rag with some hemp, possibly derived from sail cloth. This was a typical Italian paper of the mid-eighteenth century and identical to the other sketchbooks from Reynolds's time in Italy that are held in Sir John Soane's Museum and the British Museum. This knowledge was essential to allow selection of a sympathetic repair paper for the sketchbook to secure the numerous areas of damage and loss.

Treatment programme

Assessment of the current condition of the Plymouth binding was carried out initially with a diagrammatic representation of the six folios to record the sequence and missing leaves within the binding. The areas of damage were digitally recorded for each leaf, both recto and verso, including details of the outer binding.

The pages were numbered by the artist in the top right corner in ink, indicating the original order of the leaves. The subsequent removal of leaves from the folio not only altered the systematic order of the binding, but also damaged the edges of the paper and loosened the conjugate leaves. A detailed record was made of the various attempts at securing these leaves, which included the use of a variety of materials, including paper patches, butterfly tape, pressure sensitive tapes and a range of adhesives.

A record was also made of the results of poor handling and general mistreatment of the binding over time. This had caused severe damage to the vellum, resulting in severely worn and split regions, particularly at the points of frequent use, typically the folds and spine area. The initial pages of the sketchbook were also severely damaged, with tears and missing areas secured with tapes and adhesive, as well as ingrained dirt, dust and general studio marks.

Following the condition assessment, it was important to complete tests on the media, paper and various adhesives and glues to provide an understanding of the solubility and sensitivity of the materials used in the binding.

Conservation treatment

It was important to protect the leaves in the sketchbook during the conservation testing and treatment with a material that was robust enough to stand up to handling, moisture and solvent treatments. Sheets of silicone release paper were cut to the size of the textblock; slots were then cut in the spine edge of the sheets to create tabs that could be slotted under the sewing thread to hold them in place.

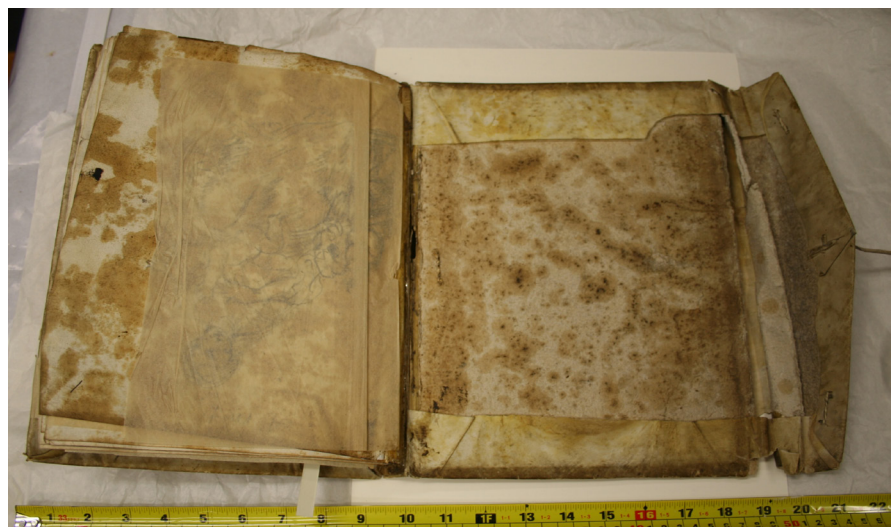


Fig. 5 Internal view of the Plymouth sketchbook showing the damage caused by misuse, and the application of inappropriate tapes and adhesives to secure areas of damage.

The old facing tissues used to protect the surface of the chalk drawings throughout the binding were found to be highly acidic and foxed. It was agreed with the curators these should be removed as detrimental to the preservation of the binding. Many of these tissues were held in position with an animal glue, and more recently with pressure sensitive tape repairs.

1. Treatment and removal of tapes with water-based adhesive

The loose leaves were similarly secured with pressure-sensitive tape, as well as a variety of papers and tapes with water-based adhesive. The butterfly tape and recently-applied conservation paper tape, coated with a water-based adhesive, were safely removed with cotton wool swabs moistened with deionised water.

The removal of the adhesive layers resulted in loosening the leaves from those folia which had their conjugate leaves removed. These leaves were fully removed and could be treated separately using a high-pressure vacuum point to remove both the adhesive residue and a degree of the discolouration using deionised water. Removal of the old linen tape required more encouragement, using a carboxy methylcellulose poultice followed by gentle removal with a scalpel and moistened cotton swab. As a result of the removal of the tapes, paper patches and various adhesives, more damage to the leaves of the sketchbook was discovered.

2. Treatment and removal of pressure-sensitive tapes

The use of pressure-sensitive tape on both the paper and vellum was researched, and tests were carried out to select the most appropriate solvent solution and method of removal to avoid any damage to the artwork. Pressure-sensitive tapes were first developed in 1845 by Dr Day, who applied natural rubber to strips of cloth to make a surgical tape for use in his practice. The automotive industry in the 1920s developed a masking tape to produce clean edges to two-toned paint finishes. Sellotape was the first brand available in the UK, from 1937. The adhesive layer of pressure-sensitive tapes was usually composed of synthetic or natural rubber. Modern formulations can include acrylic polymers together with softeners, antioxidants, plasticizers, curing agents to name a few. The carriers range from paper to foil.

Aging and removal of these tapes is difficult as the adhesive can vary in formulation in excess of thousands of variants. Newly applied sellotape is relatively straightforward to remove mechanically with heat or chemically with solvent. Oxidised adhesive poses more of a problem as the rubber polymer degrades, becoming oily and discoloured. At this stage the adhesive is able to penetrate paper and can render it translucent. Further oxidation and cross-linking of the adhesive results in hardening and further discolouration. At this stage it is very difficult or impossible to remove.

The sellotape used in the sketchbooks was still tacky, though showing signs of deterioration: it was discoloured, seeping into the paper and causing deep brown stains. The adhesive was visually assessed to determine viscosity, characteristics and age. Further review of the current literature and spot testing suggested a rubber-based adhesive was used and therefore a nonpolar material. Hexane was found to effectively soften the adhesive enough to enable the tape carrier to be lifted, therefore exposing the adhesive layer. Toluene was tested as a more effective solvent and applied to small areas to assess the effectiveness, followed by acetone and finally with Leksol (n-propyl bromide), a substitute for 1-1-1 trichloroethylene (a less desirable chlorinated solvent that might have been used here in the past).

Tests showed it was possible to remove the carrier with a solvent mixture of the above solutions. This was formulated and applied with a magnesium silicate poultice, over a protective layer of fine Terylene (polyester fabric) to prevent residues gathering in the paper fibres. This softened the adhesive enough to allow careful lifting of the bulk of the adhesive. Swabbing the surface of the paper with the solvent mixture directly removed the

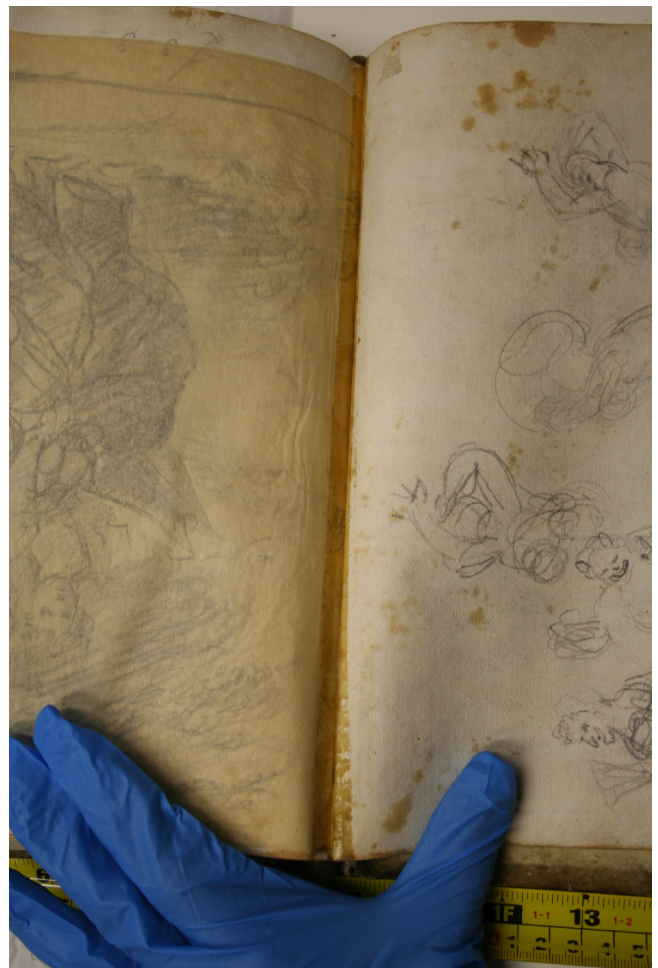


Fig. 6 Internal view of the sketchbook showing areas of discoloured tape adhesive.



Fig. 7 Comparison of the repair paper with the original drawing paper.

remaining adhesive. Personal choice dictated the method, although other poultices using Klucel-G (hydroxypropyl cellulose), methyl cellulose, xanthan gel and Velvicol Plus (copolymer of cyclosiloxanes and polyethylene glycol) would work well with nonpolar solvents generally. These were tested and rejected due to concerns with surface residues.

3. Repair

Having confirmation of the date and provenance of the original sketch paper, a Western repair paper with similar chain and laid lines and fibre furnish was selected. The repair paper was cut and chamfered to echo the original sheet. This was attached on the verso, supported with 12 gsm tengujo tissue (100% kozo), which was also used to support the weakened folds using a dry handmade jin shofu wheat starch paste. The small tears and splits along the edges of the pages damaged by page turning were supported with Berlin tissue, a fine Japanese-style paper with Nasu-kozo (Ibaragi) and mitsumata (Suruga) fibres, and adhered with wheat starch paste. Damage to the image from handling and abrasion was left in place as part of the history of the sketchbook. Gentle pressing after treatment, using sheets of fine-surfaced Japanese paper between blotting paper lightly pressed under glass plates, prevented undulations forming in the paper.

4. Vellum binding repair

Repair to the vellum binding was intricate. The boards, located at the spine, back and front covers were weak from constant handling, torn and fibrillated at the edges. The vellum cover was damaged mainly at the folds and flexible joints, principally the spine and fore edge of the vellum cover which had weakened and split. The damage to the binding was useful as this allowed the boards to be manipulated to release sections which allowed access to the inner surface of the vellum cover.

The delicate process of repairing the vellum binding was achieved by applying fine layers of 12 gsm tengujo tissue (100% kozo) with jin shofu wheat starch paste. These were carefully ap-

plied to the inner surface of the vellum along the folds and missing areas. Templates were cut using conservation mount board and positioned inside the binding to apply pressure to the Japanese paper repairs until fully dry and stable.

The paper boards supporting the vellum were also manipulated and freed from the binding where possible. The areas where the boards were severely damaged were repaired by cutting through the depth of the board and inserting wafers of laminated tengujo paper coated with wheat starch paste. The weakened and fibrillated areas of board were consolidated with Bermocoll E 23 in industrial methylated spirits. This consolidated the board fibres with low risk of staining the object. Once adhered in position and consolidated these areas were gently pressed between blotting paper and glass weights.

The external damage and losses to the vellum binding were filled with a similar weight and texture of parchment. These were shaped and pared down to the required dimensions and secured with wheat starch paste. Smaller areas were filled and supported with Japanese paper, also held in place with wheat starch paste. The new parchment and Japanese paper fills, once secured and fully dried, were toned with watercolour to blend with the original vellum of the binding.

The studio stains were retained as evidence of the artist's work and essential to the historical evidence within the binding. The facing tissue used to protect the chalk drawings was replaced with sheets of loose interleaving paper. Klug silk tissue was selected for its weight, surface texture and stability. The sketchbook was provided with a bespoke drop-back box made of archival boards with TG (Tate Gallery) 100% rag mount board lining. An additional inner wrapper made from archival paper was provided to further protect the binding.



Fig. 8 External view of the Plymouth sketchbook after treatment.

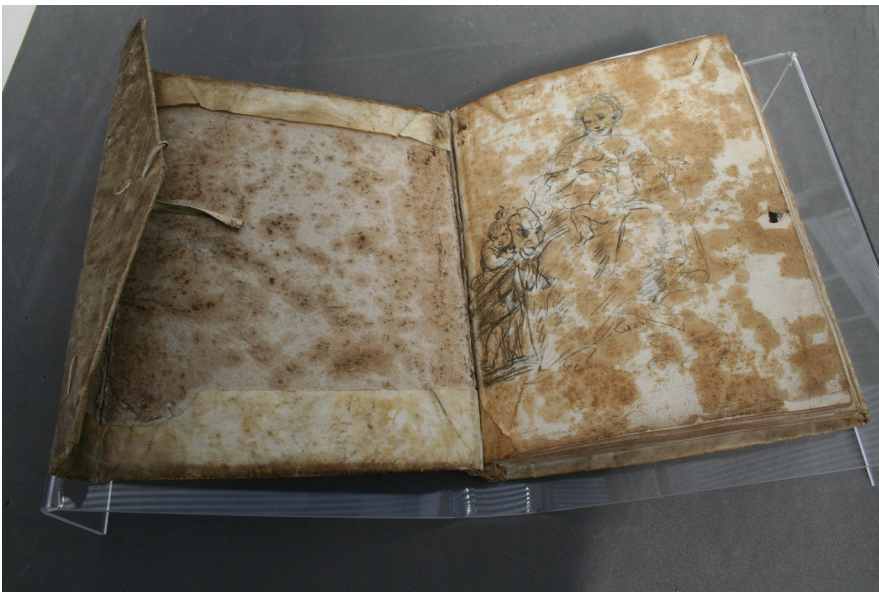


Fig. 9 Internal view of the board repairs to the Plymouth sketchbook after treatment.

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Biography

Heather Norville-Day trained in print, drawing and watercolour conservation at Camberwell College of Art, London in 1979. She obtained the Museums Association Conservation Certificate in 1984 and was awarded an IIC fellowship in 2002. She was employed as Prints and Drawings Conservator for the Area Museum Council of the South West of England in 1982. She moved to London to take up her position of Senior Prints and Drawings Conservator at the Tate Gallery, London, in 1986, working on the newly acquired Turner Bequest, Modern and British collections of art on paper. She moved to the British Museum, London in 1998 to take up the role to manage the Western, Eastern and mounting studios as Head of Pictorial Art, Department of Conservation. This involved managing the conservation requirements of the extensive departmental collections within the Museum. During this time she has also served as an executive committee member of the Institute of Paper Conservation (IPC), and member of the Icon meetings development group, organising conferences for the IPC/Icon. She has lectured and published over the last thirty six years. Currently, she is Managing Director of Norville-Day Ltd, a private conservation studio working with the National Trust, country houses, museums, art galleries and art collectors. She recently completed her master's degree in Business Administration and Finance.

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Materials & suppliers

Hexane, toluene, acetone, Leksol (n-propyl bromide), industrial methylated spirits (IMS); magnesium silicate
 Sigma-Aldrich Company Ltd, now Merck
 The Old Brickyard

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Japanese papers: Sekishu shi, tengujo, gampi, Kozo shi; acid-free blotting paper, 315 gsm; Wet Strength blotter; acid-free tissue, 18 gsm; Heritage 100% cotton museum board TG (Tate Gallery) off-white, unbuffered

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