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# Reconstructing the Lost: Technical Analysis and Digital Reconstruction Supporting the Treatment of a Portrait of Sir Song Ong Siang

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## KEYWORDS

Song Ong Siang,  
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visible retouching, painting  
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## ABSTRACT

In preparation for the 50th Celebration of the National Museum of Singapore (NMS) in 2015, a portrait painting of Sir Song Ong Siang (1871 - 1941), the first Chinese in Singapore to be knighted by the British, was selected by the NMS curatorial team to be the key exhibit at the NMS Modern Colony gallery. The figure was recognised for his contributions to the development of Singapore's civil society during his lifetime and was a prominent member of the Straits Chinese community in Singapore.

Painted in 1936 by the German artist Julius Wentscher (1881 - 1961), the portrait had arrived at the laboratory of the Heritage Conservation Centre (HCC) in poor condition, with diminished visual aesthetics. The varnish was severely discoloured and many areas of the paint layer were inexpertly overpainted, resulting in disfiguration.

Complex restoration treatments were carried out on the painting at the HCC between August 2014 and January 2015. A non-invasive examination of the painting, with normal light, ultraviolet fluorescence and X-ray radiography identified the extent of losses in the original paint layers underneath later overpainting. The examination also revealed extensive damage to the subject's facial features. To gain further insights into the original painting technique, better differentiate it from the overpaints and plan the conservation treatments, additional analytical techniques were employed, such as polarised light microscopy (PLM) and scanning electron microscopy with energy-dispersive x-ray spectroscopy (SEM-EDS).

The final appearance of the reconstructed facial features was a result of many anatomical drawings coupled with digital projections tested within the composition, until the unity of the form matched the whole of the painting. Features such as specific perspective, lighting angles and brushstrokes were considered in reconstructing the ear.

This paper presents an in-depth conservation analysis and the decision-making process, with a focus on the removal of all non-original layers and the process of chromatic reintegration of the subject's facial features.

<sup>1</sup> By verbal communication with the author in October 2014.

<sup>2</sup> The HCC Painting Examination & Treatment Report, created on 15 September 2005 (Conservation ID 10115), contains information about previous two restorations.

## Introduction

The portrait painting of Sir Song Ong Siang was created in 1936 by the German artist Julius Wentscher (1881 - 1961). It was painted on a large canvas support measuring 213 x 145cm (Fig. 1). The painting was originally displayed at Victoria Memorial Hall in Singapore until 1959. There is no record of the painting's transfer to NMS but NMS curator Daniel Tham believes it probably occurred in the 1960s<sup>1</sup>. Due to its drastically deteriorating condition, the painting had undergone three restoration campaigns between 1971 and 2005.

In early 2014, the portrait was selected by the curatorial team to be the key exhibit at the Modern Colony gallery, when the NMS reopened in September 2015 after renovation. As the previous restoration interventions had resulted in an overall degradation of the original paint layer and compromised the proper reading of the artwork, complex restoration treatments were carried out on the painting at the HCC between August 2014 and January 2015. Due to extensive losses in the paint layer, especially in the critical anatomical details, the retouching process turned out to be the most complicated part of the restoration treatment.

In order to understand the decisions made during the treatment, the restoration history of the painting and its condition before treatment will be discussed briefly. The choice of the retouching method will be explained and substantiated. As a joint curator-conservator effort was vital in finding the best possible aesthetical outcome, the role of the curatorial input will also be presented.

## Earlier interventions

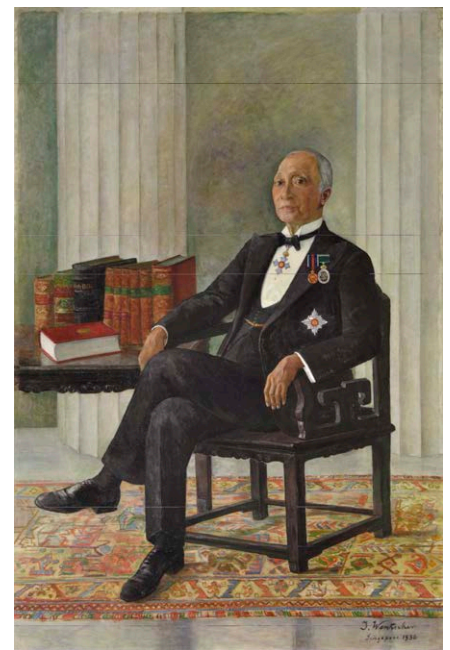
The past restoration records of the portrait, although fragmentary, documented the core treatments and their dates. The first documented intervention was conducted in 1971 and encompassed extensive overpainting and varnish application. The second treatment campaign was conducted between 1991 to 1993. Probably dealing with severe paint delamination and loss, the treatment was focused on the improvement of the structural condition of the artwork. The paint layer was consolidated and the whole painting lined with wax-resin adhesive on cotton canvas, and the minor losses were retouched.

The third restoration was done in 2005 at HCC and it reversed many of the previous treatments.<sup>2</sup> Varnish and selected overpaints were removed. The back of the painting was cleared off from the lining canvas and adhesive. The painting was strip-lined with cotton canvas and Beva film and loose-lined, varnished with Talens varnish and retouched with an unknown brand of acrylic colours.

## Condition assessment

The image that emerges from the previous records is that the restoration campaigns in 1991 and 2005 did not meet one key objective – improve the painting's aesthetics through addressing the issue of disfiguring overpaint.

When the painting arrived at the HCC laboratory in 2014, its condition was found to be unsatisfactory and this was partially attributed to previous restoration procedures. The portrait was severely compromised by inadequate and darkened overpaints, retouchings and yellowed varnish. The raking light photography (Fig. 2 (a)) and X-ray radiogram (Fig. 2 (c)) provided evidence that the purpose of overpaints and retouchings were to cover the losses in the original paint layer. The texture and level of the overpaints and the retouchings did not match the surrounding original paint layer as the



*Fig. 1. Portrait of Sir Song Ong Siang before treatment. Courtesy of the National Museum of Singapore, National Heritage Board.*

<sup>3</sup>Samples of the paint were embedded in fast-curing acrylic resin ClaroCit (supplied by Struers) and polished with abrasives down to grade 4000. Optical microscopy was then carried out in visible and ultraviolet reflected light on the Leica DMRX polarising microscope at magnifications of x40, x100 and x200. PLM was carried out using the methodology developed by Peter and Ann Mactaggart. See Peter Mactaggart and Ann Mactaggart, *A Pigment Microscopist's Notebook*, 7th rev. (Somerset, 1998). The mounting medium for pigment dispersions was Cargille Meltmount nD=1.662. Scanning electron microscope (SEM) Hitachi SU5000 coupled with energy dispersive X-ray spectroscopy (EDS) Bruker XFlash 6/60 were used for imaging morphology of additives and their chemical composition. In SEM, the backscattered electron mode (BSE) was used in 60Pa vacuum, with 20kV beam acceleration, at 50 - 60 intensity spot and working distance of 10mm. The distribution of chemical elements was mapped using Bruker's processing software.

amendments were laid over the original canvas support. The ultraviolet fluorescence photography (Fig. 2 (b)) compared with the X-ray radiogram showed that many of the overpainted areas were greater than the actual losses and consequently covered the original paint layer.

Among the many affected areas, Song Ong Siang's face was the most disfigured due to unnecessary overpaint and the poorly executed reconstruction of the left ear, probably the result of the 1971 restoration campaign. The reconstruction, conducted without an understanding of the principles of perspective and anatomy, was responsible for very negative visual impact. In a 3/4 facial view, the exposed ear, affected by perspective, should appear smaller and narrower than when seen at profile view. The reconstructed ear, by comparison, lacked perspective and related more to a profile view in its greater width. Another issue was the low position of the reconstructed ear in relation to other anatomical details, which revealed an unawareness of facial trisection theory, which proposes that the lengths of the nose and ear are identical, and that each constitutes approximately a third of the facial height.

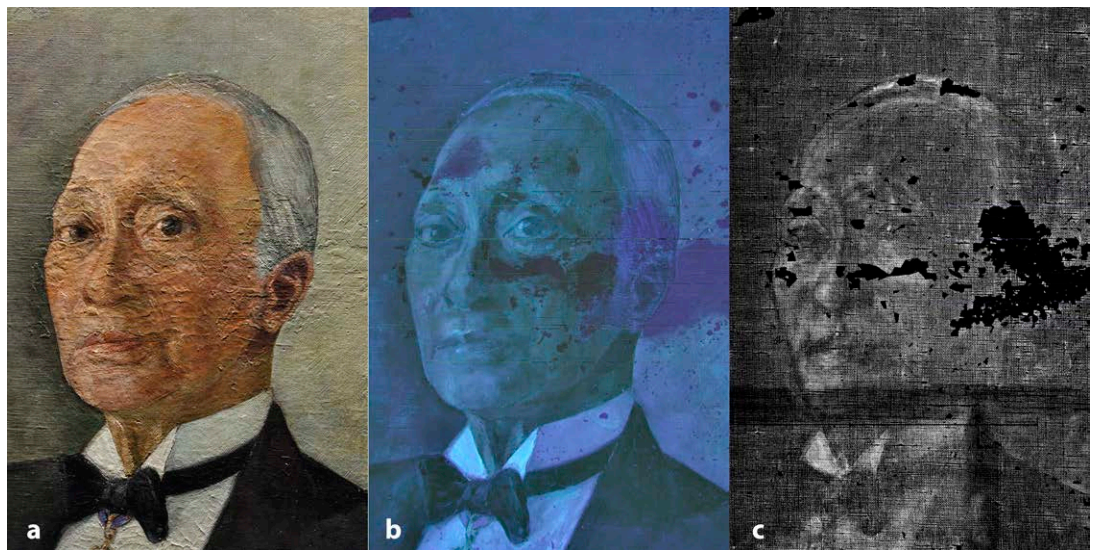


Fig. 2. Close-up of the face. (a) Visible raking light photography. (b) Ultraviolet fluorescence photography. (c) X-ray radiogram.

### Technical examination

In determining a treatment course, it was of utmost importance to first establish what the original and non-original paints are, and to clarify the structure of the layers, especially in the area of the reconstructed ear.

Three paint samples were taken for optical microscopy stratigraphic analysis, polarised light microscopy and SEM-EDS elemental analysis.<sup>3</sup> In view of the planned reconstruction of the ear, it was also interesting to confirm the pigment composition used by the artist for the flesh colour.

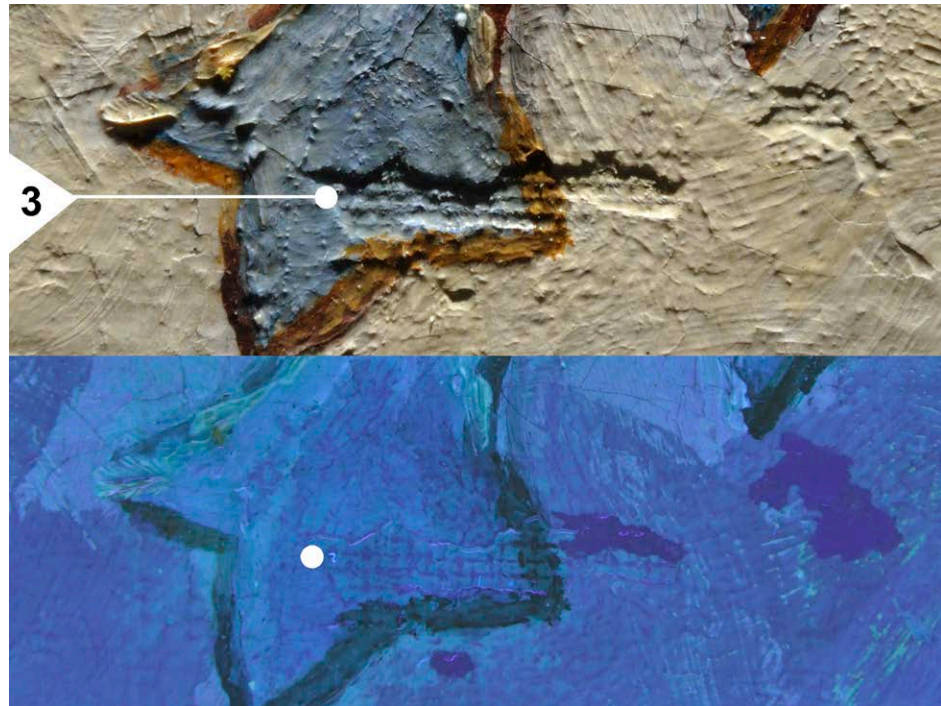


Fig. 3. Detail of the Order with indicated sampling area. The adjacent ultraviolet fluorescence image shows the areas of overpaint.



Fig. 4. Paint cross-section of a sample taken from the blue enamel of the Order, showing a separation between the two blue layers.

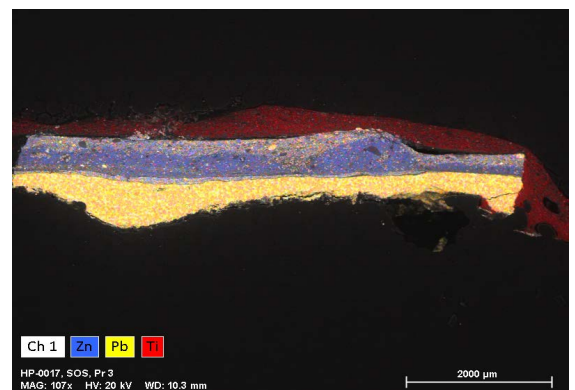


Fig. 5. SEM-EDS distribution map of Zn, Pb and Ti. Layer 2 has different amount of Zn along the upper and bottom areas.

An optical microscopy of the paint cross-section with the blue enamel of the Order near the loss area (Fig. 3) revealed two layers of blue with a distinctive gap between them (Fig. 4), suggesting that the top layer was applied after the lower layer had dried. It is noted that the top layer surrounds the other blue and white layer at the sides as well. In addition, the PLM and SEM-EDS measurement showed that the top layer is a mixture of ultramarine with titanium white (and probably lithophone) (Figs. 5 and 6) applied over the mixture of cerulean, lead and zinc white (Figs. 5 and 7). This finding confirmed that the top layer is an overpaint.

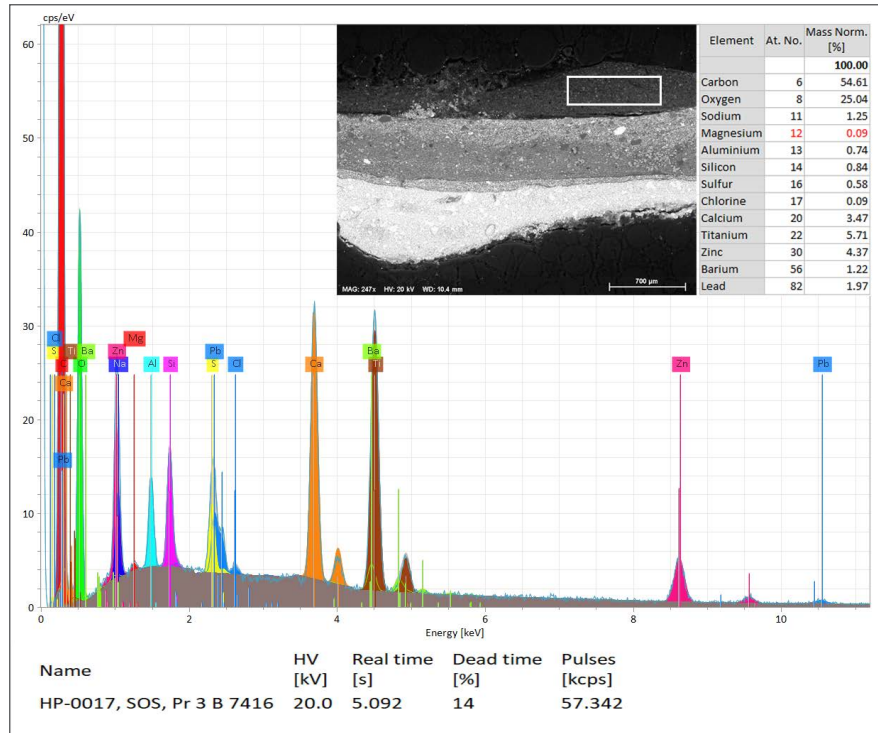


Fig. 6. SEM-EDS quantitative elemental analysis of top blue layer (overpaint). The insert SEM-BSE image shows the paint cross-section with the selected area used for the EDS measurement. The layer is a mixture of ultramarine with titanium white and probably a small addition of lithophone.

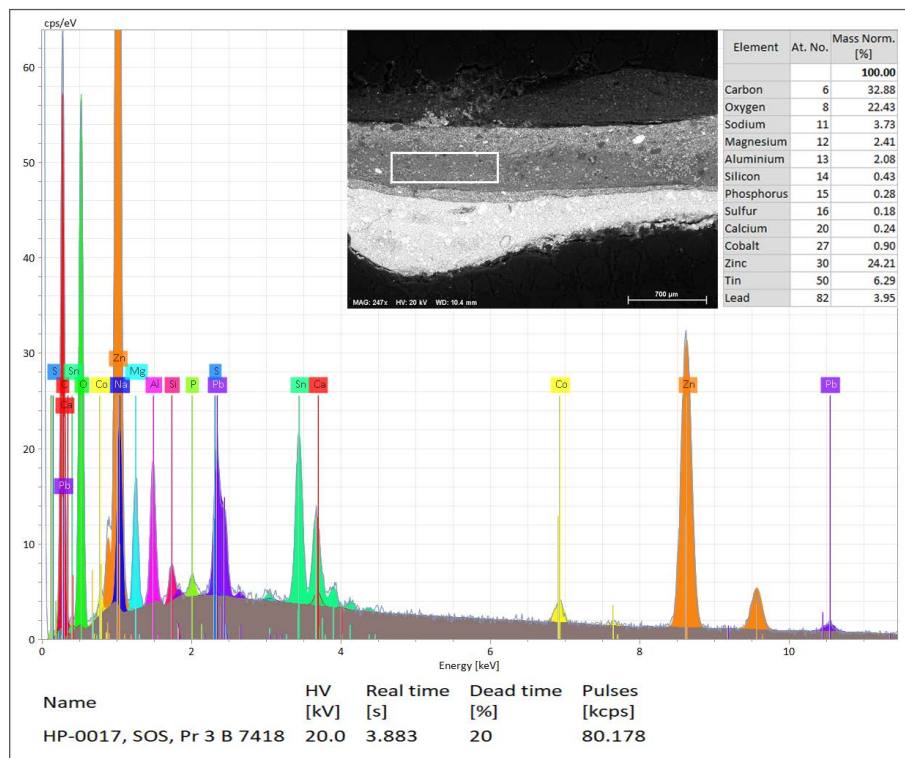
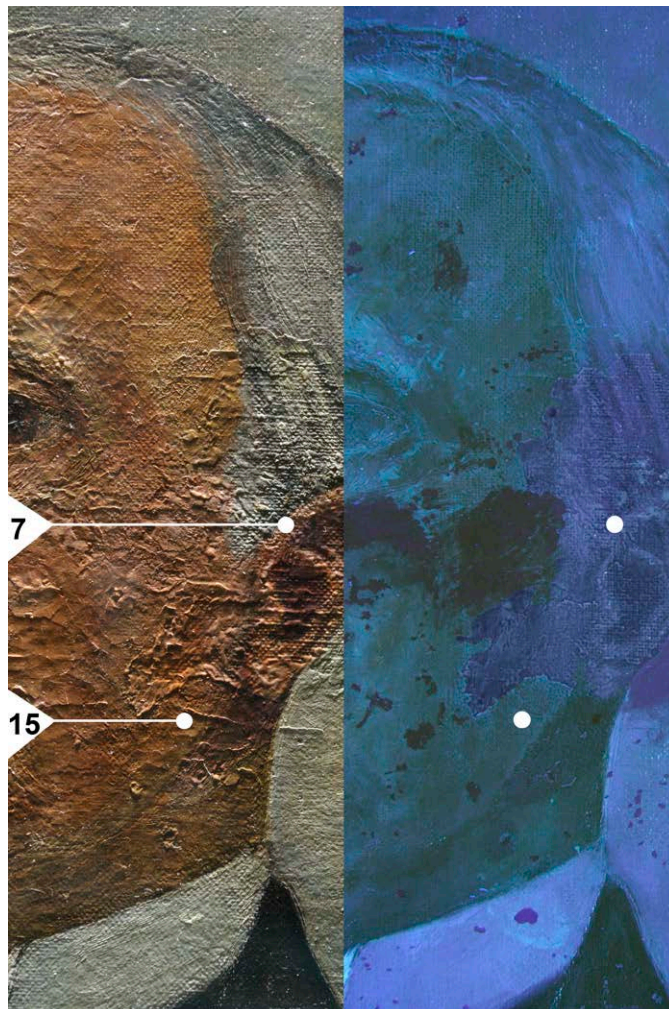


Fig. 7. SEM-EDS quantitative elemental analysis of original blue layer. The insert SEM-BSE image shows the paint cross-section with the selected area used for the EDS measurement. The measurement was taken from the bottom part of the layer, where the higher concentration of Co and Sn gave a stronger signal. The layer is probably a mixture of cerulean, ultramarine, lead and zinc white.

Two cross-sections from the restored area of the ear and the adjacent original paint (Fig. 8) reveal the differences between the structure of their layers. The restored ear was painted directly over the area of loss without priming, confirming the earlier visual observation with the raking light. The sample shows multiple and complex paint layers, suggesting that the restorer struggled to find the correct shape and flesh colour of the ear (Fig. 9). The main component of the overpaints is a mixture of a high amount of titanium white with a small addition of zinc white, which was confirmed by the SEM-EDS (Fig. 10). The flesh colour was achieved by adding iron red, umbra and organic red, as confirmed in the SEM-EDS elemental analysis (Fig. 11) and PLM.

In contrast, the sample from the adjacent original paint layer has a fundamentally simple structure (Fig. 12). The white ground is present and composed of a high amount of lead white with a small addition of zinc white, similar to the sample taken from the blue enamel. The flesh colour above the ground was achieved by an application of three layers of mixtures containing lead and zinc whites with cadmium yellow and sienna, as confirmed in the SEM-EDS elemental analysis (Figs. 13 and 14) and PLM. Although the optical microscopic image of the sample showed a uniformity of the flesh colour layer, the SEM-BSE mode revealed that the artist painted using a layering system with different Pb–Zn and Cd–Fe ratios, perhaps in an attempt to find a satisfactory hue (Fig. 14).



*Fig. 8. Detail of the face with indicated sampling areas. (7) Reconstructed ear. (15) Original paint. The adjacent ultraviolet fluorescence image shows the areas of overpaint.*



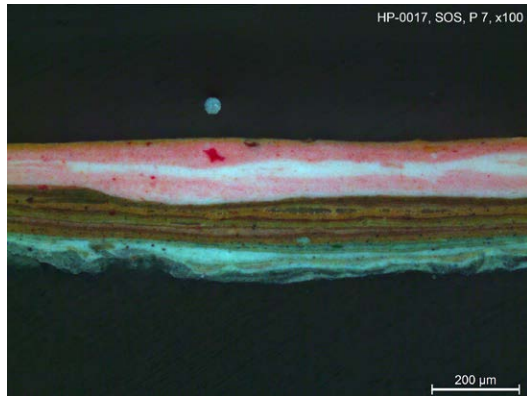


Fig. 9. Paint cross-section of sample 7, taken from the reconstructed ear.

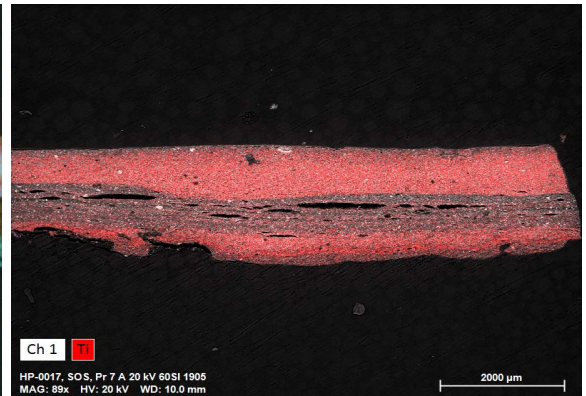


Fig. 10. SEM-EDS distribution map of Ti.

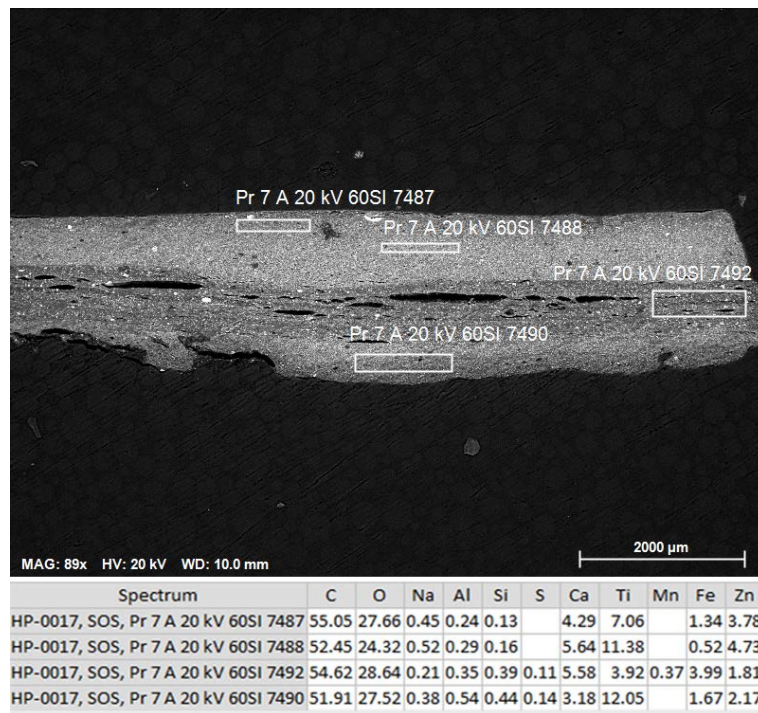


Fig. 11. SEM-BSE image of the paint cross-section of sample 7, with selected areas of the EDS measurements and result table of quantitative elemental analysis.

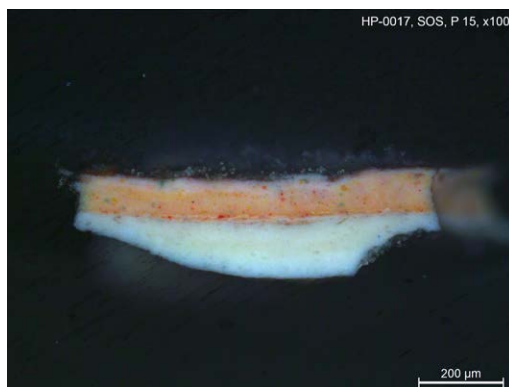


Fig. 12. Paint cross-section of sample 15, taken from the original paint near the reconstructed ear.

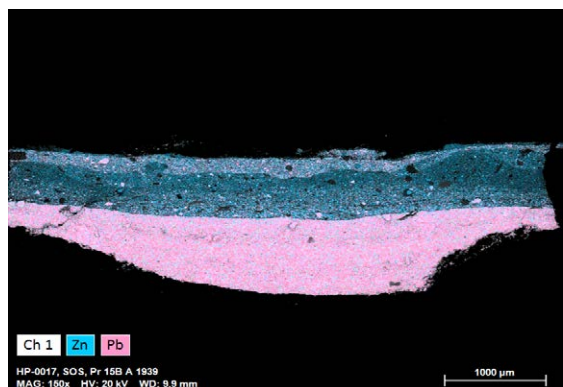


Fig. 13. SEM-EDS distribution map of Zn, Pb.

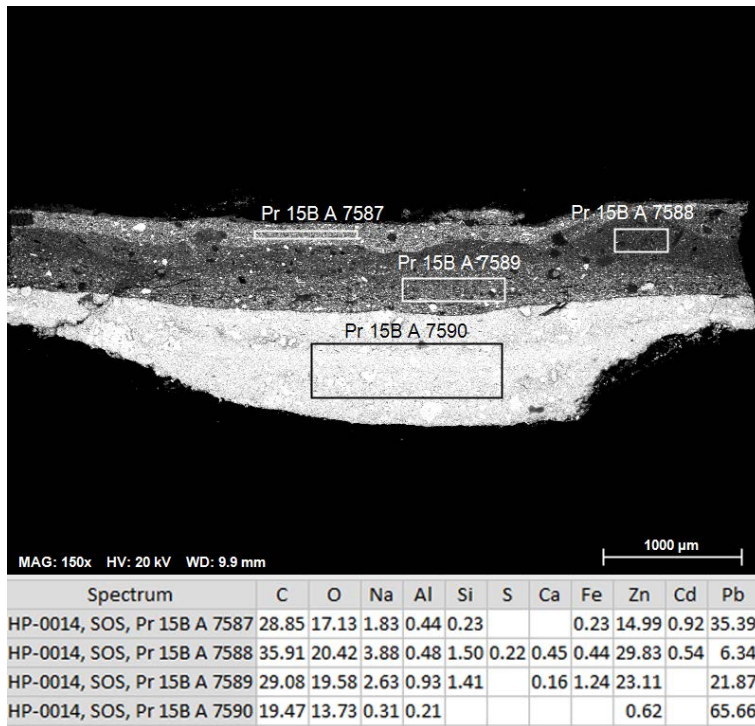


Fig. 14. SEM-BSE image of the paint cross-section of sample 15, with selected areas of the EDS measurements and result table of quantitative elemental analysis.

Additional observations of the painting style of the anatomical details revealed a few crucial details that would be useful in the reconstruction phase. It became apparent that the painter had used dark brown for shadows, light brown for light areas, pink for highlights and light green for middle tones. He also used dark brown contour to enhance the form and isolate it from the background (Fig. 15).

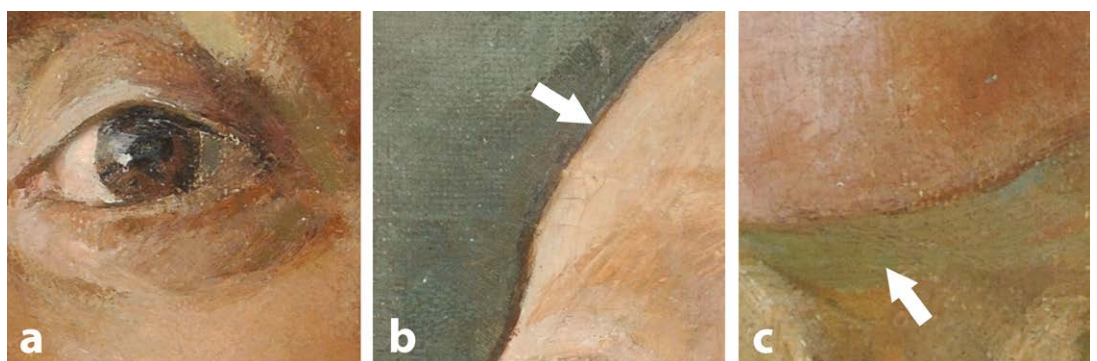


Fig. 15. Detail photographs showing: (a) Dark brown used in shadows, light brown for light areas and pink for highlights. (b) Dark brown contour. (c) Light green.

<sup>4</sup> May Khuen Chung, former NMS curator.

<sup>5</sup> Martens, Maximiliaan P. J., (2015). "Leave it or take it away: ethical considerations on the removal of overpaintings", *CeROArt* (HS), 4. Retrieved from: <https://journals.openedition.org/ceroart/4765>.

<sup>6</sup> Philippot, A. & Philippot, P. (1996). "The problem of the integration of lacunae in the restoration of paintings". In (Eds.), Stanley, N. Talley, Jr., M. K. & Vaccaro, A. M. *Historical and Philosophical Issues in the Conservation of Cultural Heritage*, p. 335. Los Angeles: Getty Conservation Institute. Retrieved from: <https://trove.nla.gov.au/work/21678149?selectedversion=NBD12008809>.

<sup>7</sup> Mora, P., Mora, L. & Philippot, P. (1996). "Problems of presentation". In (Eds.), Price, N. S., Talley Jr., M. K. & Vaccaro, A. M. *Historical and Philosophical Issues in the Conservation of Cultural Heritage*, p. 345. Los Angeles: Getty Conservation Institute.

<sup>8</sup> Mora, P., Mora, L. & Philippot, P. (1996). "Problems of presentation". In (Eds.), Price, N.S., Talley, Jr., M. K., & Vaccaro, A. M. *Historical and Philosophical Issues in the Conservation of Cultural Heritage*, p. 345. Los Angeles: Getty Conservation Institute.

<sup>9</sup> Baldini, U. (1996). "Theory of restoration and methodological unity". In (Eds.), Price, N. S., Talley Jr., M. K. & Vaccaro, A. M. *Historical and Philosophical Issues in the Conservation of Cultural Heritage*, p. 356. Los Angeles: Getty Conservation Institute.

<sup>10</sup> Appelbaum, B. (2007). *Conservation Treatment Methodology*, p. 253. Oxford: Butterworth-Heinemann.

<sup>11</sup> Muir, K. (2009). "Approaches to the reintegration of paint loss: theory and practice in the conservation of easel paintings", *Reviews in Conservation* 10, pp. 19 - 28.

## Treatment decision

Once the condition of the painting and full extent of the losses were known, a decision on how the painting should be treated was paramount. The input from the curator<sup>4</sup> was essential to ensure the success of the project. The curator-conservator discussions and a mutually-reached agreement on a cohesive treatment strategy were required, including well-thought-out decisions regarding how to treat the previous reconstruction of the left ear, overpaints and retouchings.

According to ethical conservation principles, any previous treatment of the artwork forms part of its history and should be taken into consideration during conservation treatment. This triggers a question if overpaint or improper reconstruction that is visually disturbing should still be preserved. Art historian Maximiliaan Martens suggests that, a conservator can consider two treatment options: improving the integration or removing it.<sup>5</sup> As the state of the materials used in the portrait of Song Ong Siang and the quality of the previous treatments were unsatisfactory and could not be sufficiently corrected and integrated, the removal of all the obtrusive materials followed by the reconstruction of lost paint was justified.

Another challenge was the reintegration of losses. Small and medium losses presented no problem and could be retouched using the original paint as a reference. On the other hand, the integration of major compositional losses while respecting the painting's authenticity was considered one of the fundamental issues of the restoration process. Hence, the question of how to address this issue in the portrait of Song Ong Siang was raised during one of the many conservator–curator meetings. As the painting was chosen to be the key exhibit, it was clear that leaving the untreated complex damage in the facial area would interrupt the continuity of the form and hence degrade its artistic and aesthetic value.

From an aesthetic viewpoint, a work of art is not composed of individual parts<sup>6</sup> but characterised by the unity of the form as a whole.<sup>7</sup> Therefore, reconstruction as a critical interpretation is aesthetically justifiable as long as it aims only at making it easier for one to see the potential formal unity of the work existing within the fragments.<sup>8</sup> According to art historian Umberto Baldini, if the intervention should happen, "it cannot be avoided by appealing to that kind of alibi that a convenient interpretation of the 'charter of restoration' allows those who do not wish to face issues or formulate problems with no easy solutions".<sup>9</sup> Barbara Appelbaum similarly feels that the conservator in such a situation has a great responsibility and should face the challenge.

"To refuse to bring an object much closer to its ideal state because we cannot be sure of the one-hundred-percent correspondence of our work with the lost original cuts against our responsibility as conservators to restore the usefulness and meaning of objects to their custodians."<sup>10</sup>

The decision for the reconstruction of the left ear was supported by the obvious anatomic evidence; however, there was a need for more sources to inform the reconstruction treatment. Thus, the curator obtained archival photographs for close examination and the creation of a digital reconstruction prior to the actual painted reconstruction.

Another challenge was choosing between minimal, imitative or visible retouching methods<sup>11</sup> as a technical solution for recovering the artistic integrity in the critical area of the face. Minimal retouching was ruled out because the conservator and curator both expressed concerns over how members of the public would respond to the display of "unrestored work". This retouching method risked drawing the viewers' attention to the flaw, disrupt the flow of the image, and undermine the artist's intention.

While the imitative retouching method could perfectly have served the concept of reconstruction, the visible retouching method was ultimately favoured as it aimed to blend the reconstructed parts seamlessly with the original, in such a way that the reinstated areas would be invisible to normal viewing, but discernible up-close.

<sup>12</sup> Siang, S. O. (1984). *One Hundred Years' History of the Chinese in Singapore* (Reprint). Singapore: Oxford University Press.

<sup>13</sup> Siang, S. O. (1923). *One Hundred Years' History of the Chinese in Singapore*, 4. London: John Murray. Retrieved from: <http://www.nas.gov.sg/citizenarchivist/annotate/transcribe?itemid=33548&collectionid=134>.

## Digital reconstruction

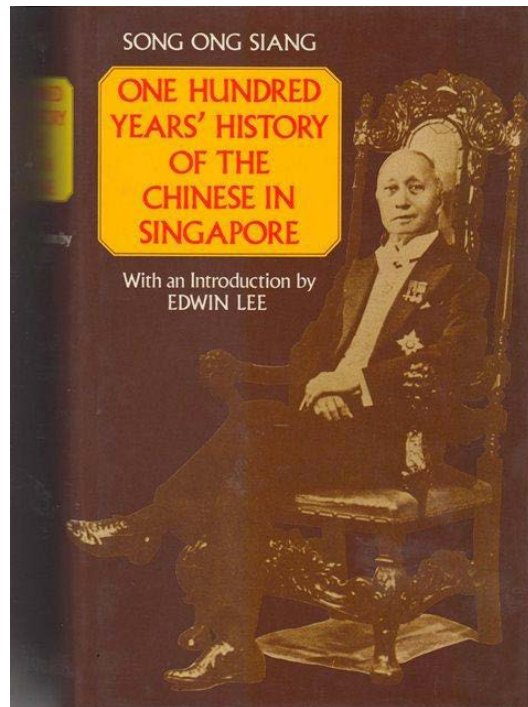


Fig. 16. Photograph of Song Ong Siang, from the front cover of the 1984 edition of *One Hundred Years' History of the Chinese in Singapore* by Song Ong Siang.

There are a few photographic references however, not a single alone offers sufficient information on which to reliably base an accurate reconstruction of the ear.

The first reference is a photograph from the book *One Hundred Years' History of the Chinese in Singapore*, published by Song Ong Siang in 1923 (Fig. 16).<sup>12</sup> There are many similarities between this photograph and the portrait however, in the photograph, the man's head is turned more towards the camera and viewer, hence the visibility of his left ear is reduced. In the painting, the head is angled straight, towards a point in the distance; hence, the left ear is well exposed and well defined to the viewer.



Fig. 17. Photograph of Mr & Mrs Song Ong Siang, from the 1923 edition of *One Hundred Years' History of the Chinese in Singapore* by Song Ong Siang.

The second photograph used for consideration is from the original 1923 edition of the same book (Fig. 17).<sup>13</sup> In this photograph, the man's pose is quite similar to the portrait. The direction of his head in the photograph is similar to that in the painting, with the visible left ear. Unfortunately, the size of the photograph and the quality of the book printing made anatomical study very difficult.

<sup>14</sup> From Lee Brothers Studio Collection, courtesy of National Archives of Singapore (accession no.: 2008\_004971\_LHM). Retrieved from: <http://www.nas.gov.sg/archivesonline/photographs/record-details/a8a8259f-1162-11e3-83d5-0050568939add>

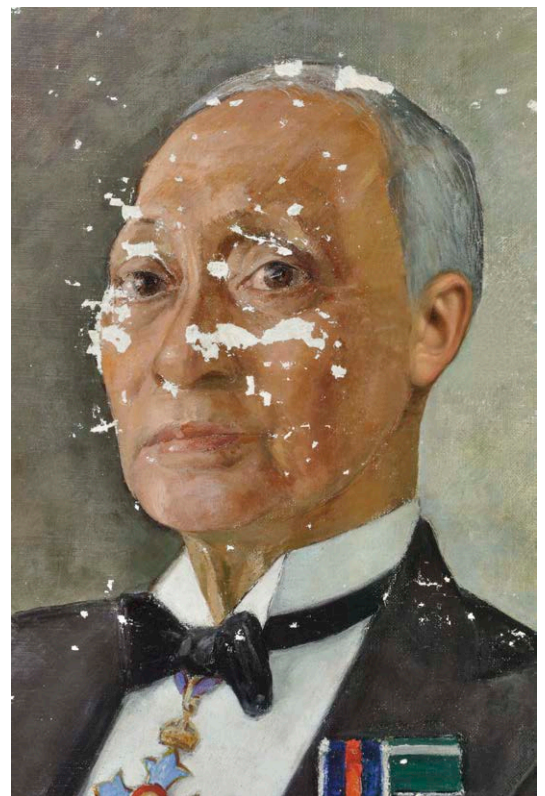


*Fig. 18. Photograph of Song Ong Siang, c. 1920, from the Lee Brothers Studio Collection, courtesy of National Archives of Singapore. Arrows indicate: (a) Helix. (b) Anti-helix. (c) Lobule.*

A third photograph, from c. 1920,<sup>14</sup> presenting Song Ong Siang as a much younger man and showing the right side of his face, provided several essential details for the reconstruction process (Fig. 18). We could see in this photograph that his earlobe is a detached type with distinctive helix (Fig.18 (a)), anti-helix (Fig. 18 (b)) and lobule (Fig. 18 (c)).

Next, preliminary drawing studies were carried out. Facial trisection principles were kept firmly in mind – the length of the nose and ear are identical and each constitutes approximately one-third of the facial height. In addition, as the view of the portraited face is 3/4, the exposed ear's size would be affected by the perspective, and thus appear smaller. If the face had been drawn from a 2/3 view, the ear would be turned more towards the viewer and thus appear bigger. The anatomical drawings were made and tested within an enlarged photocopy of the face until the unity of the form matched the original.

In the next phase, paints were used on mock-ups to observe the changing impact of light and shadow in the definition of the form, and how the reconstructed ear integrates with the face. The most satisfactory results were scanned and, using Adobe Photoshop CC, pasted, and transformed with scale, perspective and distortion tools; this was followed by merging, employing the system of layers, and manipulating with opacity and fill. Finally, the fill was colour-corrected with levels and colour balance tools. The final draft was presented to the curator for consultation (Fig. 19).



*Fig. 19. The result image of digital reconstruction of the left ear and surrounding area.*

## Retouching

Although the previous phases of restoration, such as the complex cleaning process and structural work, constituted the bulk of the treatment time and greatly contributed to the final outcome, those phases will not be discussed here as they are outside of the main focus of this paper. The paint loss reconstruction was the ethically sensitive phase of the treatment and it determined the aesthetic consistency of the painting; thus, it was the focal point of this paper.

For infilling, a white putty – 12% weight ratio of calcium carbonate and Mowiol 4-88 (a polyvinyl alcohol) – was prepared by hand. Imitating the texture of the surrounding paint layer was key for the integration of fills with the original paint layer and for further retouching. To achieve the correct texture, the putty was applied wet by means of dots and modelled strokes to mimic the original texture (Fig. 20).

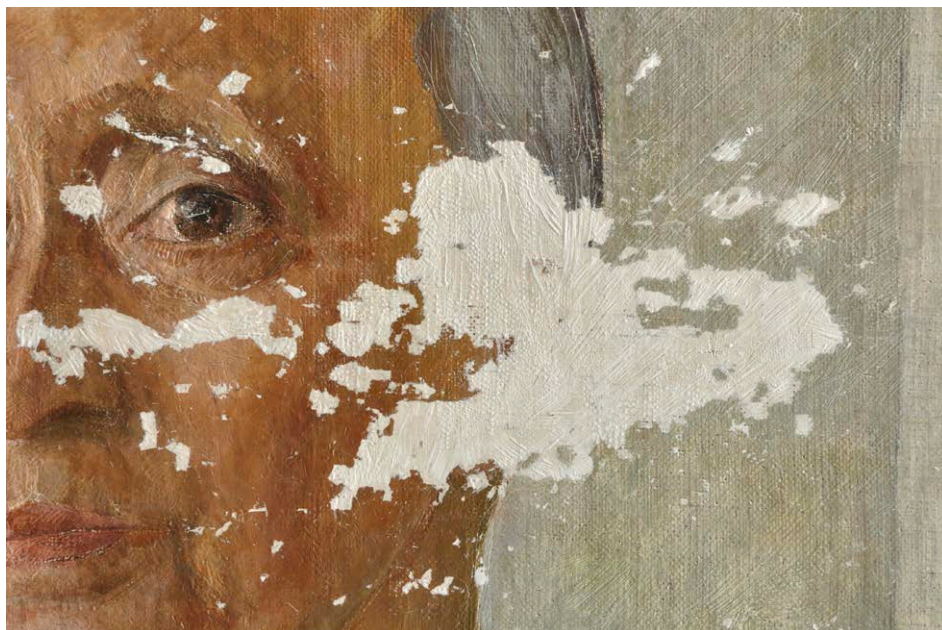


Fig. 20. Close-up view of the area of paint loss after infilling and texturing.

<sup>15</sup> Mora, P., Mora, L. & Philippot, P. (1996). "Problems of presentation". In (eds.) Price, N. S., Talley Jr., M. K. & Vaccaro, A. M. *Historical and Philosophical Issues in the Conservation of Cultural Heritage*. Los Angeles: Getty Conservation Institute, 349.

The painting was stretched onto the stretcher and brush-varnished with 10% Paraloid B-72 in 1-methoxy-2 propanol, followed by a coat of Larapol A81 at 12% in Shellsol A100. Due to the large number of losses (Fig. 21), first, smaller and peripheral areas were retouched; then, the larger and more central areas were approached, until the various nuances became apparent; in this way the damaged areas that were harder to treat could be better assessed.<sup>15</sup>

For most of the small and medium-size losses, Schmincke gouache was used to preliminarily integrate the losses with plain colours. Next, the retouching was executed with Gamblin Conservation Colours.

The painted reconstruction of the ear was a multi-step process. First, an image of the digital reconstruction was printed to the actual size and mounted in the vicinity of the damaged paint, so the latter could be constantly referred to and copied from. Next, a freehand pencil drawing of the ear was executed (Fig. 22(a)) and protected with a coat of 10% Regalrez 1094 varnish in Stoddard. The gouache underpainting was used more freely to recreate the anatomical details; it was also made a few shades brighter than the original

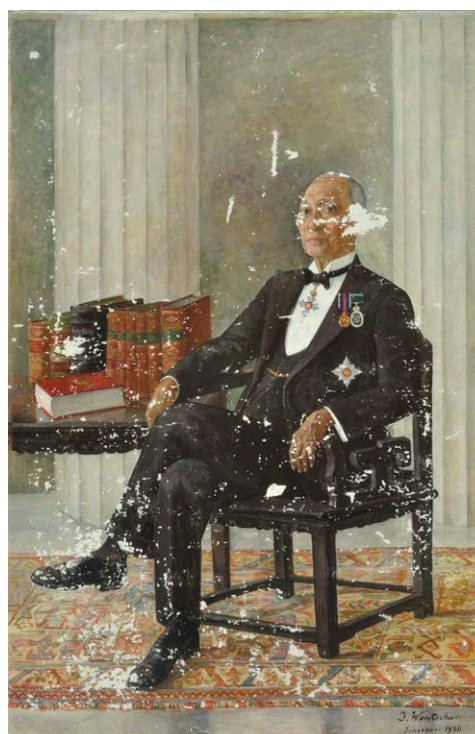
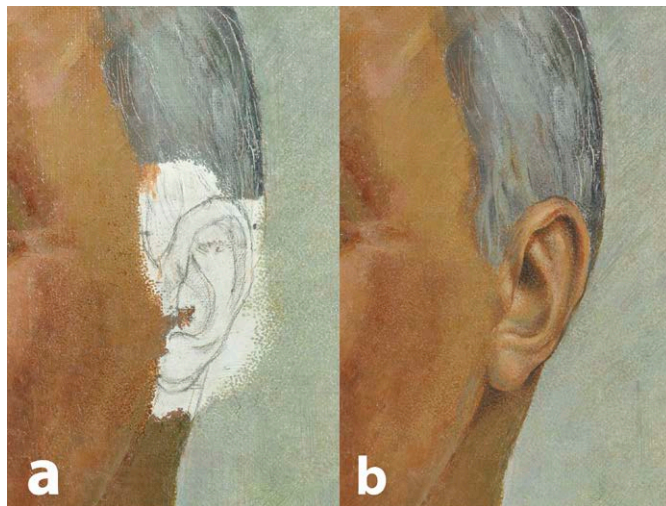
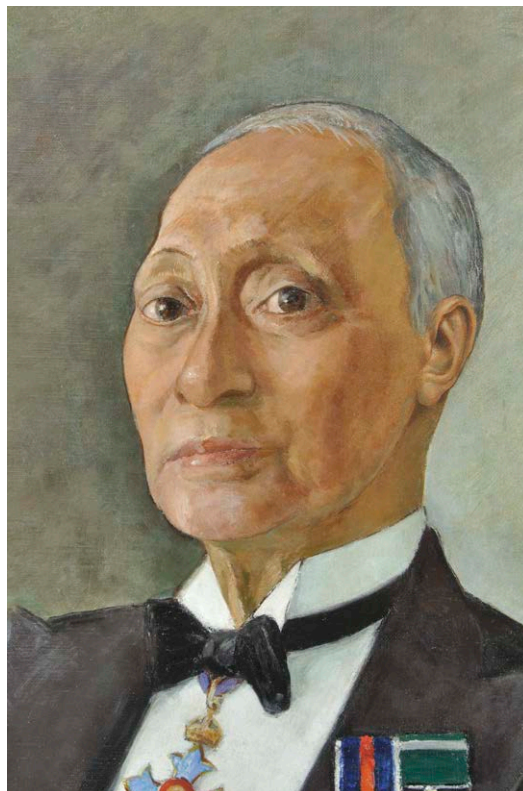


Fig. 21. View of the painting after infilling.

paint layer in order to retain the maximum intensity of the surface for the upcoming visible retouching executed with Gamblin Colours. With this technique, the reconstructed areas are imperceptible when observed from a distance, but distinguishable upon closer observation. An earlier identification of cadmium yellow and sienna in the flesh colour significantly helped with colour matching. It is interesting to note that both pigments are relatively opaque and have good tinting strength, which make them a perfect choice for an artist and conservator. To enhance the final visual effect, some dark, brown contours and light green middle tones were applied; these tones are similar to the ones found on other parts of the face (Figs. 22(b), 23 and 24).



*Fig. 22. Painted reconstruction of the ear. (a) Freehand pencil drawing. (b) Fully reconstructed ear.*



*Fig. 23. Close-up view of the face after retouching.*



*Fig. 24. View of the painting after restoration. Courtesy of the National Museum of Singapore, National Heritage Board.*

## Conclusion

This case demonstrates that in conservation practice, there are no default decisions; they should instead be derived from a complex assessment process. A study of the paint layer with different types of light and x-ray imaging, combined with microscopic and spectroscopic examination of the paint samples, supplemented with past treatment records provided an exhaustive knowledge of the condition, nature and impact of the past interventions on the painting. The information gained from the assessment process allowed for a thorough evaluation of the possible treatment scenarios, made in accordance with conservation ethics.

Knowledge of anatomy and perspective principles combined with freehand drawing and an understanding of the painting style helped the conservator to achieve viable reconstruction. Digital tools greatly enriched the reconstruction process as it allowed manipulation and preview before actual application to the painting. The digital reconstruction was key to allowing the conservator to reach a decision confidently. The visible retouching method minimised losses and restored the painting's functionality.

The reinstated area looks invisible to the casual observer, but it is evident with closer observation, and when illuminated with UV light. The reversibility of the reconstruction was one of the main concerns during this project and it impacted the choice of materials used. In addition, the chosen retouching methodology allowed the conservator to work by the layer, so that each layer can be removed by using different solvents if necessary.

This intricate conservation project was captured on a short film, *Restoring the Lost*. Produced by the NMS, the video clip is permanently installed in the NMS gallery next to the painting to increase public awareness of the complexities of the conservation process of this particular painting and the profession as a whole, and the role that HCC plays in the preservation of the national heritage of Singapore.

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## Author's biography

Damian Lizun received his Master of Arts in Conservation and Restoration of Paintings and Polychrome Sculpture from Nicholas Copernicus University, Torun, Poland, in 2001. During his studies and after graduation, he worked in his family's conservation business, where he gained practical and analytical skills from his father, conservator Zenon Lizun. In 2006, he was appointed Conservator (Paintings) at Tipperary County Museum, Ireland. He moved to Singapore in 2013 when he was appointed Conservator (Paintings) at the Heritage Conservation Centre.

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