

FINAL CONSERVATION REPORT

CONSERVATIVE RESTORATION OF THE PAINTED WOODEN SCULPTURE WITH BRONZE-EFFECT FINISH REPRESENTING POPE MARTIN I

Sculptor: Carlo Laurenti

Date: 1638

Location: Temple of Santa Maria della Consolazione, Todi (Perugia), Italy

Date of Intervention: June 2026

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The sculpture subject to the present conservation treatment was carved from **White Poplar (*Populus alba*)**, a hygrophilous tree species naturally occurring from valley floors to medium and high mountain environments, where it may attain a trunk diameter ranging from approximately 50 cm to 100 cm.

This timber possesses highly valued technological characteristics, including a straight and homogeneous grain with very few knots. The sculpture is finely carved and composed of multiple wooden sections assembled together to form the final modelling of Pope Martin I.

The initial phase of the intervention consisted of the careful removal of surface dust and loose particulate deposits by means of controlled dusting and vacuum aspiration of the painted surface.

An insect eradication treatment of the wooden support proved necessary and was carried out through brush application and injection of **orthophenylphenol** in a **carbon tetrachloride solution**, together with a **permethrin-based insecticidal preparation diluted in pure petroleum**

solvent, ensuring that the treatment did not come into contact with the painted surface.

The consolidation of the wooden support was undertaken through repeated brush applications of an **acrylic resin solution (Paraloid B-72)** diluted in trichloroethane at a concentration of 7%, with the addition of a permethrin-based insecticidal product (Permetar) at a concentration of 2%. The solution was applied in successive coats of progressively increasing concentration.

The re-establishment of cohesion and adhesion between the wooden support, preparatory layers and paint layer was achieved through the application of a synthetic adhesive and localised injections of diluted **Acrylic 33 resin**. This was followed by controlled consolidation using a heated spatula and beeswax. The materials were applied both by brush and syringe, with subsequent pressure exerted through the heated spatula. This treatment was necessary due to the presence of widespread losses of adhesion and cohesion affecting the constituent materials of the sculpture.

The work exhibited extensive accumulations of compacted surface deposits that had formed over centuries. Their removal was therefore considered appropriate and was carried out using **deionised water** and **surfactants**, applied with cotton swabs and soft brushes.

The gilded and darkened areas required a more selective cleaning approach and were treated through chemical cleaning using **organic solvents** and/or **alkaline solutions**, applied with cotton swabs and brushes.

Areas of loss requiring structural filling were treated following the application of **Vernis à Retoucher**. Deep losses were filled using a **two-component Balsite filler**, applied in successive layers with a spatula and subsequently shaped and levelled using a scalpel to match the surrounding paint surface.

Chromatic reintegration was then undertaken in order to restore the visual legibility of the image while ensuring complete reversibility of the intervention in areas of loss and chromatic imbalance. Reintegration was carried out using **Winsor & Newton watercolours**, selected from stable and non-alterable tonal ranges and applied through glazing techniques. Additional colour matching was achieved using **Maimeri conservation**

retouching colours to restore the continuity of the paint layer and achieve accurate chromatic integration.

This operation was preceded by the application of **Vernis à Retoucher**, intended to restore the correct refractive index of the painted surface.

With regard to the wooden keys held by Pope Martin I, these elements were found to be entirely overpainted. It was therefore considered appropriate to remove the later repainting through chemical cleaning using organic solvents and alkaline solutions applied with cotton swabs and brushes.

The resulting losses were filled following the application of Vernis à Retoucher using a traditional filler composed of **rabbit-skin glue**, prepared at a ratio ranging from 10% adhesive to 90% water, mixed with **Bologna chalk** in appropriate proportions. The filler was applied with a spatula and subsequently levelled using a scalpel to achieve continuity with the surrounding paint layer.

Losses occurring within gilded areas were reintegrated using **shell gold**.

Finally, the entire painted surface of the sculpture was varnished through the application of synthetic resin solutions with the dual purpose of providing protection and restoring the correct refractive properties of the surface. Up to four spray applications of synthetic resin varnish dissolved in petroleum ethers were carried out to achieve the desired protective and aesthetic results.

Comprehensive colour photographic documentation was produced throughout all stages of the conservation treatment.