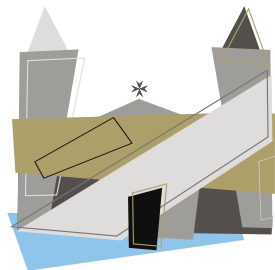


EUROPEAN CATHEDRALS

The Equilibrium between
Conservation and Spirituality

MALTA
11-12 MAY 2023





St John's Co-Cathedral

• Valletta Malta •

St John's Co-Cathedral Foundation
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Navigating Conservation Strategy Beyond Pitfalls

THE RESTORATION OF 86 FIGURES OF SAINTS IN THE CHOIR VAULT OF BERN CATHEDRAL: A MULTI-LAYERED CHALLENGE

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Abstract

The choir vault in the Bern Minster, built in 1514-1517, was cleaned and restored in 2014-2017 for the first time in its history. The occasion was the 500th anniversary celebration of the choir's completion. The 86 figures of saints from the pre-Reformation period all still bore the original painting from 1517. The restoration presented the experts with technical, scientific and social challenges. Questions about the best possible techniques for preserving the artistic and historical value were overlaid by discussions about the iconographic significance of the representations, which had disappeared under thick layers of dust with the Reformation of 1528, and their current religious value in everyday church life. The centuries have left their marks. While the surfaces were in a surprisingly good state of preservation, the original colours, however, have changed over the centuries, partly due to irreversible chemical processes.

For three years, the Münsterbauhütte Bern, together with graduate restorer Cornelia Marinowitz, worked tirelessly, documenting and researching with great meticulousness and patience. A large team of specialists in Switzerland and European countries provided them with advice and assistance.

The careful conservation of the figures and the entire vault allowed unique insights into the work processes of a medieval building site as well as into the social environment of the master builders, craftsmen and artists of the time. The high spiritual importance of the holy figures at the time of their creation is reflected in the care and the incredible richness of detail in their design. This was despite the fact that the figures, 20m above the ground, could hardly be seen by the public at the time. Many details such as the conscious representation of shiny and matt clothing fabrics, or the finely detailed eyes, hair and even three-day beards were certainly not visible from below.

Introduction

The Bern Minster is the largest church in Switzerland. The foundation stone was laid in 1421, and construction was provisionally completed in 1574 after more than a century.¹ The new choir was vaulted in 1517 and put into operation. The richly designed choir vault bears witness to the piety and self-image of the city-state of Bern, as the main commissioner and sponsor of the cathedral building. The so-called "heavenly court" is adorned with 86 polychrome busts of saints, framed by angels bearing the Bernese coat of arms. The same coat of arms can be seen on the huge central Keystone but in a much larger proportion.

On the inside of the choir arch is an inscription with the following content: "In 1517, this vault was completed by Master Peter Pfister - the end of the worthy minster".² However, the building was far from being completed when the Reformation swept through the church in 1528 and all the altars and much of the architectural sculpture were removed. Many of the works of art were used as material to fill the large terrace on the south side of the cathedral, which was under construction at the time. The terrace also inhabited some sculptures, that were rediscovered in the year 1986.³

Surprisingly, in addition to the main portal on the west facade, the figurine decoration in the choir vault survived the iconoclasm. This probably had several reasons:



Fig.1: General view of the choir vault after conservation. 2017, Nick Brändli.

On the one hand, the depictions of saints in the choir vault were protected behind a choir screen in 1528.⁴ It is also quite possible that the city of Bern, as the developer, still remembered the enormous costs that the works of art in the choir vault had caused.⁵ They were certainly spared because of their great height. On the other hand, bullet holes on the busts suggest that there must have been iconoclasm since there were even shotgun pellets remaining. It is quite possible that the saints were targeted, but that the range of the shotguns at that time was not sufficient for greater harm. Another reason why the figures in the choir vault survived was certainly the fact that the figures are firmly built into the vault as keystones (or crossing stones) made of Bernese molasse sandstone. They could not be removed without great effort and without damage to the building structure.

Last but not least, the artist of the choir vault, Niklaus Manuel Deutsch, was an important promoter of the Reformation even before 1528, as well as a diplomat and mediator between the supporters of the Reformation and those of the Catholic Church.⁶ Niklaus Manuel Deutsch worked for peace among the Confederates until his death in 1530. Who knows, perhaps the choir vault in Bern Cathedral is one of the earliest examples of mutual tolerance and lived ecumenism?

The Pictorial Programme in the Choir Vault of Bern Cathedral

The choir vault depicts the heavenly court in a unique sculptural design. The busts of the 86 figures of saints float on blue clouds. The pictorial programme is aligned with the central axis. The saints are arranged hierarchically. To the east are gathered the biblical saints, the Holy Trinity and the members of the Holy Family followed by the Apostles and the Evangelists. Towards the west, martyrs, saints, bishops and abbots are found. From east to west, there is a shift from biblical to church historic figures. While most of these are great old saints, the local saints are also prominently placed: On the central axis directly after Mary, patron saint of the predecessor church, we find Achatius, patron saint in Bern's battles at the end of 15th, and Vincent, patron saint of Bern and the Bernese Minster. On the choir arch towards the central nave, in addition to Himerius (hermit and saint from the Bernese Jura), four builders (the "Quatro Coronati") are depicted.⁷

Condition as Found and State of Preservation

For a long time, researchers were convinced that the late medieval vault with its 86 figurative keystones had been painted over several times and that hardly anything of the original remained. It was not until

2012 that the restorer Cornelia Marinowitz dared to formulate the hypothesis for the first time, after preliminary investigations, that the colour versions found could be the medieval painting. The hypothesis was confirmed as soon as all the figures could be examined in detail from the scaffolding platform: all the keystones still bear the original 1517 version as a visible setting. The surfaces were in astonishingly good condition under thick layers of dust.



Fig.2: Final status photos of the figure busts after the conservation. Top left: Barbara, top right: Maria, bottom left: Gallus, bottom right: Beatus (local saint). 2017, Nick Brändli.

The keystones in the choir vault are unique in Europe in terms of their artistic quality and state of preservation and are a great stroke of luck for conservation science. Rarely can we still read all the work processes during construction as well as technical problems in the implementation on the medieval construction site so unaltered in the building. On closer inspection, the working conditions and working circumstances on the medieval building site became tangible. The almost untouched condition of the figures allowed impressive insights into the challenges faced by the builders. Damage to the sculptures from the construction period is evidence of the effort involved in bricking up the vault and installing the large, heavy busts at each of the 86 junctions.

In their distress, the masons were not squeamish about the sculpture work. If a figure did not fit on the auxiliary scaffolding, they quickly took up hammer and chisel and made the workpiece fit. For example, half of St Andrew's cross was cut off and even part of his head was shortened. Joseph had a hole hewn in his left arm so that he would fit on the empty frame. Before it was even fitted, the head of Mary broke off and was repaired later with iron clamps. In the case of Jesus, both hands had to be glued back on. Some parts were partially mended with wood before the paint was applied. Only two of the 86 figures survived the installation on the vault without any harm. When the figures were painted, the missing parts were expertly concealed through skilful painting, rendering them invisible when viewed from below.

The figures endured harsh treatment during the installation of the keystones in the vault, yet they were subsequently painted with great dedication. It seems almost as if the saints were given their spiritual meaning only with the colouring. Thanks to the good state of preservation, many new insights into the technology of medieval polychromy on stone could be gained. The fact that all layers of the colour composition are still completely intact is a rarity. In the interior, figures were often repainted several times; in the exterior, relevant information is usually missing due to weathering damage or earlier conservation measures.



Fig.3: Detail of Otmar, after cleaning. 2017, Nick Brändli.

The incarnates of the faces were most carefully applied in several layers. Details such as small hairs, stubble, eyebrows and highlights in the

pupils were painted on the last glazed coat. All the clothes were depicted true to life, both in their design and in their materiality. The interplay of matt and glossy fabrics was achieved with different binders. Matt linen fabrics for shirts and undergarments were painted with distemper. The effect of shiny silk fabrics for the depiction of precious gloves and inner linings of capes was achieved with oil-based paints. The metal overlays (gold, silver) were covered with lustres to depict further details such as iridescent armour, button bands on shirts or iridescent dragon scales.

Even the undergarments were painted in places that could not be seen from below - evidence of the great piety of the artists of the time. The figures of the saints were depicted with utmost precision to honour their significance as exemplary social role models. The lifelike painting of the busts shows remarkable precision, as if intended for close-up viewing rather than from a considerable distance of around 20m. Could this attention to detail be a tribute to the divine?

Despite all the obsession with detail, a very rational and cost-conscious approach was taken. All the colours on the busts were applied serially, one after the other, always in a predefined order. It was done very pedantically and according to a strict programme. The expensive building materials and pigments were handled with extreme care. Sometimes, even the last bit of lime was scraped together for the plastering of the surfaces. As suggested by the dirty material on the vault surfaces, they even reused from the floor and picked up fallen lime residues. The oil in which the brushes were stored and cleaned was also reused as an application agent for gold and silver coatings. Traces of it were found in situ. The expensive gold was spread as thinly as possible on cheaper silver leaves. Today, this technique is called "intermediate gold".

The Mauresques in the vaulting caps, which can be found in the background of the 86 busts, also date back to the year 1517. Here, too, the time pressure and working conditions of the time become tangible: The Mauresques were painted quickly and freehand on the white vaulting caps,

without a preliminary drawing and without stencils. The black paint had to be heavily thinned for this purpose. This resulted in annoying colour runs in many places, even on Niklaus Manuel's monogram. The painters did not seem to care much about the running paint and neither bothered with touching it up.



Fig.4: Sondage from 1990. A restorer was commissioned to search for the medieval colour version, unaware that he had the original in front of him. In the process, the artwork was severely damaged. 2014, Berner Münster-Stiftung.

Traces of soot from torches on the surfaces tell of the difficult lighting conditions on the medieval construction site. The artists worked with simple lanterns and oil lamps. To keep their hands free while working, they often carried torches in their mouths. The resulting traces of soot on the white background were demonstrably repaired as early as the 16th century, probably shortly before the scaffolding was removed. They were part of the normal appearance of a vault in the Middle Ages and are still visible today. During conservation, it was deliberately decided not to remove such traces.

Earlier Interventions and Damages

The Reformation shortly after the installation of the holy figures in the choir vault proved to be fortunate for the overall work of art. The figures had been disregarded for several centuries and left to their own devices. The splendour had been forgotten under the dust of centuries. A new gilding or repainting of the surfaces was out of the question, a monochrome overpainting was never commissioned. The last (and only) known intervention in the vault took place in 1910, when reinforcing measures were carried out on the vault ribs. These were connected to each other by means of iron clamps. At the same

time, the choir walls above the vault were connected with concrete girders and the large blast ring was suspended from them. From today's point of view, both interventions were hardly necessary and the reasons are no longer comprehensible. After the vault ribs were bracketed, they were repainted in a dark red. The clouds on which the holy figures sit were also repainted in a darker blue. The vault caps were already heavily soiled in 1910, but fortunately were not completely cleaned or repainted at that time. Instead, retouching was carried out in the grey tone of the crusty lime surfaces. Fortunately, this overpainting was done with water-soluble glue paint and could be removed by the restorers after cleaning the vault.



Fig.5: The central easternmost keystone: the Dove representing the holy spirit. Picture taken after cleaning and conservation. 2017, Nick Brändli.

The damage to the stone busts found in 2014 either dates from the construction period, as described above, or testifies to later improper handling of the objects. This refers, for example, to residues found on the painting layer from the making of plaster casts of individual figures in the course of the measures taken around 1910. The release agent left behind on the paint frames made the gilding appear dull. The remains of the unknown agent were removed by the restorers in 2014-2017.

Scratch marks in the colour mounts, however, which were created when the moulds were cut open, represent irreversible damage. In 2017, for these reasons too, plaster casts were not made again. Instead, the figures were photographed without contact by means of three-dimensional photogrammetry to secure them and to make them accessible to the general public as 3D models.⁸

Further damage was caused by sondages in the 1990s, when the desire to restore the vault arose for the first time. A restorer was commissioned to search for the original colour version. In the process, several stones were severely damaged. With the preconceived notion that the old vault would certainly be overpainted several times and in ignorance of the church's historical circumstances, he made soundings on several figures down to the stone base. Unaware that the original was right in front of him, he mistakenly concluded that no traces of the original existed under the visible version, leading him to believe that the original was lost. This misconception persisted until 2012.

Measures Carried Out 2014-2017

The aim of the restoration was to recreate a coherent overall picture of the entire altar room. At the same time, the history of its creation and the significance of the work for the people at that time should remain legible for future generations. Technological findings such as medieval repairs or imperfections were also to be preserved. The conservation of the original versions, even if aged over the centuries, had top priority. Removing the thick layers of dirt was also desirable from a conservation point of view.

The vault with its 86 busts, but also many square meters of wall surface, was meticulously freed from dust and soot. The thick grey layer of dirt came mostly from the hot-air heating system installed in the cathedral in 1874, which had been operated with coal for a long time. All surfaces were cleaned by hand with dry sponges and, where necessary, damp cotton swabs. After cleaning, cracks in the plaster of the vault caps were secured. A distinction was made between shrinkage

cracks in the lime plaster that had developed during construction and did not require any measures, and cracks and shell formations with progressive damage potential.

The busts of the figures were carefully cleaned. Moreover, neither retouching nor new gilding or silvering was carried out. The largest part of the work here consisted of a comprehensive survey and documentation of the findings. Binders and pigments were examined in detail.⁹

The only exception to the purely conservational concept was the handling of the colour of the vault ribs. These had been painted over in 1911 in a dark red, which had matched the dirty condition at the time. At the end of the restoration, it was decided to return them to the original light shade of red. The original shade could be found on the backs of the figures. Uncovering the original proved to be feasible neither from an economic nor from a conservation point of view. The ribs were finally painted over with a glaze of silicate chalks and water using a completely reversible technique.



Fig.6: Jakobus the elder, pre-state 2014 (top) and final state 2015 after the cleaning (bottom). Berner Münster-Stiftung.

This decision has played a significant role in creating the current harmonious atmosphere in the room and has greatly enhanced the legibility of the saints' busts when viewed from below, contributing to their restoration.



Fig.7: Work in progress: cleaning of one of the keystones (Maria). 2015, Berner Münster-Stiftung.

Authenticity and Spirituality

The pre-Reformation works of art preserved in the choir vault of Bern Cathedral allow us to gain an insight not only into the technology but also into the spiritual world of the society of that time. The devotion with which the saints were painted at that time - and which obviously brought them to life in the minds of the citizens of the time - can still be felt today. In view of the undisputed value of the busts, a repainting or refreshing of the surfaces was never up for discussion. In addition to a clear restoration ethic, it was also a matter of respect and appreciation for the achievements of our ancestors. With one exception: In the course of the project, after receiving a corresponding application from the parish, it was intensively discussed whether the dove of the Holy Spirit should be re-silvered and freshened up. In contrast to the other representations of saints, it still has a high spiritual significance in the Reformed Church.

Over the centuries, however, the silver plating had been altered by oxidation and the originally brightly shimmering dove had become unrecognizable. Suddenly, questions about the best possible techniques for preserving the historical value were eclipsed by discussions about the iconographic significance of the bust and its current religious value in everyday church life: Should and may the symbolism of the work of art be placed above its authenticity here?

A comprehensive examination of the colour composition of the keystone in question led to clarity: Further fine paintings lay over the silver plating.¹⁰ The exact colour structure cannot yet be fully understood, as this is where today's analysis methods reach their limits. In order to allow future generations to find out more about the work of art with the possibility of new examination methods, a decision was made together with the parish to preserve the aged, authentic condition. The scope for interpretation remains too high and a modern re-silvering could never even come close

to the original. The spiritual power that lies in the experienceable history would be lost.

What has long been the common opinion with famous paintings also applies to centuries-old architectural sculpture: the value of a work of art is not primarily measured in its visual flawlessness but in its charisma, which has been preserved as authentically as possible. Best said by the Swiss Architect Peter Zumthor: "Only the old is the old! The chair my grandfather sat on is the chair he sat on. A copy of that is another chair."¹¹

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Fig.8: Intermediate state of an exemplary axis in the choir vault: partially cleaned with visible grey retouching from 1910 (left) / final state after cleaning and painting over the vault ribs (right). 2015 / 2017, Berner Münster-Stiftung.

The final result after the scaffolding was removed in 2017 speaks for itself. The choir room shines with a whole new (because old) spirituality. The play of light from the choir windows on the cleaned but ancient surfaces is stunning. Even though silver coatings have oxidized irreversibly over the centuries and some pigments have lost their luminosity forever, we can now give visitors an impression of the once colourful and dazzling medieval imagery and its significance for the citizens of that time on the eve of the Reformation.



Fig.9: Signature of the artist Niklaus Manuel Deutsch from 1517 in a vault panel on the north-east side of the choir vault (picture taken after cleaning). It is clearly visible how the thin paint ran down at the time of construction and how the vault caps were stained from the beginning. 2017, Berner Münster-Stiftung.

Notes

¹ 1521 completion of the lower tower octagon, 1528 interruption of construction due to the Reformation, 1571 resumption of construction and vaulting of the central nave in 1573, vaulting of the lower tower octagon in 1574 and temporary end of construction, tower completion 1889-1893. <https://www.bernermuenster.ch/bauwerk/bauphasen>

² Original text: “ALS MAN ZELT VON DER GEBURT CHRISTI UNSERS HEREN : 1517 : WARD DISS GWELB DURCH MEISTER PETER PFISTER USBAWEN. DES WIRDIGEN MINSTERS ENDE”.

³ Zumbrunn U., Gutscher D., *Bern. Die Skulpturenfunde der Münsterplattform. Katalog der figürlichen und architektonischen Plastik, Staatlicher Lehrmittelverlag, Bern 1994.*

⁴ First supposed closure of the choir around 1500 by Erhart Küng, second closure of the choir around 1574 by Daniel Heintz (broken down in 1864 in view of a large singing festival, where more space was needed for the choirs). The busts of saints remained untouched even when the second choir closure was demolished in the 19th century.

⁵ Rüfenacht, A. “Bildersturm im Berner Münster? Berns Umgang mit sakralen Bildern in der Reformation – Symptom der städtischen Herrschaft”, in *Zwingliana*, 44, 2020, 1–155.

⁶ Locher G. W., “Die Berner Disputation 1528. Charakter, Verlauf, Bedeutung und theologischer Gehalt”, in *Zwingliana*, 1978, 542-564.

⁷ According to: Hirsch S., *Ikongrafische Analyse der uneindeutigen Schlusssteine*, CH-Schlieren, August 2013; Gasser S., “Die Gewölbeschlusssteine des Berner Münsterchors”, in *k+a Kunst+Architektur in der Schweiz*, No. 2/2017, Gesellschaft für Schweizerische Kunstgeschichte, Bern, 2017, 16-23.

⁸ The 3D images also proved to be very helpful in the targeted search for suitable locations to take samples for binder and pigment analyses. Sampling could thus be reduced to an absolute minimum. <https://www.bernermuenster.ch/bauwerk/interaktives-chorgewoelbe>

⁹ Marinowitz C., Bläuer C., “Die farbige Gestaltung des Chorgewölbes und seine Restaurierung”, in *Das Berner Münster*, Regensburg, 2019, 495-543.

¹⁰ According to Ueli Fritz, Prof. Dipl. Restorer (Bern University of the Arts) and Cornelia Marinowitz, Dipl. Restorer and technical site manager 2014-2017: The silver was applied with almost pure oil, which has only small traces of a proteinaceous substance. The leaf metal is pure silver. The silver was almost completely converted into silver sulphide over time and can no longer be polished. Some of the silver has a still well-preserved and clearly visible coating (lead white with cinnabar). In ultraviolet light, traces of design by other coatings are clearly visible. Such coatings can also be partially detected analytically. All in all, there was probably an unbelievable interplay of high-gloss silver overlaid with matt lead-white painting and lustring with very fine differentiation in terms of colour.

¹¹ Guetg M., Journalist, Zürich, Ein Gespräch mit Peter Zumthor, publiziert in der Zeitschrift Heimatschutz/Patrimoine 3/2018.

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