San Baudelio de Berlanga

An Architectural Jewel Remade

FACTVM FOVNDATION

FACTUM **arte**

CONTENTS

San Baudelio de Berlanga
An Architectural Jewel Remade

'Upon the entering this exceptional building, it created such a great impression that neither I, nor my companions, ever remembered seeing anything similar.'

Manuel Aníbal Álvarez and José Ramón Mélida, 1907

INTRODUCTION

Factum Foundation for Digital Technology in Conservation, Madrid, is organising an innovative exhibition on the jewel-like monastic church of San Baudelio de Berlanga (Soria, Spain). Based upon forensically accurate, high-resolution 3D scanning, photographic recording and new historical research, the building and its dispersed mural paintings (removed in 1926) will be re-united in the form of a 1:1 physical recreation of the interior of the building. This replica will be fully visitable and will recreate an experience of the church in its original form. The exhibition will also explore new interpretations of the building and its enigmatic iconography, and new research about the sale of the paintings in America, including some now missing, and the restorations that have altered their appearance. Visitors in America (where most of the paintings reside) and Spain (where some of the paintings have been returned on loan and where the restored building still stands) will be able to experience the building for the first time in nearly a century as it was intended by the communities that built and decorated it. This exhibition aims to bring this under-valued masterpiece to a contemporary public by contemporary means.

In addition to providing an experience of this exceptional building, the principal objective of the exhibition is to provoke fresh discussion. The exhibition will reflect upon issues of ethics and practices in conservation and the custodianship of art, within and outside of the museum setting, issues that are both historical and relevant to our times as neglect, mass tourism, looting, armed conflict and willful iconoclasm continue to threaten the preservation of historical sites and works of art. The exhibition will also illustrate the value of digital technology for the study and monitoring of the condition of works of art and architecture, and for insuring that articulate works of art can continue to communicate clearly.

The exhibition is curated by Dr. Heather Ecker, while the replica will be made by Factum Arte for the Factum Foundation.

San Baudelio, Southern façade (Juan CabréAguiló, ca. 1920)

San Baudelio de Berlanga is an isolated, rural sanctuary that predates the village of Casillas de Berlanga, two kilometres to the northwest. Long thought to be built by a Mozarabic community during the late tenth or early eleventh centuries, its date of foundation and patronage are still debated.[1] It has been a source of fascination since its re-discovery in 1884 when a short notice by local writer Elías Romera Almazán was presented to the Spanish Royal Academy of History.[2] At that time, the so-called Hermitage of San Baudelio was believed by the villagers to have been the refuge of the eponymous St. Baudilus. Documentary evidence and excavations of an adjacent cemetery indicate that it was part of a small, monastic complex.[3] In 1907, a more rotund description was published with photographs by Spanish architect Manuel Aníbal Álvarez Amoroso and archaeologist José Ramón Mélida Alinari.[4] What impressed them most was the contrast between the sanctuary's simple exterior, marked only by an elegant, horseshoe-arched entrance, and its extraordinarily colourful interior: Nearly all of its vertical and vaulted surfaces were covered with vibrant paintings.

---

1. *Mozarabs*, Arabic-speaking Christians who observed the Visigothic rite; see Milagros Guardia Pons, *San Baudelio de Berlanga, una encrucijada*. Barcelona: Universitat de Barcelona *et alia*, 2011, (MemoriaArtium, 10), pp. 67-83.

2. "Acuerdos y discusiones de la Academia (Noticias)," *Boletín de la Real Academia de la Historia*, vol. 5, num. 6 (December, 1884), pp. 331- 32.

3. See Marta Poza Yagüe, "San Baudelio de Berlanga, cien años después. Balance historiográfico y nuevas interpretaciones," *Goya*, no. 322 (2008), pp. 3-22; The earliest documentary evidence for the presence of this monastic community is an administrative note written in about 1135 by Cardinal Guido that determined the borders of the dioceses of the towns of Osma, Sigüenza and Tarazona, as well as the income-earning properties pertaining to the cathedral church of each (*Berlangam cum omnibus terminissuis et cum monasteriosanctiBauduli…*). See T. Minguella y Arnedo, *Historia de la Diócesis de Sigiienza y de sus obispos,* Madrid, 1919, vol. I, doc. X, p. 358). These distributions were confirmed by Alfonso VII in 1136 (*Ibid*. doc. XI, pp. 359-60) and by pope Innocent II in a papal bull dictated in 1138 (Ibid. doc. XIV, pp. 362-64). In 1144, Don Bernardo, Bishop of Sigüenza, donated the monastery with all of its properties as income to the recently constructed cathedral chapter of Sigüenza (*MonasteriumnichilominussanctiBauduli, quod circa berlangamsitumest, varisusibus cum omnibus pertinentiissuis habendum concedo…*) (*Ibid*. doc. XXIII, pp. 375-377); J. Andrio Gonzalo and E. Loyola Perea, "Necr6polis medieval de San Baudelio de Casillas de Berlanga", en Actas del II Symposium de Arqueología Soriana. Homenaqe a D. TeogenesOrtego y Frías (October 19-21, 1989), Soria, 1992, t.II, pp. 1069-86; Milgros Guardia Pons, *San Baudelio,* pp. 438-39.

4. Manuel Aníbal Alvaréz and José Ramón Mélida, " Un monument desconocido: La Ermita de San Baudelio en término de Casillas de Beranga (provincial de Soria)," *Boletín de la Sociedad Española de Excursiones*, vol. 15 (1907), pp. 144-55.

Álvarez and Mélida's account of this "most valuable jewel of national art" was intended to offer support to the petition already made to both the Royal Academy of History and the Royal Academy of Fine Arts of San Fernando to declare it a National Monument, and thus bring it under the protection and custodianship of the State. Although San Baudelio was so declared by royal order of Alfonso XIII in 1917, efforts to preserve the building were frustrated by a long chain of events that culminated in 1926 with the legal sale of its mural paintings by the local owners in Casillas de Berlanga. The buyer was Leone Leví, a possibly Italian art dealer resident in Barcelona, who worked as an agent for Gabriel Dereppe and his business partner, Ignace George Pollak. Dereppe and Pollak were canvas mid-level art dealers based in Paris, who had dealt in both Spanish and Italian frescoes before.[5] Significantly, Dereppe and Pollak were instrumental to the sale of the frescoes from the apse of Santa Maria de Mur (Lérida) to the Museum of Fine Arts, Boston in 1921.[6]

In July 1926, twenty-four mural paintings were removed from the walls of San Baudelio by an Italian team employed by Leví using the *strapatto* method. The paintings were rolled and taken to London, where they were mounted onto canvas and enclosed in wooden frames. In February 1927, Gabriel Dereppe brought twenty-three of the paintings to New York. The twenty-fourth painting, the icon of St. Baudilus, was stripped from the chapel and presumably removed by Leví. It was not included amongst the paintings brought to New York by Dereppe, and its location is unknown.

It is not surprising, given the cordial relationship with Boston, that Dereppe should offer the murals from San Baudelio to the Museum of Fine Arts first. The response was positive and the Museum hoped to acquire all of the paintings, but could not raise the funds initially. Dereppe's price—,$422,500 for all—twenty-three, was too high for most institutions. By November, Bos-

---

5. Although Pollak and Dereppe worked as scouts for the major art dealers of the period—Georges Demotte, Jacques Seligmann, and Sir Joseph Duveen—their purchase of the paintings from San Baudelio seems to have been an independent, and slightly inept, undertaking. Pollak, the senior partner, was a man of some complexity. Born in Salzburg in about 1879 and resident in France, he acquired a diplomatic passport from the Republic of San Marino perhaps as a form of insurance. He was appointed Envoy Extraordinary to the States of North America for San Marino in 1924, though what this meant is not clear. He had a gallery in Paris from 1910 into the late 1920s at 57 Rue Pigalle, which he appears to have shared with Gabriel Dereppe. Much younger, Dereppe was neither an American nor a collector as he is sometimes called in the secondary literature, though he appears to have spent a considerable amount of time in New York. Like many art dealers in his day, he used rooms at various hotels, including the Heckscher (now Crown) building, where he showed the paintings from San Baudelio. Pollak and Dereppe were responsible for selling some major Spanish works of art including the elements of the funerary monument of Sancho Sánchez de Mazuelo or Carrillo and his wife Juana, dating to 1295-1318, from the Hermitage of San Andrés de Mahamud in the diocese of Burgos. The Catalan collector, Lluís Plandiura y Pou, probably a business partner of Pollak and Dereppe, and a figure who has come under considerable criticism lately, acquired eight of the Gothic paintings on parchment and wood in 1915, later selling them with the rest of his collection to the National Art Museum of Cataluña. The accompanying wooden tomb effigy of don Sancho was acquired by the Cincinnati Museum of Art as a gift in 1958.
6. Museum of Fine Arts, Boston acc. no. 21.1285. The frescoes from this twelfth-century church were sold in 1919 by the rector to Ignace Pollak, who sold them to Lluís Plandiura y Pou. Plandiura re-sold them to the MFA Boston through Rafael J. Bosch with the assistance of Gabriel Dereppe. In 1919, when still a curator in the department of medieval art at the National Art Museum of Cataluña, Joaquim Folchi Torres, met with Pollak and Dereppe at the Hotel Regina in Barcelona and tried to buy the frescoes, but was told that they had already been sold. Later, as Director of the Museum, he tried to acquire the paintings from San Baudelio, also without success. See Mercè Vidal i Jansà, *Teoria i Crítica en el Noucentisme: Joaquim Folch i Torres*. Barcelona: Publicacions de l'Abadia de Montserrat, 1991, pp. 233-35; Elías Terés Navarro, "El expolio de las pinturas murales de la ermita mozárabe de San Baudelio de Berlanga, *Goya* no.319/320 (2007), p. 201.

ton was able to raise the funds to acquire two paintings and a border fragment. The new acquisition was met with enthusiasm, and the paintings were published first by the museum's Assistant Director, Charles H. Hawes in 1928, and then again by Walter Cook in 1930.[7]

Despite his early confidence, Dereppe was not able to sell the remaining twenty paintings, and instead, sent them on a series of exhibitions: The Century Club, New York (1937), The Toledo Museum of Art (1941), The Museum of Art, Rhode Island School of Design (1948), Miami (place and year unknown) and Indianapolis (place and year unknown).[8] In 1957, James Rorimer, Director of the Metropolitan Museum of Art, acquired six of the remaining paintings to exchange with the Spanish government as a mutual, permanent loan for the apse of the Church of San Martín from Fuentidueña, rebuilt at The Cloisters. These six paintings now hang in the MuseoNacional de Prado, Madrid.

While a newspaper article from the period claimed that the paintings had been held in a warehouse since the 1921, the chain of ownership was more complex.[9] They had been acquired corporately by two collectors in Indianapolis, George Henry Alexander Clowes (d. 1958) and Elijah B. Martindale (d. 1967), presumably after their exhibition in Indianapolis by Dereppe.[10] Rorimer appears to have acquired the six paintings for the exchange from Clowes and Martindale directly. Of the remaining fourteen paintings, three were given to the Metropolitan Museum between 1959 and 1961, two were given to the Indianapolis Museum of Art in 1957-58, and five were given to Cincinnati Art Museum (1962 and earlier). The locations of four of the paintings sold by Dereppe are now unknown.

---

7. C[harles] H. H[awes], "Two twelfth century frescoes from the hermitage church of San Baudelio de Berlanga, Spain," *Bulletin of the Museum of Fine Arts*, XXVI (Feb. 1928), pp. 6-11: "To sum up, viewed as decorations conveyinga moral truth, there is a grandeur of composition and a fine sense of the decorativein these two frescoes, which undoubtedly rank among the most important recent acquisitions of the Museum"; Walter W. S. Cook, "Romanesque Spanish Mural Painting (II) San Baudelio de Berlanga," *The Art Bulletin*, vol. 12, no. 1 (1930), pp. 20-42. Cook had encouraged the acquisition of the paintings from the start.

8. The display in Toledo was part of an exhibition entitled *Survey of Spanish Painting from the Twelfth Century to Goya*, where the remounted paintings were "installed in a full-scale reconstruction of the vaulted interior of the chapel," See the review of the show in Toledo in *Parnassus*, vol. 13, no. 4 (April 1941), pp. 147-50. While that installation may have been fanciful, it still marked a desire to re-establish or re-build San Baudelio in America, an impulse that went back to the early negotiations with museums in 1927.

9. Sanka Knox, "Art Museum Acquires 12th-Century Spanish Apse in Exchange for Spanish Frescoes; Cloisters to Build New 'Church' Showing 3,300 Parts of Old One," *New York Times*, February 20, 1958; The Indianapolis chapter of the paintings from San Baudelio is still enveloped in a certain amount of mist. See Milagros Guardia,pp. 44-45.

10. G.H.A Clowes was a distinguished biochemist and director of research at Eli Lilly and Co. His wife, Edith Whitehill Clowes (d. 1967), was a patron of the arts in Indianapolis, and together they had formed an important collection of Old Master paintings, which became a foundational gift to the Indianapolis Museum of Art. E.B. Martindale was also a collector and patron of the John Herron Art Institute, later the Indianapolis Museum of Art. Clowes and Martindale appeared to have acquired the paintings from San Baudelio with a different exchange with the Prado in mind. They offered the fragments for two works by Velázquez, a deal that was rejected. See Milagros Guardia, *ibid*.

San Baudelio from the North-East (Factum Foundation, 2012)

Historical Context

San Baudelio now stands alone in a visually concealed position in a vast agricultural landscape. But farming had little to do with its foundational context. San Baudelio was built along what was a Roman trade route from Southern France through Soria that brought travellers, merchants and devotion to the cult of St. Baudilus, an early Christian martyred at Nîmes. Divided naturally by the Duero River along a nearly East-West axis, Soria was a frontier zone contested throughout the tenth century by the Christian and Muslim political powers that divided the Peninsula. While the date of San Baudelio's foundation is not documented and still much debated, it may have been as early as the second half of the tenth century, evinced by the structure of the adjoining cemetery and the orotund grandeur of its ribbed dome, influenced by architectural developments in Umayyad Córdoba, or roughly a century later, a view supported by various scholars.[11]

Uncertain sovereignty may have meant that the monks who built San Baudelio adopted a protective attitude proper to its vulnerabilities: siting the church on a foundation of stone near to a natural spring, selecting a hillock that conceals the building from the main thoroughfare, and excavating a subterranean cave with an entrance within the church. As the political contretemps made the roads unsafe, the monastery may have also served as a secure way station for travellers. Political instability also favoured depopulation, and in this sense, San Baudelio's later importance may have derived from its previous isolation. Depopulation along the frontier must have also favoured the growth of trees and wildlife in the area, and increased its importance as a hunting ground, one of the major themes of the frescos paintings added in the early twelfth century.

---

11. Preliminary C-14 dating of a wooden scaffolding pin removed during a campaign of restoration in the 1990s suggested a date between 1050 and 1075. This was calibrated with a dendrochronological approach. This kind of study is a step in the right direction, though the margin of error here is too low. See Matthias Fernán Alonso, Luis Caballero Zoreda, and Eduardo Rodríguez Trobajo, "Cronología constructiva de la iglesia mozárabe de S. Baudelio de Berlanga (Soria): Primeros resultados de dendrocronología y carbono-14," *Boletín de Arqueología Medieval*, vol. 11 (1997), pp. 249-263; See, too, Milagros Guardia.
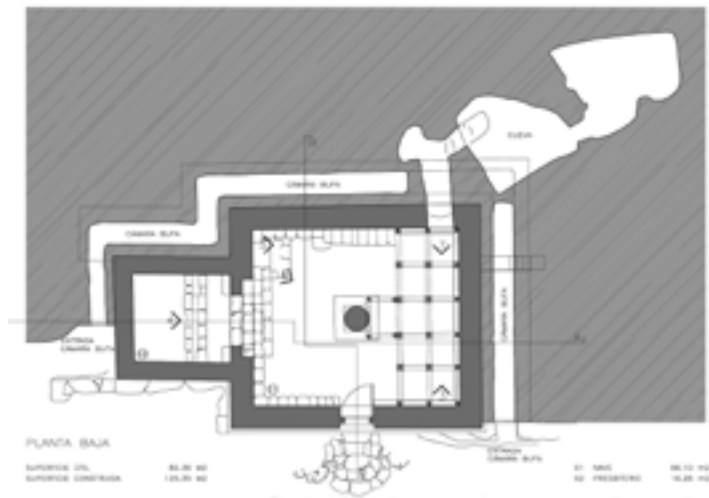
San Baudelio, Floor Plan (Franciso Javier CeñaJodra, 2012)
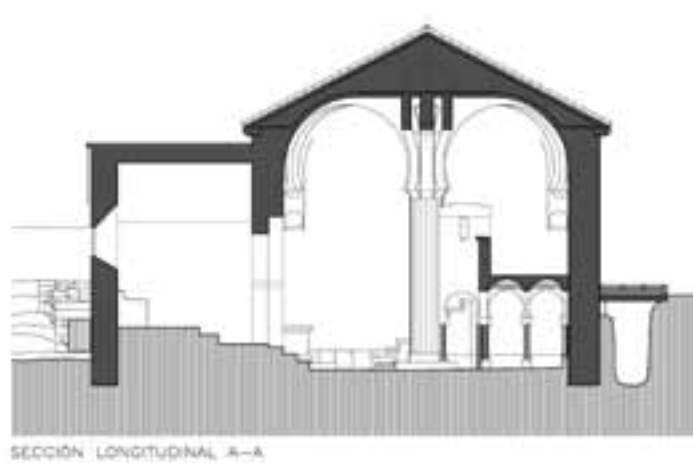
San Baudelio, Longitudinal elevation (Francisco Javier CeñaJodra, 1912)

By this time, the political struggles over the Duero had abated in favour of the rulers of the dual kingdom of Castile and León. The conquered lands on both side of the Duero were subjected to fiscal and administrative reorganizations, including of ecclesiastical properties.[12] Alfonso VI's promotion of Cluniac norms over the autochthonous Mozarabic customs and rites were intensified by his successors, who favoured Cistercian institutions and supported the implantation of the military orders from Palestine, the Hospitallers, the Templars, and later the Order of Calatrava. The paintings added to San Baudelio seem to provide evidence that this rural, ecclesiastical establishment, once an oasis of security in an unstable region, was being pushed from its Mozarabic roots towards the norms of the Roman church. And yet, the hybridity of its murals suggest that local customs and poetics were impossible to repress.

---

12. In this sense, q.v. fn 1.

Ribbed dome, Great Mosque of Córdoba, 960s

San Baudelio is constructed of two adjacent cubical structures built of local masonry: a small chapel with an altar and a principal chamber that may precede it chronologically—it houses a vestigial altar on the South side of the East wall. The principal chamber is built directly onto a floor of roughly hewn stone, while the chapel is elevated onto a dressed stone floor by six steps. The chapel is covered by a simple barrel vault, while the ceiling of the principal chamber is formed by a simulated eight-ribbed dome supported by a palm tree-like column built of stone blocks, itself surmounted by a secondary, ribbed lantern dome. The radiating ribs that seem to emerge from the column give a spectacular and unique aspect, and creating a structure that is intermediate to a dome and a vault. But, there is no springing of the dome or squinch to unite circle and square; rather the ribs guide the eye optically through a smooth transition. It is as if the monks who built San Baudelio were trying to imitate a ceiling they had seen but did not structurally understand.

Of all his public works, the Umayyad caliph al-Hakam II (r. 961-976) is best known for his patronage of the resplendent third extension of the *qibla* wall of the Great Mosque of Córdoba, which is ennobled with three, magnificent, ribbed domes, designed by Iraqi architects brought from abroad. These ribbed domes were echoed elsewhere in the Peninsula in the late tenth through thirteenth centuries, particularly in Toledo in both Muslim and Christian spheres. But rather than from Córdoba itself, inspiration for San Baudelio's ribbed vaulting may have come from the nearby citadel at Gormaz on the opposite side of the River Duero, commissioned by al-Hakam II and nearly contemporary with his works in Córdoba. Judging by the finely dressed stones of the elegant, double-arched entrance gates of this fortress, as well as its impressive size, al-Hakam II must have sent skilled builders from Córdoba to this long contested, frontier region. The extent of their efforts remains unknown as only the perimeter wall with its gates survive, but it seems likely that the interior buildings at Gormaz, such as the oratory, were constructed with the latest techniques including ribbed domes.

The structural accommodation of the vaulted ceiling of the main chamber seems to point to the novelty of the technique of ribbed stone dome construction in the Peninsula. Around the year 1000, competent ribbed domes were constructed elsewhere; the classic example is the Mosque of Bab al-

San Baudelio, Cave entrance.

Mardum (Cristo de la Luz) in Toledo, ca. 999. The innovative compromise of a median column at San Baudelio may indicate an early date, for at least its principal chamber. Like the much grander Mozarabic monastery of San Miguel de Escalada established in the province of León in the early 950s, San Baudelio could have been founded in the 970s in the short period when Ramiro III of León gained control of the Duero region. Another opportunity for its foundation may have been under Fernando I, ruler of Castile and León (r. 1037-65) who captured the fortress of Gormaz, Berlanga and Vadorrey around 1060. Milagros Guardia has argued that San Baudelio could have only been built under the reign of Alfonso VI, between 1075-1100. These issues cannot be settled here, but will be explored fully through the exhibition and subsequent discussions. Whatever the date of its foundation, rather than to Castile or León, San Baudelio's prominent aesthetic tribute points to the cultural prestige of Córdoba in the tenth century and its exemplary elegance, quite apart from any political concerns.[13]

Behind the median column, an upper gallery (also called a choir or tribune) is supported by eight small, vaulted bays and a narrow, irregular stone staircase. These bays, sustained by rough cylindrical monoliths resting on high bases without capitals, are cut in the shape of horseshoe arches, and like the ribbed dome, also reflect a Córdoban aesthetic that is adaptive and not purely mimetic.[14]

13. Spanish historian Manuel Gómez-Moreno's comments, from nearly a century ago, are incisive in this regard (translation H. Ecker): "To cover the nave of this church with a vault, given its width and such poor construction, it was essential that a unique solution should enter *a priori* into the calculations of the builder, as not even Carolingian boldness would have sufficed without the luxury of unlikely materials to solve the problem according to classical principles. In Córdoba, the apogee of the caliphate opened new and more fruitful avenues for light and elegant vaulting. Still, to produce Córdoban domes of that size was a thing truly for an architectural giant. The builder of our poor church had to provide a more precarious solution, but praiseworthy *sui generis*. It seems as if the terms of the problem were these: Raise domes to double height like those of San Millán de Suso, with an unsurpassed baseness of means." Manuel Gómez-Moreno, *Iglesias mozárabes. Arte español de los siglos IX a XI* (Madrid, 1919), p. 312.

14. Although these groupings of bays with low columns and horseshoe arches seem "mosque-like" to the modern mind (L. Torres Balbás, Jerrilyn Dodds and others) there is no question that they ever functioned as part of a mosque, or signified an allegiance with Islam. For example, the same kind of arches on low columns iconically represent the seven Churches of the Apocalypse in the illustrated Beatus of Liébana (The Morgan Library, MS M.644 fol. 27r). The complex hermeneutics of the visual language of San Baudelio still requires thought—its references to Córdoban, or Toledan, architecture may point to the origins of this liturgical community in Córdoba, or Toledo, for example, or may simply draw from an elegant, regional style, as suggested above.

San Baudelio (Soria), Chapel (Factum Arte, 2012)

San Baudelio Chapel murals, Cincinnati Art Museum.

Under the vaulted gallery, an opening in the south wall leads to a series of two, man-made subterranean caves probably used for storage and concealment, rather than the habitation of an anchorite as was once thought. San Baudelio is hardly a dark refuge and for a building that has only two small doors and two narrow windows, it is remarkably filled with light. Still, despite their practical intention, the caves may have borne some kind of symbolic feeling of asylum, like the adjacent graveyard excavated by hand from the same stone. It is hard to imagine that in a small building so redolent with symbolic images, each element did not signify something to the monks that built it.

Early photographs of San Baudelio show that the paintings in the highest registers and lowest dados were already damaged before 1920, some of them irretrievably. Not all of these cycles bear a close relationship, and they may not all be contemporary—for example, above the small altar on the tribune is an Adoration scene that reflects a Gothic sensibility and must be later than the dispersed compositions that are better known. Other paintings still raise questions. At the entrance, the visitor is confronted by two almost lifesize paintings of bareheaded men armed with spears and round shields against a bright,

San Baudelio, The Last Supper (Museum of Fine Arts, Boston, acc. no. 27.785a).

San Baudelio, Christ heals the blind man and raises Lazarus (Metropolitan Museum of Art, acc. no. 59.196.

white ground—are they hunters? Or are they apotropaic military saints, menacing those who may not belong? The chapel, to the left of the entrance, is adorned with portraits of the eponymous St. Baudilus, St. Nicholas and a large ibis over the altar. In a register above, two inclined figures, too damaged to identify, flank the Lamb of God. The importance of the ibis is reinforced by its repetition in compartments in the soffit of the arched entrance. An unusual ecclesiastical symbol though prominent motif, the ibis may reflect a secular, literary theme such as Ovid's poem the *Ibis*, where the enemy is subjected to a litany of ancient torments—not an entirely surprising choice in a literate, frontier society.

The principal paintings of the upper registers are products of an elegant, cosmopolitan tradition usually subsumed under the category of 'Romanesque'. These include a cycle of large-format paintings of the Life of Christ that winds its way throughout the whole structure. Other motifs on elements of the ribbed dome include columns, domed structures perhaps an illusion to Jerusalem, hunting dogs and scrolling vines in a Byzantine mode. The masters who painted these images—regional, but not strictly local—must have sourced their selections from picture books that they carried with them.[15] The principal collection of images of the Life of Christ would have been Carolingian with a strong Byzantine basis.

---

15. See Milagros Guardia, pp. 206-13.

San Baudelio, Festooned Andalusi silk textile (H. Ecker, 2014).

The lower dado of the principal chamber, the staircase, and part of the gallery are arrayed with representations of festooned, Andalusi silk textiles, adding an impression of tented richness. The textiles are designed with compartmented rosettes, each filled with a lion, mythical creature or bird. In addition to luxury, such patterns reference the hunt, a major theme of the paintings with a solid ground on the middle register in the principal chamber. Here, single animals including elephants, bulls, a bear, a camel and scenes of hunting with falcons and dogs provide a non-narrative, but surely meaningful panorama. Some of these scenes are derived from visual motifs from the Islamic world, though not necessarily from al-Andalus. Others must follow visual cues that echo in the contemporary illustrated commentaries on the Apocalypse, where horned bulls represent false prophets, and bears, the Medes and Persians. They may be based on the designs of textiles or line drawings derived from illustrated Islamic manuscripts or sketchbooks. The flat aspect of the animal painting suggests that their sources lacked much internal articulation and may have been simple sketches. Contemporary line drawings of this type have been found at Fustat, Cairo, for example (see figure below).

Seemingly secular, there is an engagement with sacred poetics here. Mozarabic book painting is at once conservative, maintaining antique traditions from Rome and Sasanian Iran, and innovative in its borrowing from al-Andalus to inscribe a messianic messages of redemption. This cycle of paintings seems to be faithful to a local impulse despite apparently cosmopolitan aspirations. Perhaps the paintings indicate that with the land reforms of the post-conquest period, San Baudelio has come under seigneurial control. Or perhaps, by bringing them into the church, the painting are intended to extend ecclesiastical or supernatural protection to the rich hunting grounds, emphasized by paintings of hunting dogs and hunting scenes, concentrated by the long, human abandonment.

San Baudelio, Camel (Metropolitan Museum of Art, acc. no. 61.219).

San Baudelio, Military Saint (MuseoNacional del Prado, acc. no. P07266).

San Baudelio, Bear (MuseoNacional del Prado, acc. no. P07263).

A comparison of Juan Cabré's photograph of the Falconer *in situ* in 1920 with the painting now on view at the Cincinnati Art Museum shows that the upper part of the painting was damaged and has been substantially re-worked, probably in London in 1926 for the dealer Gabriel Dereppe. Infrared photography and other digital techniques may be applied to determine what remains of the original fresco painting.

San Baudelio, Falconer (Cincinnati Art Museum, acc. no. 1962.594).

Falconer, Fustat (Cairo), 11th-12th century, ink on paper (Keir Collection).

New research plays a principal role in the development of the exhibition. Some of the paintings, particularly those in the cycle derived from the Islamic repertoire, have been extensively over-painted, presumably to compensate for damage when they were removed and to frame them more appealingly as single images for the art market.[16] A new appraisal and collective study of all of the these eclectic and enigmatic images, dispersed and *in situ*, will be undertaken as part of this exhibition project supported by the highly detailed digital scans. The scans and photographs made by Factum Foundation will be shared with the responsible curatorial and conservation departments at each institution that owns the paintings, and we hope that our museum colleagues at these institutions will engage with us in the research process, sharing documentation and results of cleaning and conservation treatments. These enquiries will reveal much in regard to the materials and techniques used to create the paintings in the 12th century, and their recent history. When possible and useful, the project may also include other techniques to study original surfaces and colours, such as infrared photography or x-radiography, according to the capacities of each home institution.

---

16. See, too, Milagros Guardia, pp. 222-25.

While San Baudelio still stands, it has been heavily restored and bears only a shadow of its former wall paintings.[17] Likewise, the dispersed paintings have been remounted on canvas, and their variegated plaster surfaces flattened and restored, sometimes in unsympathetic ways. The 'original' monument, as such, no longer exists. The visual and artistic practice of detailed digital restoration and replication represents a unique avenue to a better understanding of monuments that are no longer visually articulate. The resulting replica, both digital and in 3D, will provide an unparalleled visual and spatial experience of the monument and the technological approach taken will also show how non-contact digital conservation can nurture a deeper understanding of the fragility of the past and its inevitable transformation.[18]

The replica of San Baudelio, the centrepiece of the exhibition, will be designed as a complete, stand-alone self-supporting structure. It will be constructed modularly, so that it can be easily installed and dismantled in different museum gallery contexts. Each portion of the building, including the central column, the ribbed vaulting, the chapel and the gallery or tribune itself will be recreated as structural elements in the facsimile, but it will be designed so that no evidence of these structures are visible: the facsimile will look exactly like the original. Because of its large size, each museum space in which it is shown will suggest certain compromises and bespoke solutions in terms of visitor entry, exit and circulation. Some solutions, however, will be universal to all of the installations. Exhibition circulation and flow will be a central part of the exhibition design and we will ensure that visitors have access to the extraordinary paintings on the raised balcony area, either by stair or by an elevator platform at the rear of the replica structure where an exterior door exists in the church. The dimensions of the replica with scaffolding and lift will be approximately 833 x 1600 x 830 cm, with an estimated weight of 6,250 Kg, and thus it will weigh approximately 90 kg/m².

In order to provide visitors with direct experience of the monument, as well as a point of comparison with the replica, it is desirable that some extant panels removed from San Baudelio are shown at each venue. It will be cost effective for those institutions that own paintings from San Baudelio to show them as representative examples. If the exhibition goes to a venue that does not own paintings from San Baudelio, an alternative solution can be found. Detailed photographs of all of the panels will be included in the catalogue.

As this is principally a show about architecture and conservation, we do not feel that it is necessary to include other types of objects to provide context. Rather, text panels with historical photographs will guide the visitor through the monument and its geographical and historical contexts,

---

14. See Margarita González Pascual, "San Baudelio de Berlanga (Soria): la reposición de las pinturas murales de la "palmera"," *Bienes-culturales: Revista del Instituto del Patrimonio Histórico Español*, no. 6, (2006), pp. 77-98.

15. It should be noted that an interpretive centre was installed in a restored abattoir in Berlanga de Duero that contains some digital approximations of the original appearance of the paintings from San Baudelio. This was an incomplete and underfunded local project, not based upon detailed 3D scans, nor upon high level digital photographs. Unfortunately, the project is not faithful to the building and its painted surfaces, but has followed a 'theme park' attempt to repaint the interior. Factum Foundation's very different approach will produce an in-depth study of this complex and articulate building.

San Baudelio (Juan Cabré Aguiló, ca. 1920).

whilelarge-format landscape photography will illustrate the dramatic, geographical setting of the countryside in Soria. A film will narrate the prosopography, biography and digital restoration of the Hermitage. A dedicated website, accessible in the exhibition will offer further details on the process of digitization in the form of a narrative clips and documentary photographs. An illustrated exhibition catalogue will include historical photographs of the building, detailed photographs of the dispersed panels and present state of the building,and a series of essays, some commissioned, that offer new perspectives on San Baudelio and its historical and historiographical, ecclesiastical, artistic and cultural contexts.

The exhibition and its catalogue will also address and reflect upon fundamental questions about custodianship, care and the protection of cultural heritage, ethics and practices. Strategies for the preservation of art have shifted—it is unusual at present for works of art to be removed from their original contexts with the argument of safeguarding their integrity as they were in the early 20th century. With increasing global violence, environmental warming and pollutants, there are still significant arguments to make on both sides of this fundamental issue. War, looting, and iconoclasm are perhaps more of a threat now than in the past, and these pressures can shift thinking in troubled times. Would it have been possible to save the stone Buddhas of Bamiyan by purchasing them? Or to disperse the contents of the libraries at Mosul, which have now been burned? There are many contemporary scenarios that can offer sage perspectives in this regard. A round-table discussion, or symposium, on these issues could be brought into the web-based exhibition materials.

Spanish archaeologist Juan Cabré Aguiló's photographs of San Baudelio, taken between 1916 and 1919 for the still unpublished *Catálogo Monumental de la Provincia de Soria* provide eloquent evidence of the dilapidated state of the paintings at the church. When it was discovered in 1884, it had long been deconsecrated and used as a sheep pen. The plaster was peeling, and holes had been punched into the gallery balcony. The justification for removing the paintings is fairly evident. And yet, the paintings were not removed to a public institution, but sold for profit by the villagers who knew them, and arguably, loved them best. The corruption of the political dictatorship of the era was certainly contributory to the legal decision that allowed it. In London under Pollak and Dereppe's care, the paintings were mounted onto canvas and 'restored' like oil paintings.[19] Their pictorial aspect was mainly preserved, but without any of the original surface topography. Still, had the paintings remained *in situ*, they might have suffered more damage during the Spanish Civil War, Franco's dictatorship, the application of well-intentioned but damaging conservation techniques, and general vandalism.

These are complicated but important ethical issues. In this case, the legality of the removal of the paintings is not in question, nor the current ownership. It is hoped that this underlying parameter will encourage a free discussion of strategies of architectural preservation in relation to San Baudelio and other buildings under threat.

---

19. See Charles H. Hawes, "Two twelfth century frescoes," p. 11: "Finally the frescoes were stretched on stretchers like any other canvas painting."

The north west corner of the facsimile of the Burial chamber of Tutankhamun made by Factum Arte, Factum Foundation and the Friends of the Royal tombs of Egypt. It was installed on a site next to Howard Carter's house at the entrance to the Valley of the Kings in 2014.

Factum Arte

Artists and institutions increasingly require a new type of mediation to transform ideas into physical realities. Factum Arte is an atelier and an incubator of creative ideas, founded by British artist Adam Lowe in 2001, that is dedicated to digital mediation and the production of works in two and three dimensions for contemporary artists, museums and special projects. The team at Factum Arte's ateliers in Madrid, Milan and Bologna includes artists, engineers, software-writers, craftsmen, conservators and technicians devoted to masterminding artistic projects and finding solutions to their unique challenges. These activities have resulted in ground-breaking works of art.

The work carried out by Factum Arte is inherently original and diverse. It ranges from three-dimensional facsimiles for major conservation projects (on which it works with Factum Foundation) to archival print editions, vast bronze and stainless steel sculptures or concrete 'prints'—in fact, anything involving sensitivity to, and a practical understanding of, the transformation, mediation and manipulation of data. At Factum Arte, the development and application of new technologies goes hand in hand with high levels of craftsmanship and manual skills at every stage of the process. Factum Arte always works to the highest standards required by both the commercial art world and museum communities in which matters of conservation and archival permanence are of paramount importance.

Factum Arte has been engaged for some time in developing digital technology to create high-definition replicas. Such facsimiles, employing elegant systems of 3D and photographic replication and

construction, have been created for a number of exhibition projects including a travelling show on the burial chamber of Pharaoh Thutmosis III. That replica was built in 2002 for an exhibition at the National Gallery in Washington organized by United Exhibits Group of Denmark and the Egyptian Supreme Council of Antiquities (now the Ministry of Antiquities). It travelled to eight American venues, while a second facsimile built in conjunction with the Museo Arqueológico Nacional in Madrid toured Europe with works of art from the Antikenmuseum, Basel, and the Egyptian Collection at the Kestner Museum, Hanover.

In 2014, Factum Arte employed a similar approach, much refined, to create the permanently installed, underground, visitable 1:1 replica of Tutankhamun's tomb in Luxor as the first stage of a much larger project in the Valley of the Kings. This re-creation of one of the world's best-known antiquities was designed to open a debate to "rethink our relationship with the sites that define us through our shared past," according to Factum's founding director Adam Lowe. Dr. SalimaIkram, Professor of Egyptology at the American University in Cairo, who was moved to tears when she entered the replica on the day of the opening, said, "It was like going into the original itself, but with everything better explained." A half-hour documentary on the Tutankhamun project by the BBC, produced by Joanne Whalley, noted how the 3D process replicated the cracks and undulations in the surface of the original. RajanDatar, the show's presenter, continued, "The quality of the work at the tomb is astonishing. When they recorded the information from the original tomb, they recorded 100 million points of information per square metre with a laser scanner. That is state-of-the-art stuff." He went on to say, "This is the future of cultural tourism. During the past hundred years, many antiquities have ben exposed to too much human presence and unless that is restricted, they are going to collapse completely."[20]

Factum Arte has also sought to develop techniques, based upon both high technology and traditional artistic practices, to create works of art that are now lost, or conceived but never made. Along these lines was the realisation of eight complex objects using traditional and digital modelling from the original designs by Giambattista Piranesi for an installation, *The Arts of Piranesi. Architect, etcher, antiquarian, vedutista, designer*, created for the Venice Architectural Biennale of 2010. This show was co-produced with the Fondazione Giorgio Cini in Venice, and co-curated by Adam Lowe, the architect Michele de Lucchi and Prof. Guiseppe Pavanello. The exhibition included a 12 minute, animated performance of Piranesi's *Carceri d'Invenzione*(fantastical prison etchings) celebrating the potential of new technology, and the complexity of Piranesi's multi-layered vision. Each of the 16 prints, originally published in 1749, was transformed into a viscerally real space. The exhibition also included Gabriele Basilico's black and white photographs of the Vedute (fantastical views of Rome) and over 250 etchings by Piranesi. The exhibition travelled to Caixa Forum Madrid, Caixa Forum Barcelona,and the San Diego Museum of Art. It was reduced and reconceived by curator Jerzy Kierkuc-Bielinski as *Diverse Maniere: Piranesi, Fantasy and Excess* for an exhibition at the Sir John Soane's Museum, London, in 2014.

At present, Factum Arte is engaged with many documentation and non-contact conservation projects including the re-unification of the dispersed altarpiece, the Polittico Griffoni, the completion

---

20. *The Independent*, London, May 5, 2014.

of a layered archive based on recordings of Goya's 'Black Paintings' at the Prado, the preparation of an exhibition of single manuscript folios for the Fondazione Giorgio Cini, the installation of a training centre for 3D scanning in Luxor, the production of facsimiles of works removed from Strawberry Hill House, London, and further high-resolution documentation of Leonardo's Last Supper at the Santa Maria della Grazie, Milan.

Factum Foundation for Digital Technology in Conservation

The Factum Foundation for Digital Technology in Conservation is a registered Spanish Foundation (Fundación de Tecnología Digital para la Conservación) dedicated to the development of high-resolution digital recording techniques and the creation of exact facsimiles as part of a coherent approach to the preservation of major heritage sites. It is founded on the idea that the application of digital technology to preservation challenges has the potential to radically change the management

of our cultural heritage as well as to encourage sustainable tourism. In 2014, Apollo Magazine awarded Factum Foundation the *Apollo Award for Digital Innovation of the Year*.[21]

Terms like high-resolution documentation and gigabyte resolution are now often used without a clear understanding of what this means in practice. In 3D scanning, high resolution can indicate area scanning at a resolution of 100 measured points/square meter or to accurate surface scanning with 100,000,000 measured points/square meter. In colour recording, confusion still exists between images that appear to be high resolution on a screen, and images that are can be printed at full size. The association of 'digital' with 'virtual' is at the root of these misunderstandings and still more confusion is provoked when 'digital' and 'physical' are used in the same sentence. While Factum Arte focuses on the way mediation and transformation condition the appearance of the physical object, the Foundation grew out of the realisation that a lack of communication and understanding is hampering the application of technology in conservation.

Factum Foundation's multiple aims are to fund the development of recording systems designed especially for use with cultural heritage including two dimensional recording systems, multi-spectral photography and three dimensional (3D) recording systems; to facilitate an understanding of the transformations and mediations involved in all forms of recording and output through academic and general publications; to reduce the costs of both hardware and software and ensure that high resolution recording systems, along with technical support and training, are available in the parts of the world where they are most needed; to clarify the role of physical facsimiles in conservation and to establish a code of good practice; to develop archiving and display systems as a user-friendly interface for high resolution data; to prepare exhibitions that develop the biography of both objects and sites; and finally, to help fund projects of cultural importance that are not self-financing.

Heather Ecker

Heather Ecker is an independent scholar and writer known for her innovative scholarship on medieval Spain. She is the founder of Viridian Projects, which is currently engaged with Factum Foundation on a number of projects. Previously, she worked as the Head of Curatorial Affairs at the Aga Khan Museum, Toronto, the Curator of Islamic Art and Department Head, The Arts of Asia and the Islamic World at the Detroit Institute of Arts and as Assistant Curator at the Museum of Islamic Art, Qatar. She received her Dphil in Islamic Art and Archaeology from the University of Oxford, and holds undergraduate degrees from Harvard University and the University of London. In 2003-4, she was the guest curator of *Caliphs and Kings: The Art and Influence of Islamic Spain. Selections from the Hispanic Society of America* at the Arthur M. Sackler Gallery and Freer Gallery of Art.

---

21. Read more about the award at: www.apollo-magazine.com/apollo-awards-digital-innovation-year.

Scanning with the Seti Scanner, Burial Chamber of Tutankhamun.

Around the world, monuments and artefacts are disintegrating: They are crumbling mechanically due to sheer weight of age. Light and environmental pollutants have taken their toll, while inexpensive means of travel has meant that mass tourism has caused the deterioration of delicate surfaces at an alarming rate. Worse: war, opportunism, vandalism, iconoclasm and diverse political narratives as well as out-and-out looting have destroyed crucial sites and museum collections in a very short time. More poignantly, well-intentioned conservation efforts have sometimes resulted in accelerated deterioration. Among preservationists—curators, conservators, architects, historians and artisans—there is still much debate about best practices. Attitudes have changed in many countries, and intervention is no longer championed as a matter of course; a simple limitation of exposure is often thought to be the best practice to preserve works for future generations.

Three-dimensional digital scanning comprises a non-destructive approach that is gaining fast acceptance among preservation specialists for the creation of permanently archived records of the surface and form of any work of art or architecture. High-resolution 3D data gathered with such accepted technologies is already transforming the way that cultural heritage is monitored and protected—such as recording the surfaces of paintings sent out on loan—while replicas derived from such 3D digital recordings made with rigorous attention to surface topography and colour can represent the way forward for buildings and works of art at high risk, or mutilated through selective stripping, as in the case of San Baudelio.

Public acceptance of ultra modern replicas that both illuminate and reduce pressure on original monuments has been growing since the creation of Lascaux II, a facsimile of the Lascaux Caves in Southwestern France. The Lascaux caves represent one of the most remarkable, but fragile, re-
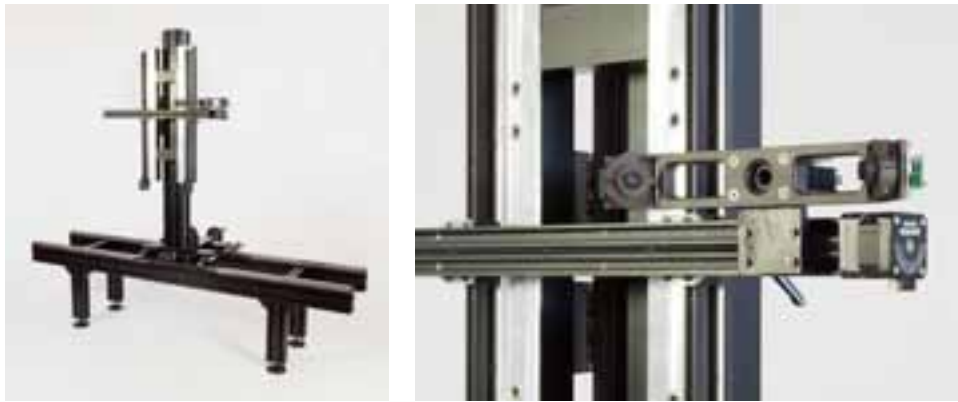
Lucida Scanner, 3D scanner developed by Manuel Franquelo and Factum Arte.

cords of Paleolithic art. Lascaux II was built between 1973-1983 and installed 200 meters from the original. By sensitively setting it into the original landscape, and thus reproducing an experience of nature, Lascaux II has attracted millions of visitors.[22]

Factum Foundation has become an industry leader in the development of scanners for recording works of art and architecture. Among these is the Lucida Scanner(designed by Manuel Franquelo) which records 100 million measured points per square meter. Designed and engineered in collaboration with Factum Foundation,the Lucida Scanner employs a process of triangulation. A laser stripe, similar to a bar code reader, is projected onto the object. As it travels over the surface, the deviations to the line of light, produced by the relief, are recorded by two USB video cameras. The red light laser, simply a coherent source of energy,generates no measurable heat andit never touches the surface. The Lucida Scanner has been tested and used in museums and under many different conditions, and is safer than conventional photography. The data, after processing, is translated to computer-controlled routers that carve an object's precise shape and surface features. These aspects are then reproduced in bespoke mediums, allowing for the creation of a replica with forensic accuracy. A separate protocol for recording colour insures a surface that is almost indistinguishable from the original.

Factum's approach is essentially one of digital conservation—as a result of the San Baudelio project, a permanent three-dimensional recording of the hermitage and its dispersed paintings will be provided to the custodians of the monument. This record will prove invaluable for monitoring the condition of all of its components over time. A complete photographic record,viewable with high quality, proprietary software, will be presented to each institution that owns a portion of San Baudelio's dispersed frescos, for research and monitoring. In addition, each institution will maintain ownership and copyright of the data recorded from its own works, and a copy of the data files can be stored locally on each museum's servers.

---

22. The real caves are now closed to the public owing to the presence of a destructive black mold that developed due to the presence of visitors.

Setting up the Lucida scanner at San Baudelio

Carrying out a test scan with the Lucida scanner at San Baudelio

In 2013, Factum Arte and Factum Foundation began, with the permission of the Museo Numantino de Soria (now responsible for the Hermitage of San Baudelio) and the Mayor of Berlanga del Duero, to digitally record the interior of the hermitage with the long-term view of creating a replica. 3D digital scans of the existing, painted surfaces were made and a protocol was established for the digital restoration of missing and damaged parts. For this exhibition, the definitive new scans of the dispersed frescos will be integrated with the work that has already been completed.[23]

High-resolution 3D scanning and panoramic colour photography using a computer controlled structure and macro lenses will be used to record the visual aspects of the hermitage. Colour matching will be carried out by creating hundreds of precise reference samples on site, which are then coded and matched to exact locations on the scans and photographs. This technique, making use of the best colorimeter available—a trained human eye—ensures that colour reproduction in the workshop will match exactly the colours as perceived under the natural lighting conditions in the building.

At Factum Arte's workshops, the photographic and 3D data will be collectively registered, processed and consolidated. Digital restoration of missing pictorial elements and the re-joining of the now-separated fragments will be carried out through the use of proprietary software programs created for this purpose. The underlying 3D forms and the replication of the two dimensional painted surfaces will be merged through a complex process, combining both automated and expert tasks on the computer together with more traditional artisanal practices in the atelier. The 3D data will be divided into panels and routed by a computer-controlled robot into high-density, polyurethane foam.

23. To learn more about the preliminary work carried out by Factum Arte on the hermitage of San Baudelio: http://www.factumfoundation.org/pag/204/San-Baudelio-digital-restoration.

Real   Restored

Non contact digital restoration done by Factum Arte.

Moulds will betaken of the routed panels, which are used to cast the sections of the walls in artificial stone. The interlocking sections, whose shape and joins will be dictated by naturally occurring delineations or fissures in the surface, will be bolted to an external structure of steel uprights and cross beams. Structurally supporting elements, such as the primary central column and small columns under the gallery, will be routed or modelled according to the precise criteria of the 3D data.

Composite, high-resolution, photographs of the surface are printed in colour using a proprietary flatbed printer onto a handmade acrylic "skin" developed by Factum Arte. The printing is adjusted for colour and density as it is being printed, with multiple passes through the printer in precise registration. The printed skins are then fitted by hand to each panel, ensuring exact registration, and then permanently bonded in using vacuum pressure and pressure sensitive adhesive. The floor of the replica will be made to resemble the uneven original where attention will be paid to the sound and feel in San Baudelio—the use of some acoustic innovations will ensure that the echo is similar and that the building is perceived as solid.

There are a number of gaps in our understanding of San Baudelio, both historical and recent. One problem is the missing paintings. If they cannot be found, they will be re-created on the basis on historical photographs and the underlying evidence that survives on the walls of the building. Likewise, sections of the painted surface with partially surviving repeated textile motifs will be sensitively recreated using an approach to digital restoration developed by Factum Arte over the past four years. As part of the process of creating the replica, these kinds of sympathetic aesthetic decisions will be taken at crucial points to join the surviving paintings harmoniously to create a total environment—a project of replication like this one is, by its nature, an artistic performance.

San Baudelio presents a fascinating case study at the nexus of issues regarding removal, restoration, and interpretation. Today, it is an historical monument rather than a church. It has been subject to heavy campaigns of restoration after 2000, where all of the remaining frescos were removed by the same *strappato* technique employed in 1926, treated, and then replaced. Plaster has been used to fill existing holes in the walls and gaps in the surface, and the exterior of the building has been pointed with an unsympathetic, pink mortar.

San Baudelio is a monument that has changed dramatically over time, not only because of the removal and dispersal of most of the paintings that once graced its walls. This exhibition will consider, in addition to its evolution over time, developments in the fields of architectural preservation and art conservation, as well as the diverse ways in which art and culture are valued. Finally, it will raise issues regarding the dynamic nature of originality and authenticity, ideas that have been gaining in theoretical basis since the early twentieth century.

PROPOSED VENUES AND SCHEDULE

Opening at The Cloisters at the Metropolitan Museum of Art in 2018, the exhibition will the tour to three to five US venues in 2018-20, before returning to Spain where it will be shown at the Museo del Prado. Negotiations with Patrimonio Nacional, Museo Numantino de Soria and the Mayor of Berlanga del Duero will determine the best permanent location for the facsimile in Soria and the best way to disseminate the research to attract new visitors to the area.

COSTS

The participation fee for each museum venue will be $250,000 including installation costs. Additional costs for each venue may include: Elevator platform for handicapped access (rented locally), US shipping, insurance for the facsimile and de-installation.

CONTACTS

For further information, please contact:

Heather Ecker, curator for Factum Foundation
heather.ecker@viridianprojects.com
+1 (617) 500 6707

Adam Lowe, director, Factum Arte
alowe@factum-arte.com
+34 686 949 098