

The Plan of S. Maria Assunta in Torcello Designed by N. Brjullov at the Service of the Virtual 4D Reconstruction of the Cathedral Towards May 1855

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Abstract. The plan of S. Maria Assunta in Torcello designed by the Russian architect and painter N. Brjullov in 1855 is analyzed in the context of less or more known written historic documents, of architectural and archaeological evidence, in order to virtually reconstruct by faithful images and interactive narratives the cathedral as it was immediately before the restorations 1854-58.

Keywords: Nikolaj Brjullov, Basilica of Torcello, Interactive Digital Storytelling, Virtual Documentation of Cultural Heritage, 4D Reconstruction.

1 Introduction

Latest research regarding the Basilica of Torcello¹, world famous for having conserved very ancient and rare Byzantine marbles, floor and wall mosaics, demonstrated the direct relation of its earliest decorative programs to the period during and immediately following the iconoclast struggle, when the classical principles of Byzantine sacred art began to crystallize. As the inscriptions on the wall mosaics in the central apse read, they were conceived as illustration to the dogma of the divine incarnation (i.e. of the possibility to represent God in human image), and bear trace of the typical artistic forms of the Byzantine veneration to the Virgin developed between the 7th and 12th cc, that included the *Acathistos* hymn and other Marian liturgical offices. From the 9th c. to the 12th c., these were celebrated in the Constantinopolitan *Vlachernitissa* church² at the Annunciation feast (Meersseman, 1958, p. 43), in memory of the liberation of Constantinople from the Muslims under emperor Theodosius in 717, obtained thanks to the miraculous intercession of Mother of God. It is considered (Meersseman, 1958, p. 214) that the earliest Latin translation of the Greek lauds Marie occurred properly in the Venetian lagoon about the 10th-11th cc. The rare image of the *Hodeghitria* in full figure,

¹ It was carried out in the frame of the complex restoration campaign 2018-2021, rendered possible thanks to generous funding by Save Venice Inc.

² In this church up to the 11th c. was kept the Holy Cintola of Mary.

near to the *Akathistos* type (Bentschev, 1992), holding in the left the Child and the Sacred girdle - as represented in the central apse of S. Maria Assunta, under the Annunciation at the upper corners of the east wall - unambiguously reminds these events. It suggests that the mosaic decoration of the cathedral of Torcello was strongly influenced by the first Latin translation of the *Akathistos* hymn and probably even by relics of the Holy *Cintola* (Delehaye, 1902) (PG), brought to the isle prior then this venerated in Prato³. The preciousness of the mosaic is due also to the fact that it is the only known Byzantine original of this miraculous image of Mother of God, close replica of which has been preserved on a Georgian enameled icon from the 10th c. (Huskivadse, 1984, p. 92) and on some ivories and reliefs in occidental museums (Kondakov, 1915).

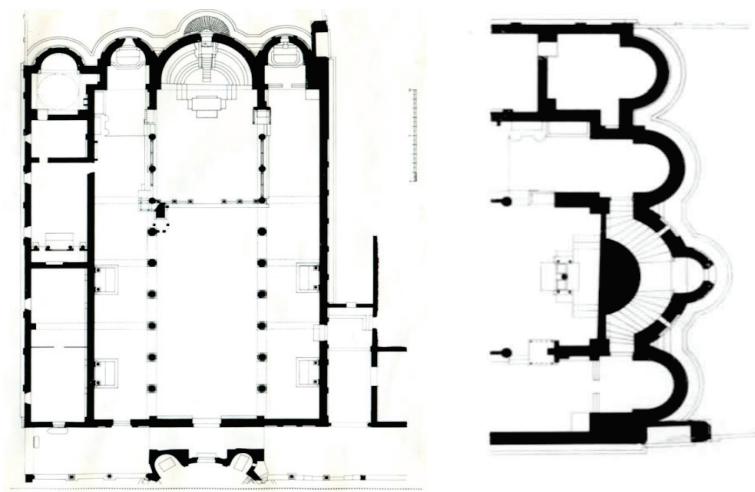


Fig. 1. Left: plan of the Basilica of St. Maria Assunta, Torcello, as actually. Right: a recent plan of the crypt behind the altars (source: (Andreescu I., 1984, p. 92, 93)

Non less artistically and historically significant the mosaics of the south chapel, the *diaconicon*, with the unique known to the moment mosaic image of S. Martin the Confessor, Pope of Rome⁴ (Todi, 599-Cherson 655), banished in the Crimean Cherson where, curiously, also existed a church dedicated to the *Vlachernitissa*, in which properly Pope Martin ended his earthly life (Kondakov, *Vizantijskie zerkvi Konstantinopolya*, 1887, p. 17-18). Archaeological excavations at S. Maria Assunta in

³ About the legend of the relic kept in Prato: (https://it.wikipedia.org/wiki/Sacra_Cintola)

⁴ Martin acted as *apocrisiarius* or legate at Constantinople in the early years of the pontificate of Theodore I (642–49), and was a deacon at the time of his election in 649. One of his first official acts as Pope was to summon the Lateran Council of 649 where the Monothelism was declared heretical. (Niero) and (Andreescu Treadgold, 2001) mistakenly identify this representation with the figure of the French saint Martin who has nothing to do with church dogmas, hence could not stay among the church fathers.

Torcello carried out summer 2020 (Comunicati stampa, 2020) discovered that the *diaconicon* originally was decorated with frescoes representing scenes of the life of S. Martin and of the Virgin, therefore their particular veneration (maybe also relics) strongly influenced the construction and first decoration of the church.

Another curiosity of S. Maria Assunta that proves its direct relation to the Byzantine capital, is the 6-gradines high synthronon in the central apse⁵, whose only known parallel is that of the ancient S. Irina in Istanbul / Galata (4a), conceived as Patriarchal chapel of S. Sofia (Kondakov, *Vizantijskie zerkvi Konstantinopolya*, 1887, p. 128).

Between 1854 and 1858, the mosaics and the architectonic structure of S. Maria Assunta underwent a complex restoration and the roof was raised. In this period, in Italy the greatest interest towards Greco-Byzantine antiquities was manifested exclusively by Russians, in first place by the Imperial family (Alexandr I and Nikolaj I were passionate adorers of Orthodox heritage) as well as by the first Russian diplomats settled here (Stoyanova M. , 2015) (Stoyanova M. , *Riflessi dei rapporti italo-russi sul patrimonio iconografico dei Balcani*, 2016). It is not occasionally that the Byzantine fashion of S. Maria Assunta attracted the attention of Russian art historians as (Pokrovskij, N.V., 1887), of painters and architects, already about mid 19th c. (Stoyanova, 2015, p. 122) and it is thanks to their investigations at Torcello that we have today some of the earliest scientific documents regarding the cathedral.

The present paper deals with the earliest of these, the little known drawing by the architect and painter Nikolaj Brjullov⁶ (Tretyakov Gallery, Inv. 30445/28), that has faithfully traced the plan of the cathedral as seen May 1855 (Krylova, 2012). In the Exposition, Brjullov's drawing has been critically confronted with less or more known written sources, technical drawings, architectural and archeological remains of the époque, to the end to reconstruct in a 4D perspective the modifications occurred in the cathedral during the restorative interventions 1854-58. In the third section, the choice of an interactive map for the visualization of the cathedral as it was towards 1855 has been briefly explained on the background of the actually existing main trends in virtual historic reconstructions of architectural monuments, considering the pros and cons of the different VR methods actually used in support to the integrated study-analysis-and-visualization of tangible and intangible heritage.

2 S. Maria Assunta in the Drawing by Brjullov from May 1855

Build about 643 on the site of ancient archaeological complexes dating back to Roman times, over the centuries the cathedral of Torcello has partially incorporated pre-

⁵ Probably an allusion to the 6th Universal Council, where Monothelitism was condemned as heresy.

⁶ N. Brjullov (Brockhaus & Efron, 1890—1907), nephew of the famous Russian painter Carl Brjullov, in the frame of his travel in Italy funded by the Imperial Academy of Fine Arts elaborated also other sketches from Venice and Torcello (S. Giorgio, the Doge's Palace, S. Fosca).

existing structures, and partially introduced new elements.⁷ To the main documented architectonic modifications count the extension of the Church with the construction of the side apses, of the lobby on the east side behind the altars and the raising of the floor by Orso Orseolo in 1008; the restorations by bishop Pietro Nani 1423, and other later interventions from 1721, 1854-58 (restoration of the mosaics, raising of the roof, opening of doors and windows, strengthening internal and external walls by brick lining, etc.), as well as from 1929-39. Contemporary with these changed the original appearance of the interior: as in other Byzantine churches, the fresco decoration of the earliest construction was replaced by mosaics with the restoration 1008. Following the development of the liturgical services, the function of the annexes changed together with their decoration, and many new altars appeared.

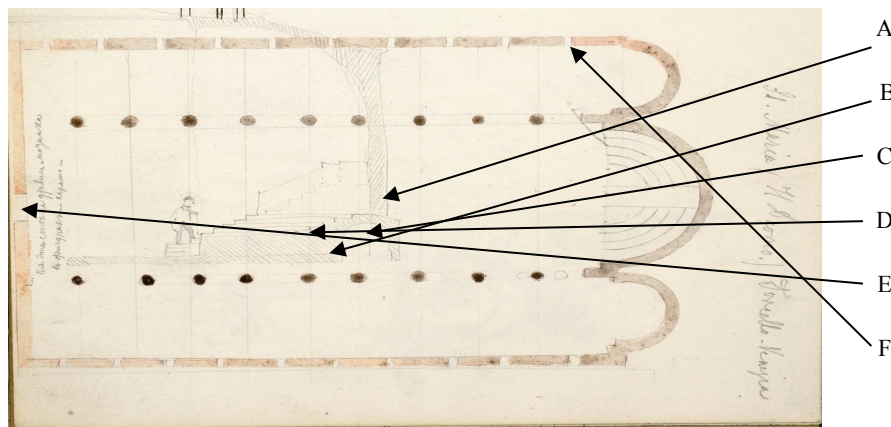


Fig. 2. Brjullov N. F. Venice. Plan of the Cathedral of Santa Maria Assunta on the island of Torcello. 1855. Graphite pencil, watercolor on paper 13,1 x 19,8 cm (fragment). Inv. 30445/28

The reconstruction of these complex interventions and of their exact chronology and causal links, necessary both for the restoration and preservation of the monument as well as for educational purposes, is hindered by the lack of sure reference points allowing unambiguous interpretations of the finds. At present, this is mainly done on the basis of some written documents, technical drawings and photographs dating back to the restorations in the last centuries, which are stored in the Venetian archives.

N. Brjullov's drawing of Santa Maria (2), dated with great probability in the spring of 1855 (Krylova, 2012) has traced with great precision the plan of the church, thus helping to reconstruct what it was since the last known intervention 1721 preceding

⁷ Despite already since mid 19th c in the centre of interest of European art historians and archaeologists, its original construction plan and date of consecration, dedication, spatial articulation and functions of the internal and annexed chapels, as their original decoration, are still subject of discussions. The main bibliography and hypotheses appurtenant to occidental specialists are critically summarized by (Vecchi, Torcello. Ricerche e contributi, 1979) (Vecchi M. , 1982) and in various, more recent publications by I. Andreescu (cf. bibl. references).

those more significant between 1854 and 1858. The accuracy and attention to details that characterise the manner of this famous Russian painter and architect, render his small drawing a key for the reconstruction and exact dating of some modifications, about which there is no clear mention in the available sources.

Here is more specifically how the single elements recorded in Brjullov's drawing look now and what they were in 1855.

- A. The synthronon existed in its current form. So far, none of the researchers writes anything about its date and original appearance, whenever the design is very unusual: it does not stand on the ground, but on a concave wall. This trait, reminiscent more of Roman than of Byzantine architecture, particularly attracted the attention of Brjullov, who evidenced it in a sketch imposed over the drawing (3b).
- B. From this sketch of the synthronon it can be deduced that the lower arches besides the central altar, which are now blinded, 1855 may still have been opened as they are not visible. The brickwork covering them at present probably did not exist at the time of Brjullov's visit, nor did the altar of S. Cecilia on the right side of the central apse (3b, 4b, 5).
- C. The entrance doors to the crypt behind the altar were arched and not rectangular as now (4b, 5). This circumstance is very important, since it allows to date *post quem* the burial of the mummified person found during the restoration work 2020 above the northern door to the crypt, in the space between the beam and the arch (5b).
- D. In the design of the church plan, Brjullov very accurately presented the height, proportions and number of steps of the synthronon: they are exactly the same as the current ones (3a), and this excludes hypothesis about any significant change since 1855. Such probably occurred during the first modification of the church, when the level of the central altar was raised.
- E. Entrance doors in the cathedral, except for the one in the center of the western wall, did not exist: however they, according to documents in the Venetian archives (Andreescu I., 1984), existed in 1857 (6a).
- F. The roof covering May 1855 was placed on the S and N walls differently as after the restorations 1854-58. The breaks in the perimeter walls in Brjullov's drawing correspond to the capitals that supported the roof before it was raised, as can be seen in a technical drawing conserved in the Venetian archives (6b). Today they are placed in another way and are not 10 but 13.

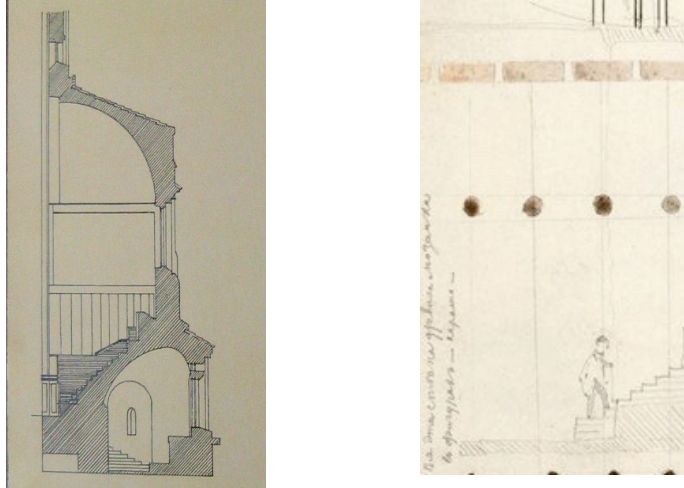


Fig. 3. Left: a recent drawing of the syntronon in profile (source: (Niero, p. 11). Right: detail of the drawing by Brjullov

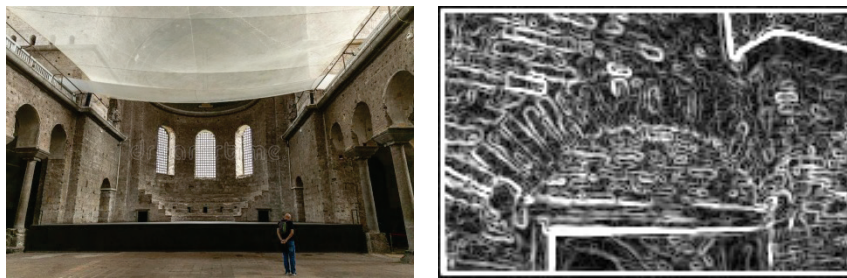


Fig. 4. View of the syntronon in S. Irina in Istanbul (left) and of the south door (right) to the crypt in Torcello as now (schematic design by the author)



Fig.5. View of the south (left) and northern (right) door to the crypt behind the altar as it is now (schematic design by the author)

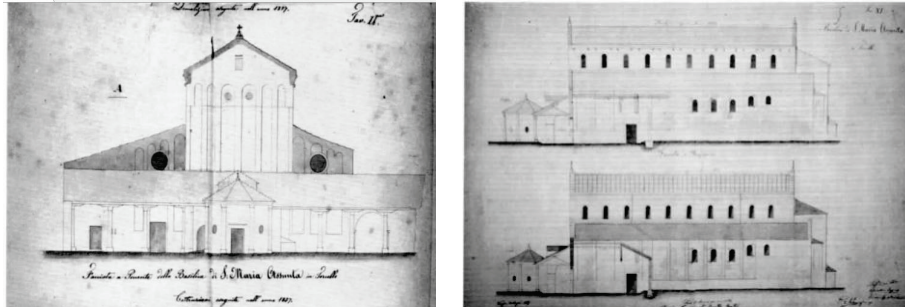


Fig. 6. The Venetian State Archive, drawings of the western and southern facades before and after the restoration of 1854-58 (source: (Andreescu I., 1984, p. 95,97))

3 Interactive Map for a 4D Visualization of the Cathedral Modifications

The multiple new data acquired during the restoration campaign of the cathedral in Torcello 2018-2021 opened the way to research paths not only in the purely technological scope as remote sensing, but also in the teaching, learning and scientific fields (Edutainment, 2011). Here we focus properly on these last aspects, i.e. on how documentary and intangible historic information about a heritage object or site can be conveyed in an understandable and engaging way to general audience and researchers in museums (Empler).

One of the most adapted mediums nowadays for representing a vast archaeological environment that do no longer exist or that has underwent radical transformations in the past is virtual reality (VR). This medium allows for the reconstruction of the lost as tangible as intangible heritage using static images, video presentations or faithful graphic and spatial reconstructions, interactive narratives, scientific research, procedural modeling (Cogo, Prazina, Hodzic, Haselijc, & Rizvic, 2019).

At the present there are several methods of virtual reconstructions (Rizvic, 2014) (Rizvić, Boskovic, Okanovic, & Zukić, 2019) that could be summarized into two main tendencies. The first approach, popular in the production of documentary films, historical programs, etc. , opts to create virtual reconstructions as close to reality as it is necessary for the objectives of the project. The technical features of the “material” (digital flat images, animation, etc.) obtained in the process of such reconstructions, allow high speed of the object creation and possibility to easy re-use it in further research. Moreover, the details that do not carry any meaning and are not necessary at all or are invisible to the audience, can be simplified on purpose.

The second trend is to create virtual copies of objects as realistically as possible. This approach is widely used in research as it allows to represent the historical object in more authentic way, but its use is conditioned . In first place, because three-dimensional models realized by this approach normally require application of special equip-

ment. Another drawback of such solutions is their isolation from the historical surroundings: practically everything that does not belong to the object of reconstruction cannot be visualized. Thus, despite its apparent credibility, the virtual reconstruction obtained by this method is considered to be cut off from the environment, thus noticeably reducing its effectiveness and possibility for correct perception by mass audience.

Common disadvantage of both the methods are their limits in representing the sphere of intangible, causal relationships linked to the reconstructed heritage objects. Particularly limited are the methods concerning VR in historic, 4D perspective (Rizvic S. e.): in this field the main, unsurpassed instrument rests the interactive storytelling, whenever its concepts are still under research (Glassner, 2004), (Miller, 2008), (Svitin, Efimov, Lapteva, & Romyantsev, 2012).

In our concrete case, for to represent the transformation of the cathedral over time and explain the reasons for these modifications, we selected the interactive map consisting of topographic units displayed on a 2D static horizontal and/or vertical plan (1). The narration has to connect them and, contemporary, allow to deepen into the history of each element separately, visualizing its historical stratification by colour coded faithful images (technical drawings, schematic prospects, photos, 2D and 3D reconstructions, etc.). The services it offers permit moving into the research field of what former “existed”, with the archaeological methods entering the scene, or at least gaining a proper control on the sphere of knowledge about the specific subject warranting the scientific nature of the reconstruction process. As the necessary condition to transform this process from an entertainment to a scientific experience is the effective correspondence between the reconstructed environment and the existing one, we pointed particularly on securing of exhaustive excavation/input data and on their correct interpretation by interdisciplinary scientific approach. In the concrete case of Torcello, given its historic role in bridging between Byzantium and Venice, the quality of the virtual 4D reconstruction depends much on the capacity to overwhelm the persisting cultural division between European East and West, capture and reassemble little known historic sources as those deriving from Russian and other Eastern archives that have not been considered so far in the literature regarding the archaeological site of Torcello.

We believe that accompanying such virtual reconstructions with interactive audio, video and textual digital storytelling, and balancing between interactivity and information conveyed by the story will bring closer heritage not only to researchers, but also to broad public.

4 Conclusions

The discovery of Brjullov’s drawing opens truly unexpected glimpses on the international projections that the artistic relations between Venice, Russia and the Balkans assumed in the second half of the Nineteenth Century: relations that should be studied better, as they concern a significant portion of valuable mobile and immobile heritage. We expect that it could be followed also by other important surprises given the great interest of 19th c. Russian architects and painters for the mosaics of Torcello. It is

known, for example, that these had great impact on the painting style of Vrubel' (Dmitrieva, 1990). A. A. Frolov (1861-1897), son of one of the founders of the mosaic school in Russia (Belezkaja, 2000), for two years studied the mosaic technique at the 'Salviati' factory in Murano (1888-1889), just in the years when replacements of the originals demonstrated by (Andreescu, I., 1999) took place (Belezkaja, 2000). We should also remind that in Torcello original mosaics were removed first by the Moro in the 1850s and then by the garzoni of 'Salviati' between the years 1872-1873 (Andreescu, Henderson, & Roe, Glass from the Mosaics on the West Wall of Torcello's Basilica, 2006), (Andreescu, The Mosaics of Venice and the Venetian Lagoon: Thirty-five Years of Research at Torcello, 2013). The young Frolov spent then another year in Rome and Paris. In 1895, the first Russian private firm for mosaics, that of the Frolov, won the competition for the mosaic decoration of the Isaakievskij sobor (St. Isaac's Cathedral in St. Petersburg), at which participated also the German firm 'Puhl & Wagner' and Italians (Stoyanova, Il mosaico con il volto della Vergine nel Museo Civico medievale di Bologna: originale, copia, replica o falso?, 2015, p. 127).

The Russian and Eastern European archives surely contain many other insufficiently considered information regarding heritage imported in Italy from the Byzantine area or created by masters that immigrated here as, for example, the frescoes of Castelserpio (Lazarev, 1971), to which the newly discovered frescoes in Torcello strongly relate. In this sense, the further development of the interactive map of Torcello will proceed with creating of new entries and clusters that explain these relations and redesign the history of the Venetian-Byzantine contacts in a more historically objective light, overwhelming linguistic barriers and cultural bias.

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