

St. Mary On Lastre Church In Beram, Istria, Croatia -Multidisciplinary Research, Recommendations For Restoration And Further Maintenance

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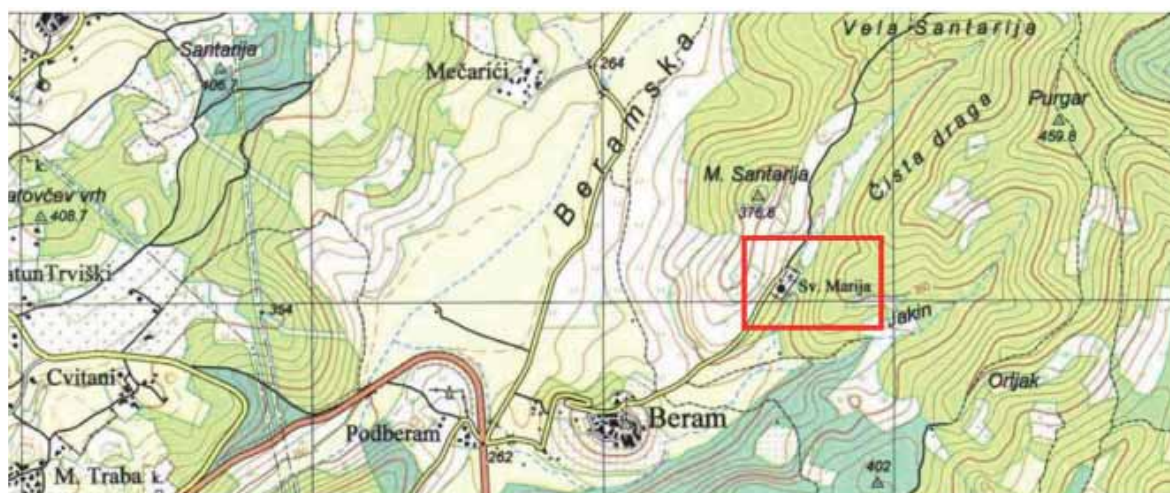
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1. Geographic Location and Historic Overview

The town of Beram is situated in the middle of the Istrian peninsula, in Western Croatia, close to the town of Pazin on the Pazin-Porec road. The medieval settlement had been fortified by walls over which a four-sided guard tower at the location of today's church stemmed. The settlement of Beram was inhabited already in prehistoric times as an Illyric fort which is confirmed by the finds from necropola of 172 burial urns in the field beneath the place (Marchesetti, 1903,108). Since 911 it was owned by the Diocese of Trieste as a gift of Berengari I, after which it became a part of the Pazin Principality (in 1498 Beram is mentioned in Urbarium of the Principality of Pazin). In numerous battle conflicts between the Pazin Principality and Venetia, the fortified town of Beram played a significant role, but because of that it suffered frequent attacks and destructions. At the end of the 16th century by the arrival of the Croatian families that ran from the territory under the Ottoman occupation, the revitalization of the settlement followed, and since 1578 it has held the status of the "small town". Again it was severely damaged in 1615 in the Uskok War (War for Gradiska).

2. Description of the Building and Valorisation

The church of Saint Mary on Lastre, built in the first half of the 15th century, is situated cca. 1 kilometre from the settlement and is surrounded by the graveyard. The building was built on the lower plateau, that is laid parallel towards the terrain contour, in the middle of the sloping hillside, in the foothill of which flows a crook. Parallel with the southern wall of the church, the plateau is fortified by a high supporting wall with more recently added reinforced concrete



Geographic Location of town of Beram and The church of Saint Mary on Lastre



The exterior of the church of Saint Mary on Lastre, view of the south facade

supporting construction at the foot of the wall.

The church is known by the most preserved cycle of wall paintings in Istria, of vivid colours, motives and composition, made in 1474 by the workshop of the master Vincent from Kastav and his associates [Fučić, 1977]¹. The painted scenes are of Mariological and Christological cycle, saints, Dance of the Dead, First Sin, Wheel of Fortune and Coming of the Three Kings (Magi).

Dance of the Dead is the only scene with this type of iconographic motive in Croatia, while in the part of Slovenian Istria there is another similar cycle in the church of Saint Trinity in Hrastovlje (1490). The Beram scene by its iconographic repertoire is connected to a decade-younger Dance of the Dead in Oratorio dei Disciplini in Clusone (1485), whereas the dancing images of skeletons and people are more closer in the representation to the so called Basel group (1431-1440) [Vignjević, 2005, 261]².

The wall paintings have been for centuries an integral part of sacral architecture, and also architectural space [Fučić, 2007, 11]³. Through centuries in Istrian churches wall mass dominates, that is rarely articulated with only few openings for (sun)light. All the Istrian space, both secular and sacral, lives in half dark. Due to climatic conditions the northern wall is often closed, which enables painting and representation of the longest continuous scenes on that wall (until the 14th century those had been the mass scenes of The Last Supper or Juda's Kiss, while since the 15th century, the scenes of Coming of the Three Kings (Magi) had been moved from the southern to the northern wall [Fučić, 2007, 21]. We can say that the wall murals in Istrian churches highlight the supporting elements of the architecture, because they are not covered by the figurative image but by the decoration of borders that by its' dynamic flow interpret the direction and function of each supporting element⁴.

The church of Saint Mary on Lastre is a one-nave building, with rectangular shrine which is the same width as the nave. The shrine, which had a circular ribbed vault during the construction in the 15th century, is separated from the



The interior of the church of Saint Mary on Lastre, view towards the northwest corner

nave by a triumphal arch. The nave of the church is closed by a tabulate. The walls of the church, on their outer side, are built of a well-carved stone blocks with a minimal joint between the blocks, while the inner face of the walls is made of smaller stone blocks that were later plastered and painted.

During the 1709 renovation the old gothic vault was disassembled and a new marble altar built, semi-circled windows were cut through the side walls and painted wooden ceiling was renewed. On the front wall the windows were cut through and a portico was added. Thanks to the conservator of Central Commission for the Preservation of National Heritage Sites, Anton Gnirs, in 1912, the church was thoroughly renewed and its sacristy built.

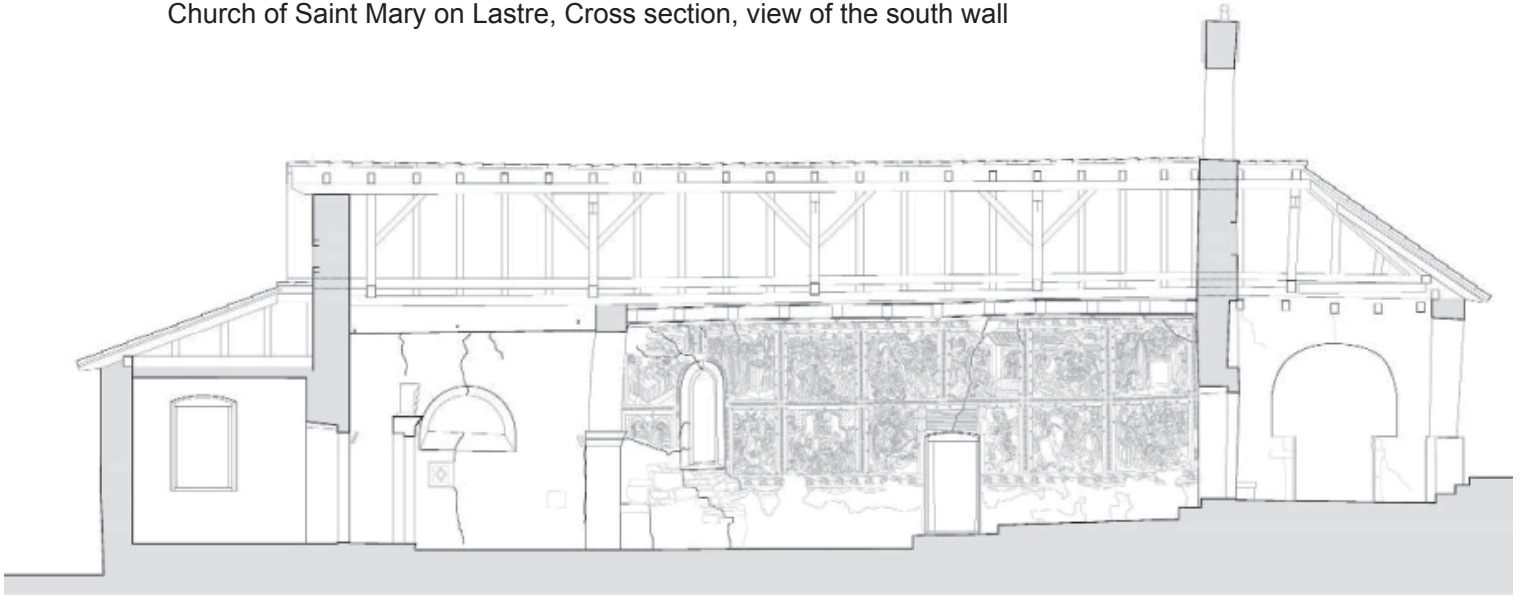
3. Review of the Works on the Building

In the last forty years on several occasions geotechnical and constructive research works have been undertaken. The research activities started in 1969 because of the large-scale constructive damage on the southern and western walls of the church that also caused the damage of the mural. Also, inside the

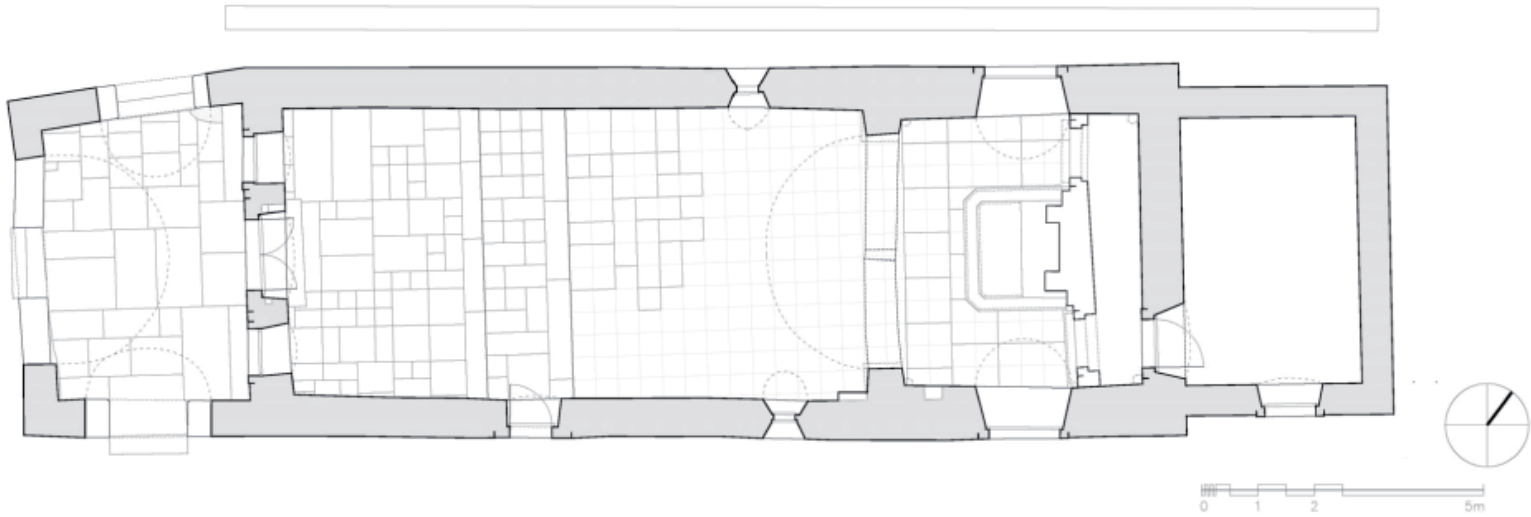


Dance of the Death, the church of Saint Mary on Lastre

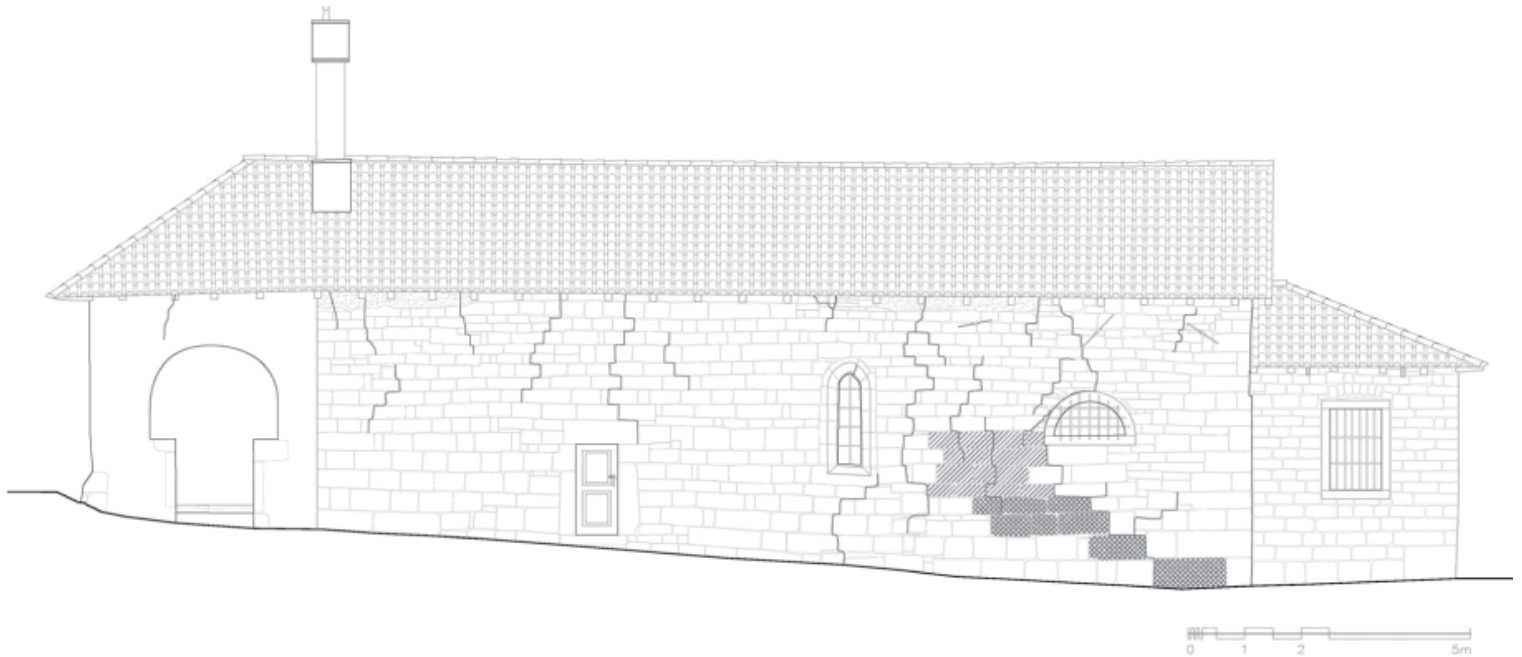
Church of Saint Mary on Lastre, Cross section, view of the south wall



Church of Saint Mary on Lastre, Floor plan



Church of Saint Mary on Lastre, South Façade with construction damage



building, high humidity and capillary moisture was visible. The supporting wall of the plateau had a large deformation in the middle of its overall length.

As the result of this first research, it was concluded that the ground beneath the church had been moving, however the reasons of this moving had not been discovered, nor was it successfully stopped.

In the next twenty years, the works had been done on the collection and drainage of rain water from the overall terrain around the church to prevent the negative effects of the subterranean waters in the ground under the church. The original supporting wall south of the church was strengthened by the reinforced concrete supporting construction to prevent its' further movement, for which it was considered to be one of the reasons of movement of the church walls. A part of the southern church wall, for which was detected that it does not lay on the solid rock, was strengthened by the concrete which secured the even foundation basis of the whole church.

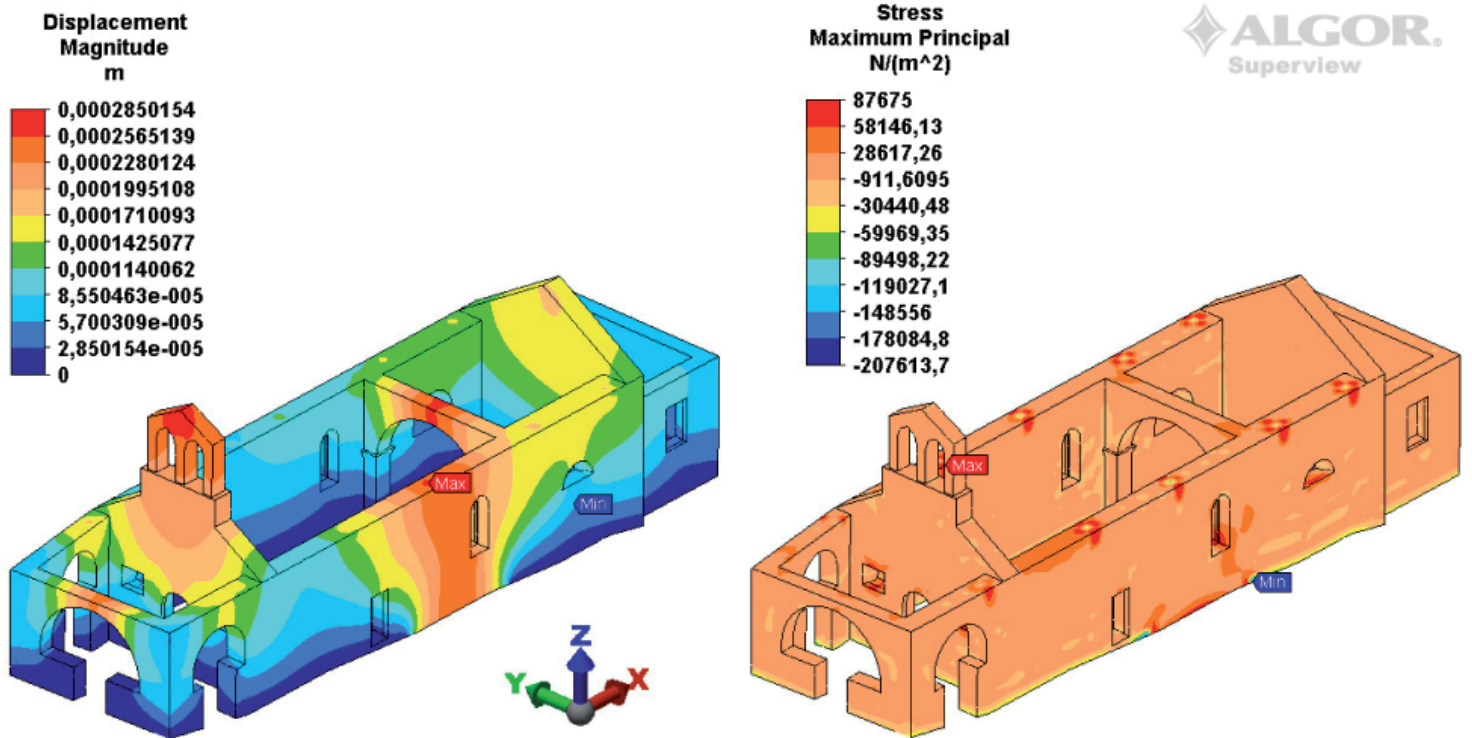
In the recent history, in 2003, a new cycle of geotechnical and constructive research and works started, the focus of which was, as until then, the stabilization of the surrounding church terrain that had not been achieved by the previous interventions. For that purpose, micro pilots in front of the damaged southern wall were placed and anchored within the bedrock. Besides the project of stabilization of the ground, the church roof made of tiles was replaced. After that procedure, the further opening of the already repaired crevices and the opening of the new ones was noticed on the church.

4. Research Work on the Construction

Besides all the unfavorable parameters during the several-centuries-long continuity of this building suggests its' vitality due to which the building exists. However, all the recorded shiftings of the stone material of the wall line caused further damage on the images. This damage was the reason for drafting of a multidisciplinary program of research works in 2010 to define and eliminate the cause of continuous damage. The research work encompassed: measuring of the terrain's characteristic, monitoring of the movement and temperature during two years, digging of probe pits to compare the footprint of the previous works, geodetic tracking of landmarks installed on the church and supporting walls during a two-year period, making of architectural survey of the current state and analysis of the existing state of the supporting construction on a three-dimensional model of the building.

As had been presumed that the previous works on the church and surrounding terrain resulted in the stopping of these shiftings, and with it also the crevices' movements, in the next step the probing excavations were done in the surrounding terrain that provided the explanation of these inconsistencies. By the examination it was detected that the reinforced concrete constructions done in 1970s as a reinforcement of the supporting wall that supposed to stabilize the supporting wall during its movement in the south direction, were completely dilated and the significant shiftings and subsidence of the whole added construction were evidenced, so that the whole addition is out of function [Šilhard, 2012].

The analysis of the existing state of the supporting construction of the church



Church of Saint Mary on Lastre, analysis of the existing state of the supporting construction on a three-dimensional model

proved that within the construction itself there are no larger inconsistencies and weak points that would cause existant widening of the crevices. The lack of the foundation on a part of the southern wall, and exactly on the part that is weakened by the openings into which also a triumphal vault is fixed, is the reason of the wall protrusion and shifting of the stone pieces in that part. The same damage as such are evidenced on the photographs that date 40 years ago. In the meantime, that part of the wall in the lower area was strenghtened by concrete, but it had not been consolidated which still causes the crevices to move, obviously because of the ongoing movements of the terrain [Lokošek, 2012].

5. Restoration works on the mural

Parallel with geotechnical and constructive research works, restoration works on the frescoes have been conducted.

The oldest until-today found data about the mural in Beram date in 1845 when the Istrian historiographer Carlo De Franceschi mentioned in his letter to the Triestine historiographer Pietro Kandler partly readable Latin inscription above the side doors on the south church wall. The oldest known information about the restoration works on the mural is from the 1909 report written by Anton Gnirs in which state funds for restoration works on wall paintings were asked for [Gnirs, 1909, 300]. The church was restored thoroughly in 1912 when another report was written by Gnirs about the works in the church and with a detailed report by Josef Balla, restorator who conducted the restoration works [AT-OeSt/AVA Unterricht BDA 33; Gnirs, 1912,184].

About the works between the two world wars there are no reports so it could

be assumed that the works had not been conducted at all.

Some minor restoration activities in the church as well as the extensive construction works begin again in 1971 and last uninterruptedly until 1986 when the management of the works and the care about the site were taken over by the Croatian Restoration Institute. The restoration works have been aimed exclusively at preventive protection works that were based on the grave constructive state of the building and several studies that noted the damage on the paintings. It is interesting to mention the research conducted in 1974 when the painting's pigments were analysed [Deanović, Kojić-Prodić, 1977, 21-35].

6. Results of Research

The all-encompassing analysis of the results of all the research activities has directed further projects and activities in two directions.

First, the need to implement a new system has been proved, as well as the need to strengthen the supporting constructions that should be able to stop the horizontal movement of the plateau's ground on which the church is situated, the shifting of which has caused the subsidence and with it the appearance of new damage on the already damaged overall construction. The existing supporting constructions need to be adequately connected and anchored into the stable ground.

After that, the focus should be shifted to the second part of the works which include the overall consolidation of the built structure that has through years been, due to the uneven foundation on the ground, exposed to the washover of the subterranean waters, local subsidence and horizontal sliding of the whole width of the church zone. Consolidation should start with the control of the building's foundation, especially the whole southern wall, to estimate and fix possible inconsistencies. In agreement with the restoration team and under their constant supervision, a minimally invasive way of injecting crevices and walls would be defined, by which all the wholes within the stone structure would be fulfilled without the negative influence on the valuable wall paintings. To restore the original mechanic characteristics of the wall and strengthen it additionally in case of minor additional settlements of the ground, the installation of the stainless steel ancor prods thick as the wall is foreseen to strengthen the critical areas in a minimally invasive way.

On the basis of the observation of the restoration works on the frescoes during the last hundred years, which was possible due to a detailed documentation of those works, an estimation of their influence on the original images from the 15th century could be made, as well as the recommendations for its further preservation. Despite of the technical solution applicable to further restoration interventions, the ethical approach to the previous restorations is still to be discussed as they are, in this case, a document of the time in which they were implemented.

Notes

¹ Latin inscription on the southern wall above the door is dated by the painting and the author is identified. The inscription was first mentioned in one letter by the historiographer Pietro Kandler, and its final resolution is given by the academic B. Fučić in 1977.

Natpis glasi:

In honore. domini.nostri. Y(esu). Kristi. amen. ac. gloriose.
virginis. matris. mariae. ac. no(me) i (n)e. sanctorum.
omnium. fecit. hoc. opus. depingere. comunitas.
bermw. ex(pensis). fraternitat(is). beate. marie. virginis.
hoc. pi(n)xit. magister. vicencius. d(e). Kastua. et. con-
plivit. mense. novembris. die. oct(av)o. post. marti-
ni. anno. domini. millesimo. quadracentesimo.
septuagessimo. quatro gr(atias agens?).

² The cycle from the church of Saint Trinity in Hrastovlje is connected also with the Dance of the Dead from Cluson (the procession goes from left to the right) however individual characters have iconographic similarity to Dance of the Dead from Paris (1425.).

³ In the Istrian wall painting there are rare cases that the paintings are part of the secular architecture, even less so that they show secular themes, and there is almost no practice to paint the outer walls. The wall painting is firstly connected to the interior of the sacral space.

⁴ Self-standing image of Saint Stephan on the triumphal arch is placed beneath the critical point, impost, strictly fitted into the system of the borders.

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