

THE CHURCH OF SAN MICHELINO IN FORO IN RIMINI: HISTORY, ANALYSIS AND PROJECT

Alessandra Peroni*

Facoltà di Conservazione dei Beni Culturali
Alma Mater Studiorum Università di Bologna

Giulia Lazzarini

Facoltà di Architettura
Alma Mater Studiorum Università di Bologna

Andrea Serrau

Facoltà di Architettura
Alma Mater Studiorum Università di Bologna

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1. Preface

The church of 'San Michelino in Foro' is unique in the area of Rimini: the complexity of its architecture is the most tangible sign of the elaborate history of the structure. Its story presumably started around the VI century AD and ended in the XIII century when the building belonged to the Order of the Templars and continued until today to be private property. After a few centuries under the ownership of the Knights of Malta, it became a private possession in the 19th century and the church and its architecture were gradually transformed.

A detail which increases the importance of the structure is a fresco in the apsidal part of the church, datable to around the second half of the XIII century, a rare example of the local painting of that period. Today, the building is part of the adjacent edifices and is unknown to the majority of the inhabitants of Rimini.

This article is based on the studies carried out for the Master Degree thesis of Giulia Lazzarini and Andrea Serrau, together with Michela Misirolli. It is entitled "Art and architecture. Restoration and enhancement of mural painting in the XIII century in Rimini", supported by research carried out by the historian Alessandra Peroni, collected in the thesis entitled "The church of San Michelino in Foro of Rimini: historical, urban and artistic aspects".

The aim of the article is to valorize the history (documental, artistic and architectural) of the church in the hope that a forthcoming restoration will be considered for the recovery of the building and the interior mural paintings.

* Corresponding author: alessandra.peroni@libero.it

2.The history of San Michelino through documents (Alessandra Peroni)

The church of San Michelino begins to appear in documents only from the mid-twelfth century. This element, in the light of architectural evidence, leaves no option but to make assumptions about the period of its foundation and the following centuries. In this regard, it is worth mentioning the studies carried out by the physician Giovanni Bianchi during the eighteenth century. He was convinced that the church was built on the behest of San Gaudenzo, Bishop of Rimini in the fifth century, after the destruction of the city Pantheon, as reported a century before in the *Raccolto storico* by Cesare Clementini [1-2]. Apart from tradition, a hypothesis about the dating cannot be disregarded without a comparison between the oldest extant portions of the structure and the history of the urban context under examination, for which reference should be made to the analysis carried out by the architect Lazzarini in section 3.2. From a historical point of view it should be noted however, that scholars are divided on the period of its foundation: for the construction of San Michelino, D'Agincourt and Rimondini [3-4] have suggested the fifth century, while Tonini and Turchini [5-6] have proposed the VI century.

In the first case, an Arian commission should be assumed, inserted in a social context that was beginning to benefit from a renewed economic and agricultural impulse. The reference to Galla Placidia is therefore natural, especially in view of the fact that, according to the historian Agnello, it was he who ordered the construction of the church of Santo Stefano around the year 440, in the southern town of Rimini. Between the fifth and sixth century the Po valley was the scene of many battles, including the so-called Gothic-Byzantine war, which strongly interested Rimini. The process of deterioration and decay of the city was in a sense offset by the strengthening of imperial Ravenna and by the political asceticism of its officials and its clergy: the proximity of Ravenna is in fact found in the spread of hagiotoponyms of Byzantine Saints, including the same Michele, as well as architectural techniques such as the use of clay pipes. The hypothesis regarding the dating of the church to the sixth century should therefore be traced back to the period after the clash between the Goths and the Romans of the East. As a meeting point between the two theories, the proposal of Gobbi and Sica is of particular interest. They speculate that an early Christian temple, probably already dedicated to the Archangel, could possibly date back to the fifth century; it could therefore represent a kind of intermediate stage between the pagan temple and the church dedicated to San Michelino [7].

However, we can only assume that the dedication has remained the same since the beginning, because the first document attesting the presence of the church dates back to 1144, in the Bull of Pope Lucius II dated May 21. At the request of Bishop Rainerio, with this document the Court confirmed their rights and properties to the clergy of Rimini. It listed the churches in the area, of which, among the structures *infra civitate*, the "*ecclesia sancti Michaelis Archangel*" is the first on the list¹. Instead, in a document dated November 3, 1225 a "*Rainerius de hora Sancti Michaelis*" is mentioned. This indication shows the importance of the church in the thirteenth century, such as to give its name to an area of the city² [8]. The presence of the Templars, however, is attested only from 1257, in a document which states that *Riclelmus* of Forlì "*executor et vicarius a Mutinensi episcopo constitutus in provincia Romandiole et in Marchia Anconitana*" instructed the provost of Rimini to exhort the inhabitants of the city and diocese to pay contributions on behalf of the *milites Templi*" [9]. A paper dated 27 July 1283 refers more clearly to a "*Dominus Ranutius de Florentino sive frater mansionis Templi que*

(...) *moratur apud ecclesiam Sancti Michaelis de Arimino*". In another document of 1284, we find "*Frater Albertinus de Regio praeceptor domus de militia Arimino pro ecclesie Sancti Michaelis de Arimino*", which also appears in a parchment of the following year: "*Frater de Albertinus de Regio ordinis militiae Templi de nomine dicte militiae*". It appears he is still tutor in the lists of tithes that go from 1290 to 1292, because together with the first and third payment of 1290, he also pays for the "*mansio*" of SS. Simone and Giuda located in Budrio di Longiano, which evidently was dependent on San Michelino³. We are then informed about the precautionary expropriation of the church which took place on 3rd December 1309 as a result of investigations carried out by Pope Clement V related to the Order in 1308 with the Bull *Faciens misericordiam*: this document states that "*Henricus, abbas monasterii Sancte Marie in Cosmedin Ravennatis, et Henricus, plebanus de Lardença, Pisane diocesis, procuratres domorum R(ainaldi) Ravennatis, et fratris I(ohannis) Pisani, archiepiscoporum, curatorum et administratorum omnium bonorum ordinis militiae Templi Ierosolimitani in provincia Romaniolo et aliarum parcium, ornamenta et alia utensilia ecclesie Sancti Michaelis de Arimino, ordinis predicti, ut in inventario continetur, presbytero Gaudencio, capellano ibidem, in custodiam consignarunt et mandaverunt eidem, quod hodie per totam diem assignet dictas res duobus parochianis ipsius ecclesie et maxime Sampiolo, eiusdem ecclesie parochiano*"⁴. In 1310 two Templars of San Michelino from Cesena, Giovanni da Todi and Andrea da Siena, were interrogated. As a result, we are able to obtain a great deal of information about life inside the *mansio* of Rimini: in fact, on sheet 49r, we read that the "*presbyter Iohannes de Tuderto (...) interrogatus quot fuerunt plures fratres in conventu seu loco, ubi moram contraxit ex quo fuit professus ordinem illum, respondit quod tres*"; on sheet 50v concerning the article "*Item quod elimosine*" he replied that "*numquam fuit ultra mare, nec contraxit moram in aliquo loco ordinis, nisi in Arimino*" and further stated that "*in Arimino, ubi morabatur, fiebat die dominico elimosina generalis et aliis diebus dabatur omnibus petentibus panis; et, si qui forenses venissent ad domum, curialiter recipiebantur*" [11].

Following the final abolition of the *milites Templi* on April 3 of that year, on May 2 the Bull *Ad providam Christi vicarii* was issued, which transferred ownership of the Order's properties to the Knights Hospitaller. Pursuant to this measure, on August 7, the *Giovannita* monk Atto received the church of San Michelino in Foro from the *subsecutore* Filippo, after reprimanding Malatestino Malatesta, who had apparently taken advantage of the freezing of the Templar assets to take undue possession of them⁵ [12]. In a document dated 8th January 1368 reported by Garampi, it is claimed that Brother Leonardo di Francesco da Forte, *praeceptor Templi Sancti Michaelis de Arimino Ordinis Ierosolimitani*, was assigned the church of San Simone *de Butrio tertiori Ariminensis*⁶. As a result, the Hospitallers took possession of most Templar properties and re-organised them locally. San Michelino, thus, did not lose its authority, but was able to strengthen it: this is particularly evident not only in the network of churches dependent on it and in the emphyteutic goods it provided, but also in the legacies that were donated. One example is that dated August 22, 1391, in the will of *domina Felixia filia quondam Cini del Monte Loccho et postea uxor Iohannis quondam filii Petri cenciarri de contrata Sancti Michaelis civitatis Arimini et nunc de dicta contrata*, who "*item reliquit ecclesie Sancti Michaelis civitatis Arimini pro tabula altaris pingenda et incoata unum ducatum auri*"⁷ [8].

Recent studies by Oreste Delucca about 15th Century Rimini also give us information about the patrimonial situation of San Michelino during the 1400s, together with

the church of San Marco, also owned by the order of the Knights Hospitaller. In addition to some lands, they also possessed two *hospitales* in the city: the hospice of Campana and that of San Marco, which had strong connections with the two churches in Rimini [8]. San Michelino's progressive detachment from the former Roman forum, today's Piazza Tre Martiri, can be attributed to the same period. This was due to the inclusion, in the area in front of it, of two buildings used as butcher's shops. Later, in 1547, the tower Clock which still exists today, was subsequently erected between the two buildings. In the second decade of the 1600s, in speaking of the churches of Rimini, Adimari cited San Michelino by saying "*ch'è prebenda dell'illustrissimo commendatore Contarino Venetiano (...) alla qual chiesa è anco anessa la chiesa di San Sebastiano confraternita*". The same historian also reported how, in 1613, thanks to the same "*commendatore*", "*i Minimi frari di San Francesco di Paola (...) hanno avuto per hospitio movibile nella città nostra, la chiesa di San Michaelae Arcangelo, che è commenda delli cavaglieri di Malta*". The church, therefore, was home for a short time to this religious Order, which in 1614 had already established itself in a place near the Chapel of Saint Anthony [13].

The Order of the Knights of Malta held San Michelino in Foro until its suppression in the early nineteenth century. Many details about life in the church and events that took place there can be inferred from the analysis of the many remaining *cabre*⁸.

3. Historical and artistic aspects

3.1. *The frescoes* (Alessandra Peroni)



Figure 1. Part of the fresco representing the Saint, Church of San Michelino in Foro, Rimini. (Photo by Fabrizio Petrangeli)

As we have seen, documentary sources inform us that the Templars were in San Michelino from at least the mid-thirteenth century. Therefore, the commission of one of the most interesting examples of thirteenth-century painting in Romagna can be attributed to them. It has already been dated by Federico Zeri to the year 1270. It was found in 1993 under a thick layer of plaster. The image of the so-called “saint of San Michelino” is, in fact, the only visible portion of a definitely larger cycle, as can be inferred from the confused forms of another hallowed figure placed to her left with the same height and spatial setting and by other traces found in the surviving layers of paint located in the area of the apse (Figure 1) [14].

There is little left of thirteenth century painting in Rimini, although there were certainly numerous commissions, in part due to the different religious orders which settled in the city. One of the rare examples worth mentioning is the head of the Redeemer of Umbrian-Tuscan style, dating back to the last decade of the thirteenth century; it comes from the bell tower of the former Cathedral of Santa Colomba, destroyed during the Second World War and is known to us only thanks to the photo published in the studies carried out by Turchini and Pasini. The “*Maesta*”, a work said to be by Cimabue, which was still visible in the church of San Tommaso in the seventeenth century, has also disappeared. Further evidence can be found in the school of Giunta’s crucifixes from the Franciscan convents of Villa Verucchio and Longiano. Their diffusion seems to be due to the presence of the painter or to at least one of his crosses in Bologna, around 1240 and whose pictorial style became widespread during the second half of the century⁹. However, as Rimondini recalls, in mentioning a letter from Monsignor Garampi to Giovanni Bianchi dated 21st October 1760, “*Nell’ultimo foglietto che ella mi ha favorito di Venezia, vedo farsi gran caso delle memorie di crocifissi anteriori al 1216; in Rimini ve n’era fino dal 1160 in 1170; ed io ne ho i documenti*”, the work of Riminese painters was already thriving by the end of the twelfth century. It is therefore logical to assume that these models inspired the artists of the famous fourteenth-century local school of the master Giotto [14].

And if the scenario as regards Rimini’s thirteenth century painting is incomplete, the situation is no different with regard to the coeval artistic production commissioned by the Templars; the most important evidence in Italy of this is the church of San Bevignate in Perugia. The cycle of paintings in the nave and choir, dating back to the seventh decade of the thirteenth century, is characterized by its simple language and arrangement in decorative geometric frames, its decisive drawing, expressed almost unhesitatingly with rapid strokes, mostly blacks, reds, yellows and grays and by its evident sober colors and lines¹⁰ [15].

From an iconographic point of view the image of the saint inside Rimini’s church is characterized by delicate features and a simple design that give a particularly deep expressiveness, resulting not only from the intense gaze, but also from the position of the body. The loss of the paint layer makes it difficult to contextualize and so provide indications about its identification. It is therefore natural to start from the analysis of the attributes and the clothing she wears: a strange pear-shaped object in her hands and a simple brown-coloured monk-like dress with a light veil fastened around her neck like a scarf decorated with thin fringes that could be defined a scapular. Starting from the analysis of the object in her hands, Rimondini proposes the theory according to which the saint might be identified with Saint Brigid of Ireland. The latter is actually depicted wearing the clothes of an abbess and a candle in her hands or a flame on her head or, in referring to the miracle of the multiplication of the pats of butter, dressed as a

peasant or busy distributing dairy products to the poor. As patron saint of Ireland along with Saint Patrick, she was certainly among the saints venerated by the Templars in Piacenza, as evidenced by a liturgical manuscript of the Order, currently owned by the chapter library of Modena [14].

Another interesting hypothesis regarding the identification of the Rimini fresco comes from Valdameri. He proposes the name of Saint Elisabeth of Hungary, Landgravine of Thuringia, who after the death of her husband, left for the Holy Land and decided to retire in order to conduct a charitable life of asceticism and poverty according to Franciscan teachings¹¹. Representations of this saint often refer to the episode when she fed the multitude that gathered around her and for this reason bread is a recurrent characteristic. However, in this case, it is natural to ask oneself why a Franciscan saint is found in a Templar preceptory, also considering the very short time that this assumption would leave between the spread of the cult subsequent to her death and the realization of the fresco in Rimini.

Finally, a third thesis can be found in the studies of Rimondini and Giovanardi, based on the assumption that the surviving fresco does not represent the image of a saint, but a Virgin of the Annunciation. Rimondini hints at a twelfth-century Annunciation found in Saint-Martin-de-Fenollar, where the Madonna has similar clothing, even though much simpler than that of the Riminese saint: what strikes one the most is the object she holds in her hands, a sort of white ball [14]. As Giovanardi reminds us, in representations of the Annunciation, as a recurrent object, Mary usually has a spindle in her hands though often red in colour; to mention a few examples there is that of the church of St. Sophia in Kiev or that of Santa Maria dell'Ammiraglio in Palermo¹². If, according to purely Byzantine settings there were traces of the Angel, in a mirrored position or at least in the proximity of the Madonna, any uncertainty would be dispelled. It should be recalled that the wall decoration was introduced into the existing context of a relatively small structure, in which the Archangel would have been found in a more limited and atypical position. But in fact, to support the hypothesis of the Annunciation, reference to the particular devotion of the Templars to the Virgin can be made, which is also confirmed during the interrogation of Cesena. However, there are two reasons for the presence of Byzantine influence, the first due to the contacts the Order had with the eastern world and the second due to the continued spread of these styles in Italy, mentioned in any discussion related to painting on the peninsula in the XIII - XIV centuries.

3.2. The history of the architectural structure through documentary sources (Giulia Lazzarini)

What is left of the church that once looked onto the ancient Roman forum in Rimini can still be seen between the present-day streets of "Via IV Novembre" and "Via San Michelino in foro"; there is a substantial portion of the apse and part of the walls of the transept. The apse, which is about ten meters high, is divided into two levels: the lower one is semicircular and characterized by a series of blind arches that occupy its entire height, while the upper one is pentagonal.

The following section tries to reconstruct the history of the architectural evolution of the church, obtaining information from documentary sources and bibliographical references.

The first change to the architectural structure probably occurred when, according to Clementini, San Gaudenzio, the first bishop and patron saint of Rimini, decided to

turn, what was a pagan Pantheon, into a Christian church [2]. It is a common phenomenon of syncretism whose effects are unfortunately not described from an architectural perspective. Similarly, the passage of the church at first under the jurisdiction of the Templars and then the Knights Hospitaller would certainly have led to changes in the architecture of the church, which, however, remain unknown to us.

Later, documentary sources inform us that it was after 1475 the block with the clock tower was built. This construction obstructed the view from the Church overlooking the ancient Roman forum. Thus, towards the end of the fifteenth century the reason for the church being called "*in foro*" was lost. Consequently, the view of the church changed spatially and it lost its role in the design of the most ancient square of Rimini.

In the nineteenth century, the French archaeologist and historian D'Agincourt documented the plan of the church of San Michelino. D'Agincourt supposed that the origin of the church dated back to the fifth century [3]. The Riminese historian Turchini, on the other hand, dates the construction of the church back to the sixth century [6]. However, both agree, as Clementini does, in affirming that the church was not built *ex novo*, but was built on the ruins of an earlier Roman construction.

The analysis of documentary sources runs parallel to a careful 'reading' of the walls of the building. The thesis of the conversion of an earlier Roman building into a church is thus confirmed by means of an analysis carried out on the base of the apse. It was, in fact, possible to see that the floor level suggested by the oldest foundation corresponds to the floor level of the ancient Roman road, visible through the holes existing on Via IV Novembre. Moreover, bricks of Roman origin used for secondary purposes were used to build the lower part of the apse wall. This fact leads us to suppose the existence of an earlier Roman building on which the church of San Michelino was built.

Together with the drawing, D'Agincourt provides a description of the church. He speaks of it as being one of the oldest examples where the form of the Latin cross has been applied to a church.

The researcher Bianchi [1] and Tonini say that this last hypothesis is doubtful and that it is more likely the church was circular in shape and had a dome. In referring to the church in the late seventeenth century, the fact that there was a dome is confirmed by Marcheselli [15] and a dome is also mentioned in the architect Valadier's report about damage caused by the earthquake in 1786¹³. Thus, it is certain that this dome was there until 1786, when it probably collapsed during the earthquake (to be rebuilt later, as can be read in Valadier's report¹⁴).

Beyond the various assumptions regarding the shape of the original church, from the analyses carried out on the walls, despite the lack of documentary sources, it can be hypothesized with reasonable confidence that the plan of the original church was in the shape of a Latin cross with three apses.

The moment the church ceased to be a religious building (1806) to become a private one and used as a warehouse (1809), is certainly important in the history of the architectural evolution of the building. Following the loss of its religious function, the height of the church was divided into two parts with the construction of a new floor. The construction of this new floor can be dated to the nineteenth century, a date confirmed by analyzing the building techniques used to realize the timber vault¹⁵ typical of the period (and limited temporally). The construction method was therefore used as a dating tool.

No longer a church, the building was later subjected to a great many changes. In the early twentieth century, an elevation was built on the walls of the apse. This led to the

total destruction of the dome of the church, which had probably been structured with terracotta tubules¹⁶. After the Second World War, a further elevation was built above the apse of the church.

In 1957 the building overlooking via IV Novembre next to the church of San Michelino, was demolished and rebuilt. During excavation work the foundations of the apse were brought to light, making it possible to see the various stages in the development of the building. Later, because of the demolition and reconstruction of the building adjacent to the church on the street, Via di San Michelino, in 1984 one of the arms of the transept of the ancient church was demolished and incorporated into the new building.

Of fundamental importance for the future of the building was the fortuitous discovery made in 1993¹⁷, under a layer of plaster, of a series of multiple overlapping cycles of frescoes inside the apse of the church. The importance of this finding is due both to the rarity of examples of painting in Rimini dating from the same era and also in having drawn attention to the need for a project of restoration and valorization of the entire building (Figure 2).

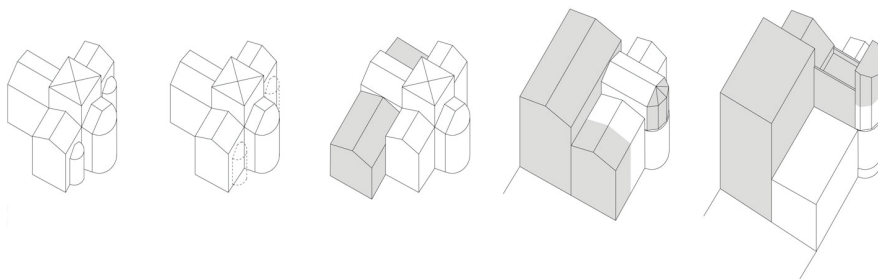


Figure 2. Graphical study of changes to the building through history

3.3. Talking walls: the history of the architectural structure through stratigraphic analysis (Giulia Lazzarini)

'It is not the amount of collected data that makes history, but the critical analysis of the data relating to the problems under consideration.' (Mannoni, 1995, [17])

Besides the study of documentary sources, a detailed observation and description of the building under examination was made with the purpose of understanding how the building is in fact made, the relationship between the various parts, why they were built and especially in what chronological order.

Stratigraphic analysis - a tool borrowed from the world of archeology - was used to identify the various phases of construction of the building and their chronological sequence. It was on the basis of the stratigraphic analysis¹⁸ and study of the methods of construction¹⁹ of the walls that it was possible to understand the history of the building from an architectural viewpoint.

The analysis was conducted primarily on the exterior masonry of the apse, since the

bricks are not hidden by layers of plaster (Figure 3). In order to analyze the masonry on Via San Michelino, hidden by plaster, it was necessary to rely on photos dating back to 1943 deriving from a private archive²⁰. In these photos in fact, it is still possible to view the brickwork without plaster (Figure 4).

The foundations of the oldest church are visible in the lower part of the apse (stratigraphic units 101 and 102), on top of which there is a string-course marking the ancient floor level and a portion of wall built contemporarily (stratigraphic units 103, 104, 114, 115, 116, 117) characterized by the presence of large blind arches (stratigraphic units 105-108 and stratigraphic units 118, 119, 129). At the top of the apse with blind arches there is a dentil cornice made of brick, built at the same time (stratigraphic unit 140).

The presence of river gravel aggregates of medium-large grain size (\varnothing minimum 2mm; maximum \varnothing 6mm) in the mortar of the lower and upper part of the apse, but not in the band that 'splits' into two parts the large blind arches (stratigraphic unit 113), has allowed us to establish the existence of different times in construction. The presence (stratigraphic units 102 and 103) of ocher-colored fired bricks of secondary use was also noted, which, owing to their size (larger dimension 30x15x7 cm), can be assumed to be of Roman origin.

The outer level of the soil must have gradually risen. This led to the need to create new foundations (stratigraphic breaking units 109-112) and a new base (stratigraphic unit 113) for the church. The blind arches were then broken into two parts and took on the appearance seen today. The construction of the new base could also date back to the eighteenth century after the earthquake of 1786, which, by compromising the stability of the building, may have made it necessary to carry out some consolidation work.

The part of the wall with blind arches and the new base (stratigraphic unit 113) have very similar sized bricks (prevailing size 26x14x5 for the blind arches; prevailing size 27x15x5 for the new base). It is the different gravel aggregate size of the two mortars that makes it possible to distinguish two different construction times.

However, it is hard to determine the relative and absolute dating of the stratigraphic units covering the apse. It is possible to assume that it is plaster dating from the nineteenth century, made with natural lime mortar. Instead, plaster made with cement mortar is found on the upper polygonal part, which would suggest a later dating.

The fourth blind arch from the left has greater stratification. The creation of new openings (stratigraphic units 136 and 138) almost certainly dates back to the nineteenth century. When the church lost its religious function and became a private warehouse it was necessary, after the construction of an intermediate floor, to open windows to illuminate the indoor spaces that had been divided. The creation of new openings probably led to structural collapses that later required consolidation (stratigraphic units 130,131,133). The grating of these openings are made of iron rods using a method of construction which allows us to date it to the nineteenth century²¹, probably at the same time the openings themselves were made.

The stratigraphic analysis of the existing portion of the church transept is extremely interesting. Clearly discernible is the fact that one rounded arch had been filled with a nonbearing wall (stratigraphic unit 146). This wall is evidently made of bricks of secondary use with a mortar bed of slaked lime and trimmed joint sealing realized in part with a mixture of lime and cement mortar.



Figure 3. Stratigraphic analysis of the apse.

On closer observation it can be seen that at the base of the left abutment and on the left impost of the arch several portions of the wall are visible which would suggest the start of a second apse with a vault. The negative stratigraphic unit 141 confirms the hypothesis of the existence of a second apse on the transept: the masonry in fact, has evident marks of a pickaxe used for the demolition of a portion of wall that leaned against it. Assuming that the church had a symmetrical shape, we can say that the church originally had a plan with three apses.

The analysis of the consistency of the masonry shows us that the bricks in the highest part of the construction are clearly of a later period compared to those of the lower part. The original covering of the old church was positioned above the cornice with dentils.

As regards the views visible from the Via San Michelino, from the analysis carried out on a photo of 1943 a number of hypotheses can be made. In the picture, there are some suspended arches and at the point they are interrupted, is a line of interface between the two different stratigraphic units. To the right of the arches you can in fact find a later stratigraphic unit, resting on the masonry with arches. From this it can be assumed that the nave of the church ended where the arches end and that the view giving onto Via San Michelino visible today is subsequent to it.

To conclude, the history of such a complex architectural structure can emerge only from a combined reading of the documentary sources and the walls. Walls often speak more than documents in archives. It is by learning to listen to the story that walls have to tell us that we can come to understand the importance and complexity of the architectural heritage that surrounds us and which unfortunately is, more often than not, ignored.



Figure 4. Stratigraphic analysis on a photo of 1943; hypothetical plan of the original Church

4. Technical-conservative aspects

4.1. Evaluation of the state of conservation (Andrea Serrau)

The church presents an extremely complex situation. In addressing the issue of conservation and restoration it was deemed appropriate to consider only the apsidal area of the church of San Michelino. This is because it is the most visible part that remains and presents the largest area of deterioration - a difficult situation to deal with from a conservative point of view.

As a first consideration on the state of conservation, it is necessary to think of degradation as the result of involuntary actions and that as regards its formation and development, is related to natural processes. Signs of degradation caused by human actions may also be considered, on condition that they are realized in an indirect and unintentional²² way. It is important however, to exclude actions which deliberately disfigure buildings as phenomena of degradation. These aspects will be included in the following analysis in order to choose more precise restoration interventions, under the wording of 'inconsistent interventions'.

The main aspect of deterioration in the church of San Michelino is the carbonic deposit present on the entire surface of the apse and the masonry above it. The main cause of degradation in the building is therefore of an extrinsic nature²³, that is, dependent on humans or rather on atmospheric pollution and above all, on the proximity of garages (this obviously entails constant contact with exhaust pipes). This is an actual²⁴ and continuous²⁵ cause, which will continue to act on the structure even after a restoration intervention. This means a scheduled upkeep is necessary. In addition, it would be useful to create new parking places and to remove the garages directly in front of the apse in order to reduce the progressive damage to the building. The above-mentioned carbonic deposits are the source of black crusts in several parts where there is poor runoff caused by projections and overhangs.

Also due to human action is the presence of greasy oily superficial deposits of a yellow color, found in the immediate vicinity of the exhaust fan of a restaurant. In this case too, the cause is extrinsic, actual and continuous: once the effects of degradation are removed from the structure, it is essential to eliminate the agent, too.

Additional phenomena of deterioration are due to meteoric water²⁶, which, not being adequately channeled, causes runoff and penetrates the masonry: this causes the mortar to disintegrate and the plaster to become detached from its support. Once the damage caused by the rainwater has been removed, since it is impossible to eliminate the source completely (extrinsic, actual, continuous), it will be necessary to limit its action by creating an adequate system of collection and removal of the water and to replace the missing elements made of brick in the dentil cornice. In the polygonal part above the apse, there are widespread phenomena of erosion in the mortar joints. This erosion can jeopardize the resistance of the masonry owing to the infiltration of water and is caused by the action of atmospheric agents, in particular by alternate cycles of imbibition and desiccation and the crystallization of dissolved salts which are then re-deposited in the meteoric water.

Among other phenomena of degradation²⁷ are also included invasive plants and biological patinas, even though limited. The presence of a greenish layer of biological origin is localized in the exposed north-eastern part of the masonry and is generally caused by the total lack of sunshine during the day.

In some parts of the masonry, phenomena of pulverization of the bricks can be noted and are mainly due to intrinsic causes; that is to say, a poor firing of the brick or the presence of nodules of calcite in a number of them. Pulverization affects the bricks at different depths, which entails carrying out different kinds of intervention.

The realization of new openings in the fourth blind arch from the left caused the collapse of parts of the wall: as a result, there are quite extensive areas in the masonry, where the bricks are missing.

The few visible cracks on the surface of the structure, probably due to past earthquakes, appear to be confined to following the direction of the joints of the bricks that make up the walls.

4.2. On the possibility of restoration (Andrea Serrau)

The restoration project is not only a series of initial and sterile surveys that is an end in itself, it becomes an integral part of the architectural planning, directly linked with the difficult task of saving the existing structure. A good restoration project has to conform to the following concepts: minimal intervention, reversibility, compatibility, durability, authenticity, upkeep [18].

The first question is related to when to intervene on the materials and the phenomena of degradation visible on them. As restoration is always traumatic, it is important to operate only when the conditions of the asset are so poor that its durability over time is threatened. The principle of minimal conservative intervention is therefore the fundamental element to properly proceed in the restoration of an ancient building [18]. Any part of it able to withstand the test of time deserves to be consolidated and conserved. The minimal intervention principle, when carried out following a set timetable is, socially and economically, the most convenient. The minimal intervention logic is, however, extremely vast and should not induce one to do as little as possible only to force the concept in a paroxysmal form, keeping for example, historical stratifications which are or may be harmful for the structure²⁸.

Cesare Brandi in his 1963 Theory of restoration [19] states that "the essential aim of restoration is not only to ensure the existence of the building in the present, but also to ensure its transmission into the future. Since no-one can be sure the structure will

need further interventions, even simple conservative ones, they have to facilitate and not preclude further interventions". Thus emerges the tough concept of reversibility: the restoration intervention should be reversible in order to subsequently better operate using methods and materials which are physiological and best suited to the asset.

On this point, Carbonara suggests "at least potential reversibility of expected or effected works, on which to work by means of adding is better than working by removing, seeing as an addition, as a rule, is removable, while removal is permanent".

Compatibility means not only chemical-physical compatibility with pre-existing materials or mechanical compatibility between old and new materials, but also compatibility of a critical order. Compatibility may also refer to decisions about the legitimacy of reutilizing a historical building and to what extent it should be allowed.

In order to be consistent with the concept of durability, it is fundamental that each restoration or substitution intervention is carried out using elements that are as lasting as the original parts. The concept of durability can be considered as a further specification in the above-mentioned concept of compatibility: whether for restoration or substitution, it is important to choose materials that have similar characteristics to the original ones over time. It is however necessary to recognize any integrations effected, in order to distinguish the original parts from the inserted ones (concept of authenticity).

4.3. Restoration hypothesis for the masonry of the apsidal area (Andrea Serrau)

After thorough analysis of the degradation phenomena, a hypothesis of intervention can be made by listing the processes in order of execution (Figure 5). The different interventions are divided into operations of removal (Rm), protection (Pr), cleaning (Cl), consolidation (Co), analysis (An) and restoration (Re).

REMOVAL OF VEGETATION (Rm 1) set by disinfection treatment with a low-toxicity weed killer.

REMOVAL OF CEMENT MORTAR INTEGRATIONS (Rm 2) through the use of micro sand-blasting equipment and tools with a chemical-abrasive action, being careful not to damage the integrity of the masonry.

STUCCOING OPERATION TO SAVE EDGES (Co 1) on the partially detached plaster parts. The stuccoing must be done using a mortar made with hydraulic lime, being careful to leave small holes in the lower part of the stucco to allow for successive injections to strengthen the plaster.

WATERCLEANING/HYDROBLASTING (Cl 1) over the entire masonry surface using water at low pressure and a sorghum brush.

REMOVAL OF BIOLOGICAL PATINA (Cl 2) with a soft-bristled brush and disinfection of the surface using chemical compounds with biocide action, based on the different biological species and to be assessed through direct testing.

DIFFUSE CLEANING WITH NEBULIZED WATER (Cl 3) with possible addition of resins and ionic exchange and not hot. Cleaning will be done by means of brushing with a sorghum brush.

REMOVAL OF BLACK CRUSTS (Cl 4) through mechanical intervention with high-precision micro sand-blasting tools or through precise application of clay (attapulгите) and distilled water compresses.

REMOVAL OF WHITISH FORMATIONS (Cl 5) caused by an excess of soluble mineral salts on the surface, through precise application of clay and de-ionized water compresses. The operation of positioning and removal of the clay compresses (5-10

mm thick) may be repeated several times until the whitish patina is fully eliminated.

REMOVAL OF DEPOSITS OF GREASY AND OILY SUBSTANCES (Cl 6) through compresses made with alkaline solutions of ammonia, butylamine, dimethylformamide and amyl acetate. Application time should be established and calibrated by carrying out tests on portions of the surface.

STRATIGRAPHIC ASSAY OF THE PLASTER (An 1) in order to understand the different characteristics of the layers of colors and the type of adhesion the plaster has to its support.

CONSOLIDATION OF THE PARTIALLY DETACHED PLASTER (Co 2) initially proceeding with the elimination of dust and earth by means of suction tools, from the cavity formed between the layer of plaster and its support. The cavity will then be washed using injections of water and alcohol. After dampening the surface of the plaster, a mixture of natural hydraulic mortar with added acrylic resins will be injected. The final stage involves using manual pressure on the plaster in order to make it adhere better to the support masonry.

ETHYL SILICATE TREATMENT (Pr 1) of the mortar joints that are no deeper than 2 cm.; their erosion should not be greatly advanced in order not to compromise the integrity and water tightness of the masonry.

REINTEGRATION OF JOINTS (Re 1) thicker than 2 cm using mortar made with slaked lime, with similar characteristics to that of the original in composition, particle-size and aggregate coloring. The joint will be made by re-pointing using the maximum indentation possible and being careful to ensure the masonry is protected from water infiltration. Two different types of mortar will be realized for the integration: one for the oldest part of the masonry and the other for the part constructed in the early XX century.

PROTECTIVE TREATMENT OF PULVERIZED BRICKS (Pr 2) to a depth of not more than 3-4 cm through imbibition with ethyl silicate.

PROTECTIVE TREATMENT OF THE REMAINING LAYER (Pr 3) by brushing over with ethyl silicate.

REINTEGRATION OF PULVERIZED BRICKS (Re 2) to a depth greater than 3-4 cm. Reintegration will be performed substituting the old bricks with hand-made bricks of the same size and color as the original ones laid in the undercut.

REINTEGRATION OF INCONSISTENT INTERVENTIONS (Re 3) to be removed. Reintegration will be performed substituting the old bricks with hand-made bricks of the same size and color as those laid in the undercut of the original masonry.

REINTEGRATION OF THE MISSING BRICK ELEMENTS (Re 4) whose presence is fundamental also from a structural point of view. The procedure consists in dismantling the joints, then raising the structural subsidence with jacks to subsequently reintegrate the joints by inserting fiberglass hinges. Reintegration will be performed using a stitch-unstitch technique with hand-made bricks of the same size and color as the original ones laid in the undercut. As regards the joints, the previously given instructions for reintegration of joints are to be followed.

COMPENSATION OF THE FRACTURES (Co 3) created in points subjected to particular mechanical stress along the weakest lines of the masonry. Since the damage to the masonry is confined to the direction of the joints without compromising the integrity of the bricks, only compensation of the fracture will be executed. In the case of a deeper fracture being found, such as to have damaged some of the bricks, the damaged parts will be substituted.

most important are the disintegration of the plaster and superficial deposits, due to the migration and recrystallization of soluble salts, and the possible chromatic alteration of the pigments of the wall painting. The opening also has dangerous structural damage and is supported by a temporary wood prop. As the owners have repeatedly expressed their willingness to proceed with the detachment of the more readable portion of wall painting (the Saint), improvement of temperature and humidity conditions *in situ* have never been given any consideration.

In the portion of mural painting brought to light several successive phases of realization are detectable. In addition to the phase of the Saint (dated around 1270), there are in fact at least two other phases, dated to later periods. The fact that the painting of the Saint was followed by later pictorial phases may be the reason why there are widespread small gaps in the plaster (subject to reintegration in the case of pictorial restoration) caused by treating the surface with marteline in preparation for the spreading of a new layer of plaster without resorting to the intermediate layer of *arriccio* (*spicchetture*)³⁰.

In addition to these small gaps, whole portions in the layer of plaster and *arriccio* are missing, which it is believed will be difficult to reintegrate in the event of any restoration work.

5. Conclusions: guidelines for a project of valorization and restoration

Considering the degraded condition of the building and having hypothesized restoration interventions on the masonry, it is essential to focus on developing a project for its restoration and valorization.

As previously analyzed, the ancient church of San Michelino has completely lost its original spatiality. In addition, the construction of a vault floor in the nineteenth-century divides the church into two non-communicating parts. Besides this, the building's fragmentation into several properties makes the reading of the architecture more difficult.

With an architectural restoration project, it is hoped that the continuity and readability of the church spaces are restored as much as possible, since the vault floors are considered valuable due to their historical stratification. The main objective should therefore be to reinstate communication between all the rooms in the church. The creation of an adequate entrance system is necessary, which may give back the recognizable exterior it once had at the front of the building and which today is absent; today, the remains of an old church can be identified only in the apsidal part, visible from the Via IV Novembre.

With the aim of better redefining the original spatiality of a Latin cross with a single nave, it is indispensable to eliminate the partitions present at basement level in order to create a uniform space, a valuable space where visitors have the possibility of admiring one of the most ancient buildings in Rimini.

Notes

¹ Archivio Vescovile di Rimini, perg. n. 275, copy of the original made in the fifteenth century.

² Archivio di Stato di Rimini (ARSn), ex Fondo Principale 93 Regesto Nardi.

³ All three documents are kept in ASRn, Fondo Diplomatico, D.I.4, Miscellanea quad-

- erno delle pensioni dell'Ospedale di S. Lazzaro del Terzo. As regards the payment of tithes, see A., Nasalli Rocca E., Sella P. (edited by), 1933, *Rationes decimarum Italiae nei secoli XIII e XIV, Aemilia*, pp. 64, 72, 83, 91, 101, 105.
- ⁴ Paris, Bibliothèque Nationale, Ms. lat. 2573, 92 (2), original cited by [11] p. 300.
 - ⁵ Archivio Storico Abbaziale di Nonantola, Serie registri, 5, Protocollo Notaio Bertolino Speciani, carte VIIv-XVIv; Tiraboschi G., 1784-1785, *Storia dell'augusta Badia di San Silvestro di Nonantola*, Società Tipografica, Modena, II, p. 409; Fantuzzi M., 1801-1806, *Monumenti ravennati dei secoli di mezzo, per la maggior parte inediti*, Venezia, VI, pp. 124-125.
 - ⁶ Garampi G., *Schede*, Biblioteca Gambalunga Rimini, Sc-Ms 200, n. 1063.
 - ⁷ ASRn, Archivio storico comunale, vol. AP 756,c. 57. See Delucca O., 1997, *Artisti a Rimini fra gotico e rinascimento: rassegna di fonti archivistiche*, Patacconi, Rimini, p. 478.
 - ⁸ Most of this documentation is kept in ASRn, the Royal Malta Library and Archivio del Gran Priorato dell'Ordine di Malta in Venice.
 - ⁹ Refer to Pasini P.G., Turchini A. 1975, *La cattedrale riminese di santa Colomba*, Cesena, p. 92; Pasini P. G., 1998, *Medioevo fantastico e cortese: arte a Rimini tra Comune e Signoria*, Musei Comunali, Rimini, p. 49; Valagussa G., 1995, *Prima di Giotto*, in *Il Trecento riminese. Maestri e botteghe tra Romagna e Marche*, Electa, Milano, pp. 72 ss.
 - ¹⁰ For the history and frescoes of the Church of San Bevignate in Perugia see Roncetti M., Scarpellini P., Tommasi F. (edited by), 1987, *Templari e Ospitalieri in Italia. La chiesa di San Bevignate a Perugia*, Electa, Milano.
 - ¹¹ Online Archive by Carlo Valdameri dedicated to medieval iconography: <http://spazioinwind.libero.it/iconografia/Michelinoabside.htm> [accessed on 19/08/2012].
 - ¹² The skein of purple wool for the veil destined for the Temple. Giovanardi A., Zuccheri A., 2008, *Un filo rosso tra le dita. L'annunciazione nell'oriente cristiano*, Terra Ferma, Vicenza.
 - ¹³ Archivio di Stato di Rimini, perizia dei danni del terremoto del 24/12/1786, AP 619, c.97
 - ¹⁴ Archivio Documenti Soprintendenza per i Beni Archeologici e Paesaggistici di Ravenna, busta 42 fascicolo 336, 9 Febbraio 1995; also Tonini also speaks of an inscription that should have been on the outside of the Church door. The inscription referred to the restoration work carried out after the earthquake and completed in 1788. [16].
 - ¹⁵ Corresponding to the Italian '*volte in foglio*', it refers to a vault made with bricks which are laid using the smallest size of the brick in the thickness of the vault (bricks are laid lengthwise).
 - ¹⁶ The assumption that the dome had been built with terracotta tubules derives from the fact that some of these tubules were reused to build the upper part of the wall of the apse.
 - ¹⁷ Architect Andrea Ugolini found the paintings while working on moving the sewage pipe in one of the upper floor apartments.
 - ¹⁸ All constructions and demolitions in the building overlap each other. Stratigraphic analysis consists in the study of these different moments of construction and demolition (stratification). Stratigraphic units (u.s. or US, which stands for '*unità stratigrafica*' in Italian) are the basic elements of stratigraphic analysis. There are different types of u.s.: positive u.s., the result of one intentional con-

structive action (given using one identification number); coating u.s., that is positive (given using a circled identification number); negative u.s., when there are evident marks of intentional removal of material which occurred unitarily (given with a squared number). Two different u.s. can appear in relation to anteriority, posteriority or contemporaneity with respect to each other. Different forms of dating can result: relative dating which place stratigraphic units temporally in relation to each other; absolute dating which give real dates; direct dating (through information deriving from the building); indirect dating (from documentary sources external to the artifact).

Conventional symbology is used to refer to the different u.s.:

The arrow (▼) indicates the posteriority of the u.s. which contains the arrow itself with respect to the one towards which the arrow tip is directed;

The symbol (~) between two adjacent u.s., indicates contemporaneity;

The symbol (M) shows the presence of a breaking line between two u.s.

- ¹⁹ Analysis of the construction materials which make up the building. Through the individuation of the method of construction and of the material it is possible to date the building to a specific historical period (absolute dating) or to determine the relationship between different moments of construction (relative dating).
- ²⁰ We thank Mr Zavatta for the photos of 1943.
- ²¹ The method for constructing this type of iron bar was gradually lost in the twentieth century, because of the difficulty of execution.
- ²² For example, phenomena of weathering or others connected with fire or similar events.
- ²³ Alteration and degradation mechanisms can be originated by causes external to the building, that is extrinsic causes, which are always present in some measure and sometimes depend on weaknesses in the building itself, in other words intrinsic causes.
- ²⁴ "Actual cause" is an active cause present at the moment of the analysis.
- ²⁵ In speaking of continuous, isolated or cyclic causes, a distinction is made based on the frequency of their action. The recognition of a cyclic cause is essential, because its action will recur, while an isolated cause happens only once.
- ²⁶ The main extrinsic and natural cause of degradation is water, able to act both at a chemical and physical level. Water is the origin of phenomena of poor freeze resistance and salt crystallization; it is a natural solvent and as such may lead to chemical degradation and phenomena of salt depositing. It allows the growth of biological organisms and may be present in building in the form of dampness. Water may also be a mechanical cause of degradation in the form of pouring rain that brings about the erosion of certain materials or in the form of snow that accumulates and puts pressure on the structure below.
- ²⁷ Reference is to biological degradation. The word 'biological' is used to indicate those mechanisms, physical or chemical, connected with the action of organic agents (microorganism or plants). This refers to degradation mechanisms, frequent in low polluted environments and characterized by high levels of dampness and temperature, poor ventilation, presence of light source and organic materials. Physical degradation is mainly influenced by the mineralogical composition, the grain and the weave of the materials. Mechanical actions of the atmospheric agents (wear), phenomena connected to internal tension or changes in state, such as evaporation or condensation.

- ²⁸ For example, the above-mentioned 'inconsistent intervention'.
- ²⁹ It should be noted that owing to the difficulty in accessing the apse, which is private property, it was not possible to perform a detailed analysis of the wall paintings. Analyses and considerations were therefore elaborated on the basis of documentary sources found in the *Archivio documenti della Soprintendenza ai Beni architettonici e paesaggistici* of Ravenna and on photographic documentation.
- ³⁰ The 'arriccio' is the second of the three consecutive layers typical of the traditional technique of the fresco or of the plaster finishing on brick walls. The purpose of 'arriccio' is to facilitate the cohesion of the last layer of plaster. Realizing a plasterwork on an existing plaster, in order to avoid 'arriccio', the procedure of 'spicchettature' may sometimes be used and consists in treating the existing surface with a pick called 'martellina'.

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Biographical notes

Alessandra Peroni, palaeographer, graduated *cum laude* in 2010 at the Faculty of Preservation of Cultural Heritage with a thesis entitled *Templars in Romagna*. In the following two years she attended the School of Archival, Paleographic and Diplomatic Studies at the State Archive of Modena and obtained her diploma in 2012. At present she works as a historian for the company AdArte in Rimini dealing with archival research with particular reference to the XV-XVI centuries.

Giulia Lazzarini, architect, graduated *cum laude* at the Faculty of Architecture at the University of Bologna with a dissertation entitled *Art and architecture: the restoration and enhancement of the mural paintings in Rimini between 13th and 14th century*. At the same time she attended the Conservatory and graduated in viola and violin. She is now a Ph.D. candidate at the University of Bologna and at EHESS in Paris with an interdisciplinary dissertation on music and architecture entitled *Luigi Nono: space and composition*.

Andrea Serrau, graduated *cum laude* in architecture at the Faculty of Architecture at Cesena with a thesis on Restoration. He is a PhD candidate at the University of Bologna and the École Pratique des Hautes Études of Paris with a thesis entitled: *Stile. Teoria e pratica nell'opera di Viollet-le-Duc*. He currently performs professional work in the field of architecture as well as working as a tutor at the Laboratory of Architectural Restoration of the Master of Science in Architecture of Cesena.