

THE FACADE OF THE CHURCH OF SAINT FRANCIS OF BENIGANIM: THE STUDY DURING ITS RESTORATION

LA FACHADA DE LA IGLESIA DEL CONVENTO DE SANT FRANCISCO DE BENIGANIM: EL ESTUDIO DURANTE SU RESTAURACIÓN

Luis Cortés Meseguer ^a, José Pardo Conejero ^b

^aInvestigador en el Centro de Investigación de Tecnología de la Edificación y adscrito al Departamento de Construcciones Arquitectónicas; Universitat Politècnica de València; Camino de Vera, s/n, 46022 Valencia, España. luicorme@upv.es

^bArquitecto. Master de Conservación del Patrimonio Arquitectónico. pep.pardo.arquitecto@outlook.com

Abstract

It is clear that in any rehabilitation works, it is necessary to extract data from the building and analyze this data well to carry out the different studies and conclusions. In this sense, it is necessary to understand the building and its parts in order to determine a more reliable and methodological approach to the conclusions, which, although on many occasions they are still hypotheses, are the most accurate approximation to the true knowledge of the monument. The graphic survey and the generation of documentation such as the geometric and trace study carried out in the process of architectural restoration, allow us to get closer to its authors and determine the character of the monument. The case of the facade of the convent of Benigànim (Valencia) is an example to carry out this methodology.

Keywords: Traces; Facade; Franciscan; Beniganim; Church.

Resumen

Queda patente que, en cualquier intervención de restauración, hay que extraer datos del edificio y analizar bien esos datos para llevar a cabo los distintos estudios y conclusiones. En este sentido es necesario comprender el edificio y sus partes para determinar una aproximación más fidedigna y metodológica a las conclusiones, que, aunque en muchas ocasiones no dejan de ser hipótesis, son la aproximación más acertada al verdadero conocimiento del monumento. El levantamiento gráfico y la generación de documentación como el estudio geométrico y de trazas realizado en pleno proceso de restauración arquitectónica, nos permite acercarnos a sus autores y determinar el carácter del monumento. El caso de la fachada del convento de Benigànim (Valencia) supone un ejemplo para llevar a cabo esta metodología.

Palabras clave: Trazas; Fachada; Franciscan; Beniganim; Iglesia.

1. INTRODUCCIÓN

Despite seeming unusual, it is in architectural intervention work such as restoration or rehabilitation when the ideal opportunity arises to study a building or architectural element with more detail; firstly, because with the intervention we really get closer to the built object and observe the primary document (Marín, 2010). Secondly, because it is when the necessary elements such as auxiliary resources are available, whether they are scaffolding or elevating platforms.

In addition, it is in the intervention when the pertinent patrimonial authorization for the recovery of the patrimonial element in question is available and when architectural tests can be carried out for a better knowledge and not fall into the long-lasting and expensive archaeological studies.

On the other hand, it is not usual for promoters to have the necessary and sufficient financial means to carry out preliminary studies and gain in-depth knowledge of the constructed building.

Such may be the case of intervention in heritage buildings and whose budget is low, such as the intervention in the convent of San Francisco de Benigànim (Valencia), where works have been underway since 2011 to restore said convent to its original use (Cortés, 2017).

2. OBJECTIVES AND METHODOLOGY

The main objective of this article is to analyze in detail the facades of the church of the convent of Benigànim (Valencia), taking advantage of the special occasion offered by its restoration process. From there, the corresponding planimetric survey, the geometric study, the analysis of the architectural elements and the configuration of the façade are carried out.

The methodology is established by the nature of this type of work, with an exhaustive survey carried out after the project phase (Sender, Giménez & Perelló, 2020). Initially, the data collection and sketches are carried out for its scaling, being able to use digital procedures, being supported by photography. Subsequently, the architecture and its conditions are analyzed to finally determine its geometry and study of the traces. In this process, the search for historical analogues is intended, in order to understand better the architecture produced and the creative process of the intellectual authors and those who executed the work. Finally, possible errors are established to try to rectify, since many of them lead to pathology of the monumental building.



Fig. 1. Facades of the convent of San Onofre de Xàtiva (left) and the convent of San Francisco de Benigànim (right) (Source: authors, 2019).

3. THE CONVENT OF SAN FRANCISCO DE BENIGNÀNIM; RISE, RUIN AND REHABILITATION. THE OBJECT OF STUDY.

In the 16th century, Xàtiva was a splendid city in the Kingdom of Valencia, where Pope Calixto III and Alexander VI came from, and it had numerous religious orders and their convents, as well as beautiful architectural examples. Benignànim was a small town about 20 km away and that depended on it until 1602, marking its history of architecture and its forms of religious settlement. In 1575 (founding charter) authorization was granted for the Minor Capuchin friars of San Onofre de Xàtiva to settle in Benignànim, creating a hermitage made up of five worship spaces inscribed in a diameter of barely 200 m.

With the passage of time, on the primitive hermitage dedicated to Saint Anthony Abbot and San Roque, the original convent of Saint Francis was established, using the primitive factory as a convent church and other possible constructions linked to an old hospital of San Antón. The need to receive health and spiritual assistance justifies that the old medieval hospitals, especially the small ones, coincide with the church and, therefore, with its architectural typology (García-Valldecabres, López-González, Salvador-García and Zornoza-Zornoza, 2013).

The development and evolution of this convent took place in the 17th and 18th centuries, having a decline in the 19th and 20th centuries, first due to the confiscation of 1837 and later conversion into a hospital. The Franciscan community recovered the convent in 1890 and until the first third of the 20th century there were important reforms and extensions directed by Brother Fray Maseo Company, master builder. In this expansion, the convent reached almost 1000 m², also housing classrooms of the Faculty of Theology (Acción Antoniana magazine n° 1045, year 1929).

Finally, the Spanish Civil War (1936-1939) and the works carried out by the Le Patriarche association in 1970 meant ruin for the church by removing part of its roof, and the rest of the convent underwent a transformation that distorted the historical configuration of this monastery; as an example, the disappearance of the refectory or the general looting will be cited. Already in 2010, the Centro de Acogida San Francisco de Asís, linked to the Franciscan Third Order, acquired the property and began in 2011 a process of rehabilitation of the convent, beginning the recovery of the church, the

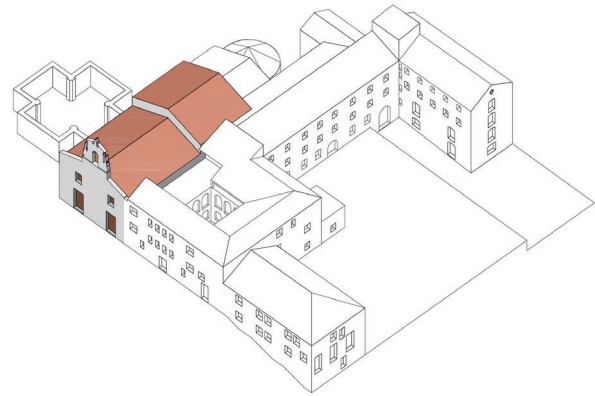


Fig. 2. General volumetry of the convent complex. (Source: the authors).

most important and essential part of any religious center.

Currently, the convent has an area of about 4,000,00 m², of which about 340,00 m² belong to the church.

4. THE GRAPHIC SURVEY DURING THE INTERVENTION

Despite the fact that the intervention project was drawn up with its corresponding plans, the opportunity offered by a work with the provision of auxiliary means -scaffolding par excellence- and access to the most remote place of the intervention was not wasted. Of course, previously, in the previous phase of recovery of the roof and constituting as a basic, fundamental task that should be carried out in any intervention, the graphic survey of the convent church was carried out and on this occasion, it was also possible to carry out a 3d survey with a laser scanner

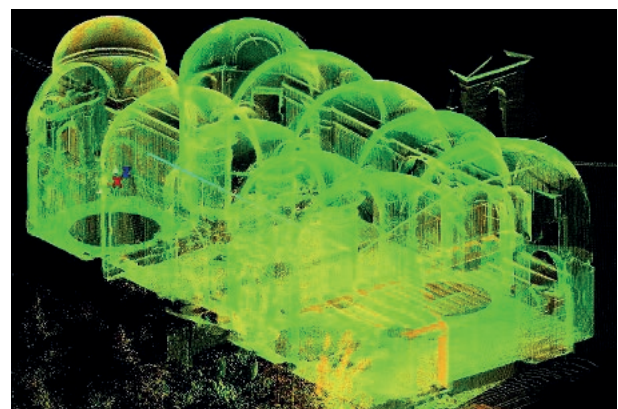


Fig. 3. 3D survey. (Source: the authors).

equipment, Leica brand, model HDS 4050 (Scan Station 2).

In addition to the sketches and surveys, up to four different cameras were used, depending on the time of the study process, which began in 2010 and continues to this day. First, two cameras were used; a compact, Panasonic DMC-FS15, with Leica optics with 5.0x optical zoom; another reflex type, and a Nikon D60 with a Nikon 18-55 mm lens. Subsequently, another compact camera of much better quality has been used, the Nikon COOLPIX P310, with a Nikon fixed lens and 4.2x optical zoom, which allows manual adjustment options when taking pictures, as well as a Fuji X-E1 camera, with various objectives (Fuji 18-55mm, Fuji 70-210 and Samyang 10 mm). Generally, the automatic mode was used in the mass documentation procedures and in the documentation of work itself, while the manual mode, lowest possible ISO and use of a tripod, was chosen in the result photographs.

As previously mentioned, the survey was completed with the completion in a later phase of the project; In turn, the survey of the project has been verified with a survey carried out from the scaffolding and auxiliary means installed to carry out the works. For this, the relevance of some surveys with a laser scanner and photogrammetry programs (Hugin) and photo modeling (Photoscan) have been verified.

Initially, photogrammetry was used to represent the façade, but as scaffolding was available, the same project architect, José Pardo, measured the entire façade with the pertinent details in order to study it better and verify the results; Either because of the construction details of stonework, its modulation and proportion, or even a date was discovered that was incised in the stone in one of its pinnacles, 1743, deducing that it was the date of completion of the church with the construction of that façade. In the intervention, the missing parts were repaired with stone mortar, the

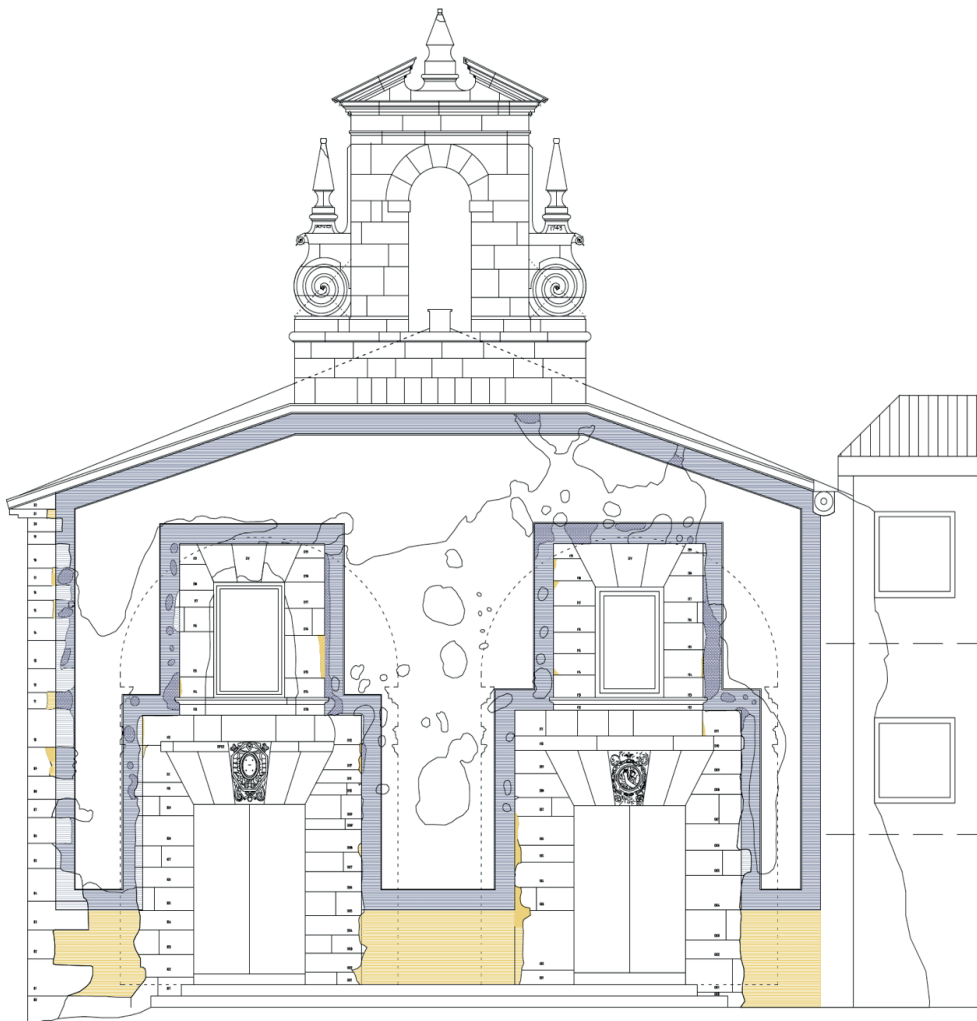


Fig. 4. Main elevation of the church, after carrying out the planimetric survey. (Source: the authors).

gargoyle recovered its functionality by having a zinc plate and solving the humidity problems that were caused on the façade by runoff and, most importantly, the original gargon was discovered and recovered with greyish tones and a dark gray line that framed the holes and outline on the white background, further highlighting the façade. The sandstone was plastered and painted sienna; a regular fake of ashlar stone concealed the numerous stonework settings, never intended to be seen. This lost plaster has been detected at some points, such as the lower part of the door lintels or at some point where the stonework offers an imperfect joint. It was decided, however, to keep the exposed stone.

5. RESULTS

5.1 THE CHURCH: FROM TWO NAVES TO A MODEL HALL FLOOR

In order to understand the characteristics and composition of the church façade, it is necessary to know the plan of the church, due to the spatial relationship between the plan and its elevations.

The church has two naves, something unusual and the primitive corresponds to the one on the side of the epistle, which includes the primitive

hermitage of San Antonio. The one with the gospel was built between 1743-1751. The headers are oriented in the east direction and the “imafronte” to the west, so that the current facade of the temple is integrated into that of the convent. It forms a homogeneous set, despite being the result of different construction moments.

In front of this façade, the rectangular square remains, where the stations of the seven sorrows of the Virgin were once located, destroyed in 1936. The infrequent typology of two naves consequently includes two headers. Each nave has four bays. The southern nave, the oldest, has a polygonal apse covered with a partitioned vault that shows plaster ribs with “ovas” and darts. It has side chapels, only on the Epistle side.

The north nave, from the 18th century (completed in 1743), has a rectangular head topped by an oval dome. Its side chapels correspond to the space between the buttresses, on the Gospel side. It is at its head that the so-called Ecce-Homo chapel is located, which houses the valuable paintings alluding to the Passion and Death of Jesus Christ.

The bays of both naves have a similar treatment, with low vaults, and are based on a classical order typical of the Baroque era. The construction of the north nave reflects the previous bays of the south nave.

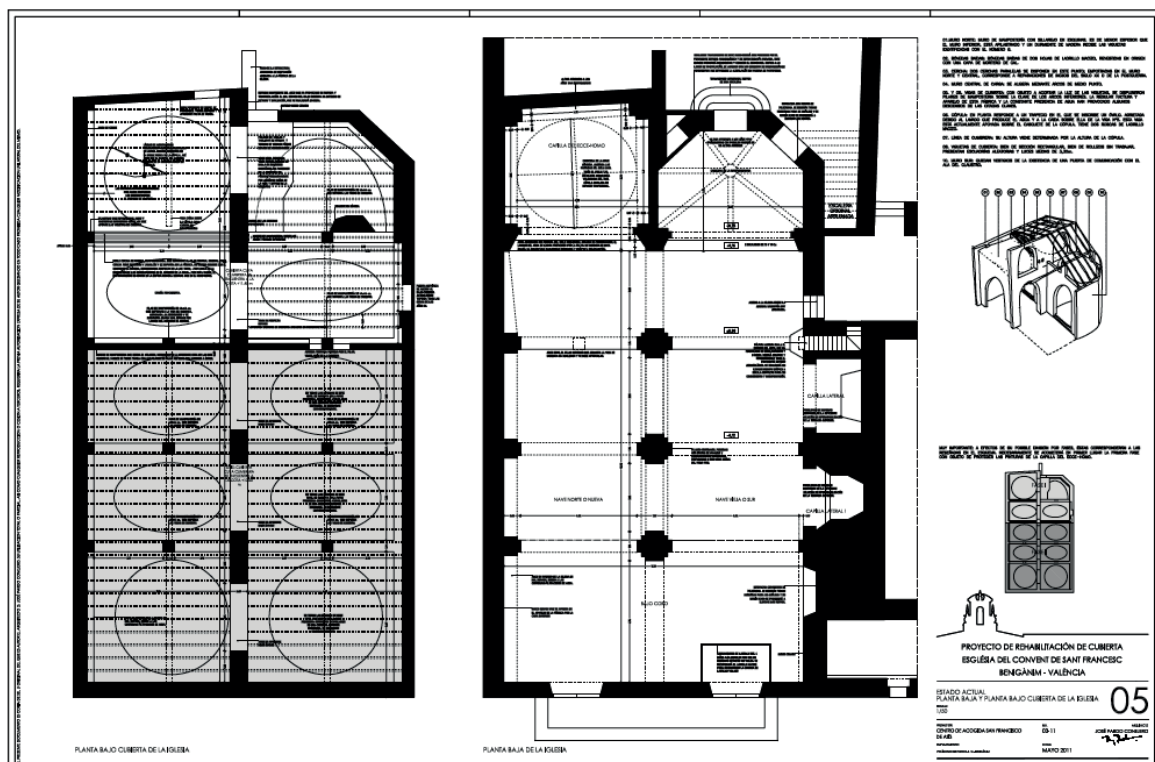


Fig. 5. Floor plan and roof structure of the church. (Source: authors).

The choir bay indicates different dimensions, alignments and decoration, as well as a lack of constructive interlock with the rest of the church, which indicates its later construction. Said constructive difference will make the builders of the main façade of the church have to sharpen their ingenuity to articulate some constructive elements.

5.2 THE COMPOSITION OF THE FACADES

A transcendental aspect, which has great influence on the resolution of the west or main façade, has as its object the development of the north façade. Viewing it from the outside offers us a completely smooth, bare and bare wall, with an apparently random fenestration, which hardly allows us to extract information from the interior of the building. The subordination and lack of ornamentation of the lateral facades in this type of church are notorious. However, a more careful examination will allow us to observe two capital circumstances: the first, the lack of side chapels, which would come to be those of the gospel (excluding in this analysis the frustrated and late attempt to build a large Communion chapel); the other, the conscious location inside the buttresses (very necessary depending on the distribution of roof loads). The first mentioned circumstance was supplied in the interior spaces between buttresses, which acted as chapels with their own affiliation; the second derives from the sensitivity of the moment, which advised against the situation on the outside of this constructive element. This would have given the wall an image of Gothic reminiscences, unsuitable for the aesthetic intentions of its creators.

Thus, the architects of the extension made a series of decisions, on the north façade, of fundamental relevance to the main façade, which denotes a joint conception of them, regardless of their final formal result. Firstly, the reproduction of the north nave maintains the total width of the south nave, the distance measured from the internal face of the pillar to the enclosing wall.

However, the arrangement inside the buttress in the new nave and the maintenance of that total width force their arches to have a different span, even though they retain the same arrow.

The small tolerance whose deviation is a few centimeters is estimated as a mere consequence, inconsequential, of its execution and material



Fig. 6. Photograph of the convent from the north corner (Source: the authors).

reality. The seasoned observer can detect this anomaly, which could be hastily attributed to the clumsiness or ignorance of the architects: a more harmonious result would have been achieved simply by giving the new arch the same light as the old one. However, this first reading – which gives the interior space an importance proper to current or contemporary sensibility – is disallowed when the main façade is analyzed in more detail. Despite the fact that it must have been built later, together with the choir bay, both facades cannot be separated and its conception prevailed over the interior space, as we will see below.



Fig. 7. Photogrammetry of the lateral façade (Source: the authors).

5.3 THE WEST OR MAIN FACADE

The main façade, that of the church and the west wing of the convent, presented a deplorable state prior to the work, the result of unfortunate interventions and decades of neglect. A white plastic paint covered it completely; the numerous gaps in the lining had been filled with grey cement

mortar and the remains of the stone rendering had been almost completely chipped and removed. Thus, the previous state presented many losses, motivated by the following hypotheses:

The gaps in the upper parts and side of the epistle were due to the presence of humidity derived from the incorrect waterproofing of the stone slopes of the “imafronte”. In the specific case of the epistle, the more than probable blockage of the channel and scupper that solves the meeting of the south skirt of the roof with the high wall of the west cloistered wing aggravated these damages.

The gaps in the lower parts owed their cause to the capillary humidity that ascends through the walls. Above all, it occurred at both ends of the façade and to a lesser extent in its central part. The general lack of cladding in the ashlar masonry can be explained by two reasons: one could be the intentional chipping to leave the stone visible; the other, the lack of grip, after the passage of years, between the fine render and the sandstone, which caused it to lack adherence and disappear.

The belfry presented a very worrying appearance: a large part of the mortar on its joints had disappeared and some of its ashlars were in danger of falling off. It showed rooted vegetation in the joints of his factory and numerous lichen stains and general dirt. On its back, a large scratch recounted previous layouts and patches on the cover. In another order of things, the oxidation of the iron cross had partially burst the central pinnacle and the weathervane placed in the postwar period had disappeared.

Once the façade has been analyzed in more detail, it shows four compositional foundations:

A central axis of symmetry that governs the composition, topped by the belfry.

Two parallel axes, subsidiary, that respond to each one of the ships,

A smooth facing, which at its finish shows the two sides of the roof,

An absence of architectural elements that define the façade: its order and composition are entrusted to a painted decoration.

By the first compositional axiom, the façade is organized around a central axis of symmetry. This axis culminates in the belfry, which, exceptionally in the work of the church, is all stonework and

exhibits elements of baroque architecture in use, with particularities of “oblique architecture” (Caramuel, 1678). The complex is finished off with a cross and a weathervane—recently reconstructed based on photographic documentation— whose position defines this imaginary line of symmetry that coincides in the background with the roof ridge. The correspondence between the ridge and the center of the façade is an important fact that should not be forgotten. The development of the entire façade, symmetrical with the exception of the stone scupper that evacuates the impounded waters of the southern façade, rests on a plinth of stone slabs, formed by three steps, the spillage of which generates the support plane of the façade with respect to down.

Subordinated to the main axis, the two secondary axes that respond to each of the ships appear. Undoubtedly, the architects determined the bipartite organization for powerful reasons. Although a single access bay would have been possible, solving some artifice under the choir to redirect the access, two windows were necessary to illuminate the choir, one for each nave. The southern nave, unable to receive light from the southern wall after the elevation of the cloister, only had this west façade as a source of natural light. For this reason, the façade shows a door and window for each nave; the window responds to the level of the choir, which informs us of its relationship to this intended use. The openings are framed with masonry and the lintels are straight. Both doors appear emblazoned: the south, with the coat of arms of the order; the north, with the emblem referring to the five wounds of Saint Francis. This last shield is larger than that of the Order and in its materialization could have represented a restatement error: its larger size and the fact that it hangs from the underside of the lintel suggest this. Above the coats of arms, a simple molding extends the window sill: a “caveto” and a listel give way to the inclined plane of the sill that allows rainwater to drain off. The window openings are rectangular and offer no concession to decoration.

The doorways are simply made of stone, but their composition can be found in Serlio’s treatise, when he defines the rustic ornament, the height must be twice the width, justifying this type of facade to support a great weight and to allow “many door or window openings”.



Fig. 8. Image of the front windows of the church from the inside. (Source: the authors).

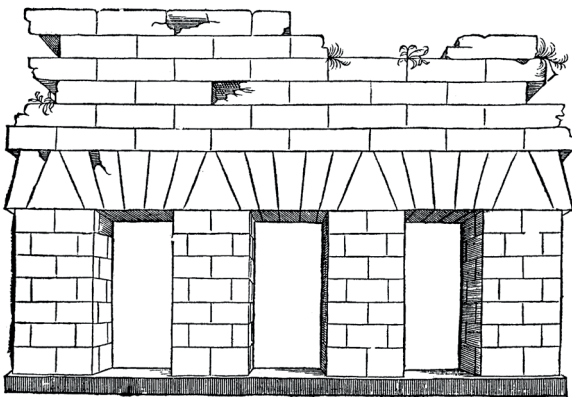


Fig. 9. Image from the treaty of Serlio, page XVI, by Francisco Villalpando in 1552.

Thirdly, the façade facing is completely smooth and devoid of any properly architectural ornamentation. Their order and pattern are determined by the pictorial decoration. The recent intervention has allowed the discovery of these remains, their enhancement and the recovery of their original image. This decoration is based on the following aspects:



Fig 10. View of the two emblazoned portals (left north nave; right south nave) (Source: the authors).

The entire façade was rendered with lime mortar, including the sandstone masonry, a detail that at first went unnoticed.

The façade was not white, but presented a simple polychromy based on three colours: broken white, grayish blue and sienna. The background was made up of an off-white, made with a paint or patina of lime.

The stalls were plastered and painted sienna. A regular quartering drawn on the cladding feigned a regularity that the masonry had not observed. The outer perimeter of the façade –including the belfry- thus appeared framed by a continuous imitation stone curb.

A chevron framed the white plane of the façade. It went around the corners and skirted the stone jambs and lintels of door and window openings. Its width ranges between 31 and 32 cm. Outlined in ash color, its bluish interior divides the off-white background from the sienna color of the chairs, which, as can be seen in the attached plans, in no case have direct contact.

Furthermore, fourthly, the silhouette of the “imafronte” is cut out and shows the two oblique lines corresponding to the two slopes of the roof. In contemporary examples of resolution of the image front of churches in the same geographical area, the layout of the roof of the temple is hidden by means of a mixtilinear finish: the Temple of La Merced, in Xàtiva, or the church of San Francisco de La Granja de La Costera. In both cases the finish is similar: curved forms, with concave and convex alternations, straight parts and crowning with rosettes, balls, etc. The intention in these other cases is to absorb, in the “imafronte”, the

buttress of the first arch of the central nave, since in both churches there are customary side chapels.

One of the consequences of these compositional decisions necessarily implies the prevalence of the symmetrical organization of the façade over the interior organization of the space. The inclusion of the buttress inside and the strict symmetry of the façade with respect to the belfry-ridge axis imply that, from inside the temple, the opening of the new nave is decentered, as indicated in the following sketches.

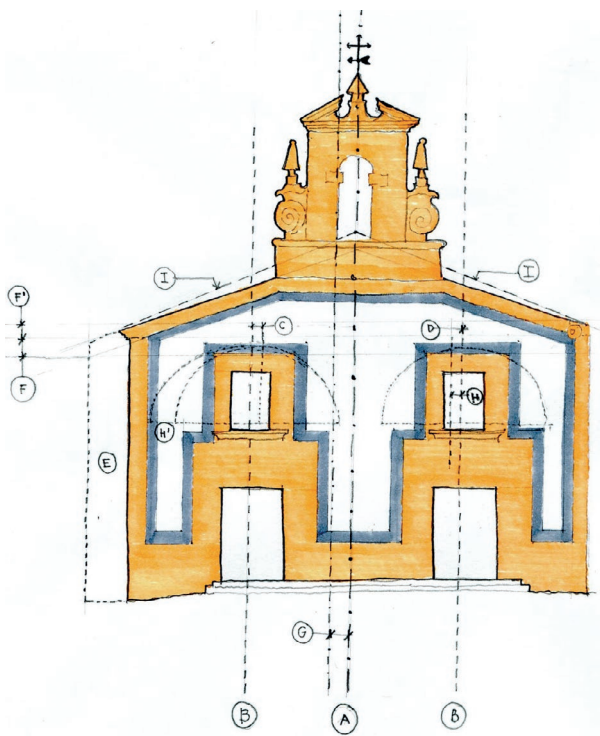


Fig 11. Explanatory sketch of the composition of the west or main façade.

- A. Principal axis of symmetry. It is the axis that orders the whole set; aligns the ridge of the roof with the gable. The arrangement inside the buttress and the reduction in the span of the arch of the north nave allow this alignment between the ridge and the belfry.
- B. Secondary axes. They correspond to each of the two ships. They order the door and window openings with respect to the façade, to the detriment of their interior observation.
- C. Lack of alignment between the openings and the interior of the north nave. The interior arrangement of the buttress and the central symmetry of the west façade require the

eccentric position of the openings of the north nave with respect to the interior axis of the nave. Dotted, drawing of the inner arch.

- D. Alignment between the south spans and the secondary axis. In this case, there is correspondence between the center of the southern openings both with respect to the interior axis of the nave and with respect to the secondary axis of the façade.
- E. Hypothetical conception of the width of the north nave with an arch of the same span as that of the south nave. The extension of the façade that would have meant the provision in the north nave of an arch with the same span as in the south nave is represented in dots; the buttress could have remained inside with the displacement of the gospel wall.
- F. Difference between eave levels. The extension of the total width of the north nave does not allow the displacement of the ridge line, which necessarily remains on the resistant elements that separate the two naves. As a result, the north and south eaves would not be at the same height, a fact that contravenes the first compositional hypothesis: central symmetry. F' and F represent, respectively, the upper level of the eaves (current width) and the lower level of the stone cornice (hypothetical extension of the width).
- G. Displacement between the ridge and the axis of symmetry of the façade. For the reasons stated, in the hypothesis indicated in E there would be a displacement of the axis of symmetry –and therefore of the belfry– with respect to the ridge. This would mean that the finial of the imafrente would not coincide with that of the cover.
- H. Effects of hypothesis E on the interior perception of openings. Hypothesis E would imply the decentering, inside, of the openings of the south nave and the centering of those of the north (H').
- I. Different inclination of the roof and of the stone slopes of the imafrente. The effective layout of the roof shows a slope slightly different from that of the front face, which is attributed to an error in setting out or a lack of coordination between the stonework and masonry cuts.



Fig. 12. View of the west or main façade. Final state. (Source: the authors).

Thus, the final result informs us of the preponderant importance of a consciously searched image, in which the external component clearly prevails over the internal one. Contrary to a first observation, the façade and its interior space are not the result of ignorance or clumsiness in the restatement, but of a clear design criterion: the prevalence, over the interior space, of an exterior form based on symmetry. and in the response to existing structural conditions and water evacuation.

5.4. STUDY OF TRACES.

When we observe a façade of a certain architectural style, there are many things that we are not able to read in it, or that we do not notice if we do not analyze or study them, as would be the case with its composition. In the case of the Church of the Convent of Sant Francesc de Benigànim, although we find a simple façade with a certain austerity, typical of Franciscan or sewer architecture (García Ros, 2000), it would not be opportune to disregard its traces and/or proportions, since they constitute the basis of the formal and spatial control of the project, so necessary for the subsequent material execution.

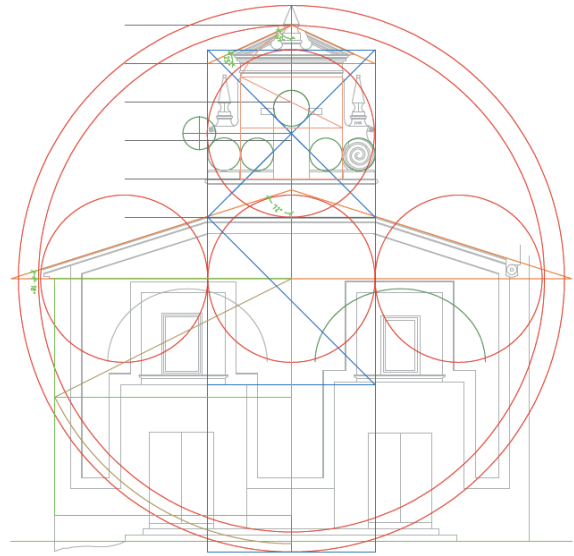


Fig. 13. Traces of the main façade. (Source: authors).

In this specific case, in order to understand the composition of the façade and its relationship with the interior, it is necessary to understand the evolution from the primitive hermitage to this “rare” example of eighteenth-century architecture with two columnar naves, more typical from a civil work than sacred. We could affirm that the trace of its main façade is an amalgamation of simple classicist traces with overlapping geometric figures to match the façade with its interior and the roof. Its construction date, as it is written on the façade, is 1743, that is to say, already in full academic remodeling of Valencian architecture and that this façade is an example of said historical stage.

The façade has been compositionally analyzed and the conclusions of a hypothetical trace are as follows:

1.- An initial circumference of 24-foot radius is drawn, taking 30.125 cm as the base measurement of the foot. The diameter of said circle would be 48 feet, in which three inscribed circles of 16 feet in diameter “fit” inside.

The measure that has been standardized for the Valencian rod is 90.60 cm and comes from the Roman metric measure. The span would correspond to 23 cm. (Ciscar, 1821) and the foot at 30.18 cm (García Valdecabres, 2010). Although in our case the foot would not correspond exactly to 30.18 cm., we take as valid the value of 30.125 as a unitary average of the foot.

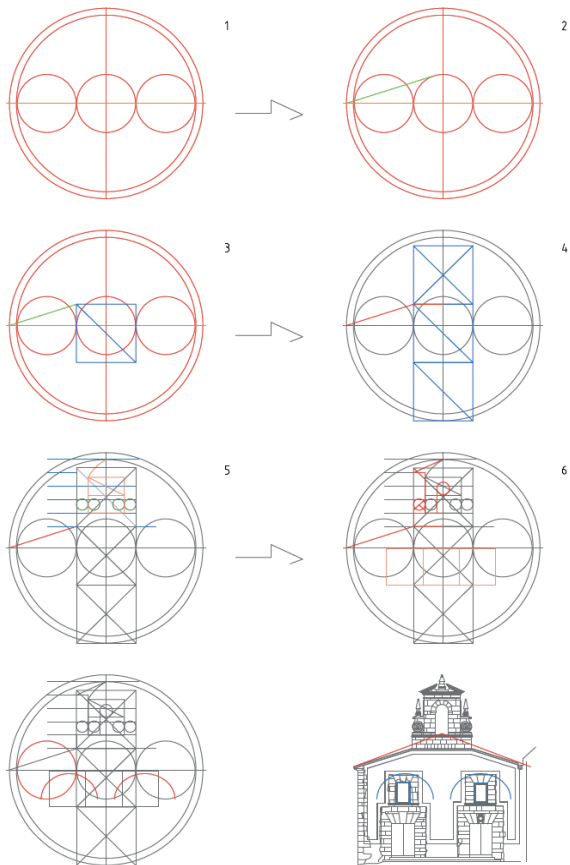


Fig. 14. Sequence of the façade traces. (Source: authors).

Gabriel Ciscar made in 1852 a table with the different measurements and equivalences in the metric system. In the Museu de la Ciutat de València there is also a graphed table with these equivalences to the decimal metric system. (García-Valdecabres, 2010).

There is a second external circumference of 52 feet in diameter and that will serve to define the total height of the composition of the façade and the finishing pinnacle.

Within these figures, the axes are used to mark the symmetry of the façade, even to define heights within the composition and which will be defined later.

2.- It has been verified in the direction of the restoration works the problems that they had to have at the level of execution of the roof and the resolution of the meeting of the imafrente with the roof, because the slope of the roof is greater than that of the imafrente, since the height of the vaults of the church obliges to raise the roof above the imafrente.

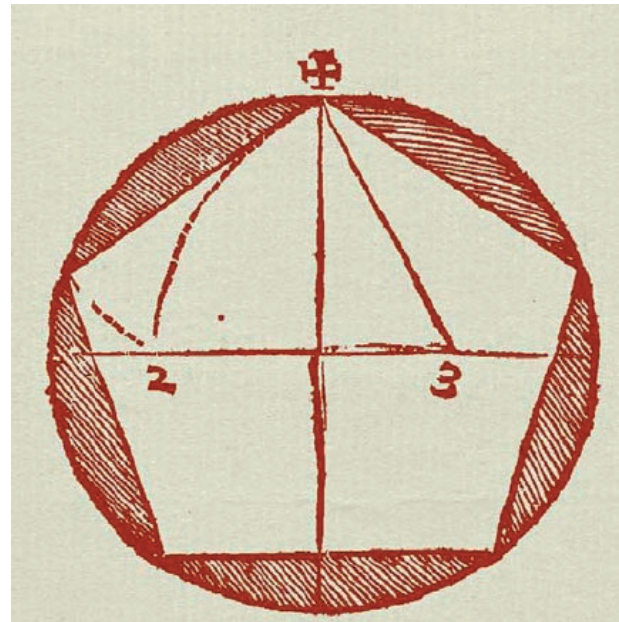


Fig. 15. Trace method: arc split. Sebastiano Serlio, Prime Book of Geometry, 1545.

To define the height of the main body and the slope of the imafrente, geometry is used, since it forms a slope of 18° . As it is an exact value, it is intended to establish with scientific rigor how to obtain said value. If we carry out the operation $360^\circ / 20 \text{ parts} = 18^\circ$, which is the value of the slope of the imafrente. Now, the way to obtain it graphically would be through the pentagon, which is a very simple figure to make, taken from the same opening of the arch, as shown in the figure below by Serlio. From there, the pentagon would be subdivided into 10 and, from this partition, it would be subdivided again, into 20, and from this figure the slope/inclination of the façade is obtained.

3 and 4.- Taking the 16 feet of the circumference as a measure, a square is defined, which at the intersection with the slope line of the imafrente will constitute the part of the horizontal cornice. Taking said square as a measure, a lower and an upper square are drawn, and that the lower one coincides with its base with the trace of the external circumference and the upper part will serve us to define the belfry.

In this composition, one can also start by drawing the squares of 16 feet on each side from the base of the external circumference and, by superimposing the central square, its intersection with the line of the slope of the imafrente would form the cornice of the main body of facade.

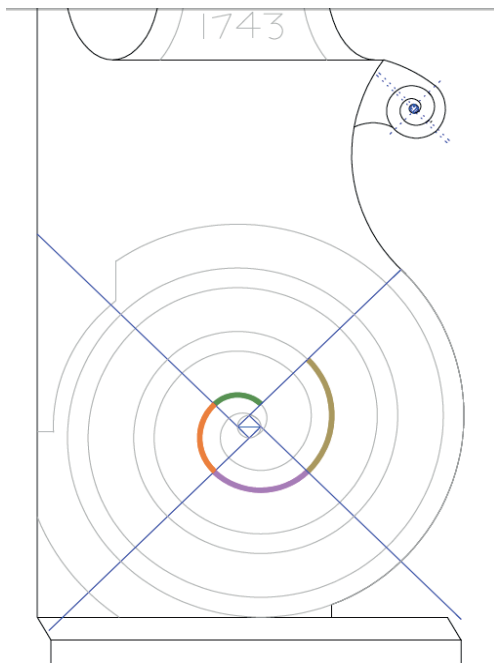


Fig. 16. Spiral geometric figure, layering the belfry. (Source: authors).

5 and 6.- From subdivisions and combinations between elements, the definition of the traces of the belfry is achieved, to highlight, the appearance of the trace of the auron (Pacioli, 1509) to define the intersection to form the pediment.

Another of the details present in the composition of the belfry would be the helicoidal figure, which is defined from the previously mentioned golden ratio.

REFERENCES

- Caramuel, J. 1678. *Arquitectura civil recta y oblicua*. Vegeven: Empreanta Obispal por Camillo Corrado.
- Ciscar, G. 1821. *Apuntes sobre medidas, pesos y monedas*. Madrid: Imprenta Nacional.
- Cortés Meseguer, L., Pardo Conejero, J. 2017. "The covent of Saint Francis in Benigànim: method and restoration". In Besana, D. (ed.) *RICH. Reuse and improvement of cultural heritage*. Canterano: Aracne editrice.
- García-Valldecabres, Jorge Luis. 2010. *La métrica y las trazas en la iglesia de San Juan del Hospital de Valencia* (Tesis doctoral). Universitat Politècnica de València. <https://doi.org/10.4995/Thesis/10251/8381>
- García-Valldecabres, J. López-González, C., Salvador-García, E. Zornoza-Zornoza, R., 2013. "Las estructuras del antiguo convento de la Orden de San Juan de Jerusalén que albergan el lugar en el que estuvo el que fue el primer hospital cristiano de la ciudad de Valencia en el siglo XIII. In *Architettura eremítica. Sistemi progettuali e paesaggi culturali, Atti del Quarto Convegno Internazionale di Studi*, Florencia: Edifir Edizioni, pp. 428-429.

From this definition of traces is when the detail would be minimized until achieving the architectural composition that we can observe today.

4. CONCLUSIONS

Some of the details that they had to rectify in the execution of the work on this façade have to do with the internal vaults and window openings. The dimension of the vaults coincides with that of the circumferences of 16 feet in diameter, previously mentioned, but due to having a perfect symmetry in elevation, the northernmost window, as the façade is viewed from the left, is slightly displaced. This aspect together with the difference in slopes between the imafrente and the roof are two aspects that have been respected in the restoration, since it would have meant the alteration of some parameters that would have been difficult to modify and would have meant a substantial change in its composition.

In attention to the design of the façade, we could affirm that there are defining traces of the different heights and elements, following a geometric approach for its conception, in the same way in the project as in its execution and that said façade is an example of Valencian architecture. 18th century: century of transition in which academicism settled, whose main fundamental bases were the classicist canons.

García Ros, V. 2000. *Los franciscanos y la arquitectura, de San Francisco a la exclaustración*. Valencia: Ed. Asís.

Marín Sánchez, R. 2010. *Fuentes para el estudio de las construcciones históricas*. Apuntes asignatura Construcciones Históricas, Valencia: ETSIE, Universitat Politècnica de València. Inédito.

Pacioli, L. 1509. *Divina proportione*. Venezia: Paganino Paganini.

Pardo Conejero, J., Cortés Meseguer, L., Tormo Esteve, S., Martínez Hurtado, S., Piera Roig, A. 2013. "El eremitorio de San Francisco de Benigànim y la iglesia de San Francisco de Benigànim: de ermita de San Antonio a iglesia conventual". In *Architettura eremitica. Sistemi progettuali e paesaggi culturali, Atti del Quarto Convegno Internazionale di Studi*, Florencia: Edifir Edizioni, pp 390-397.

Ruiz de la Rosa, José Antonio. 2003. "Geometría fabrorum para la estereotomía". In *Revista de Expresión Gráfica en la Edificación (EGE)*, no. 3. Polytechnic University of Valencia. pp. 14-21. ISSN 1888-8143. <https://doi.org/10.4995/ege.2003.12565>

Sender Contell, M., Gimenez Ribera, M., & Perelló Roso, R. 2020. "The importance of drawing in rehabilitation projects. Marxalenes oil factory". In *Revista de Expresión Gráfica en la Edificación (EGE)*, no. 13, pp.78-97. ISSN: 2605-082X. <https://doi.org/10.4995/ege.2020.14676>

Serlio, S. 1445. *Libro primo d'architettura di Serlio Sebastiano nel quale si tratta de primi principii della geometria*. Venezia: Gio. Battista et Marchio Sessa Fratelli.

Villalpando, F. 1552. *Tercero y Quarto Libro de Architectura de Sebastia Serlio Boloñes*. Toledo: Casa de Iván de Ayala.

How to cite this article: Cortés Meseguer, L., Pardo Conejero, J. 2023. "The facade of the church of Saint Francis of Beniganim: the study during its restoration", *EGE Revista de Expresión Gráfica en la Edificación*, No. 18, Valencia: Universitat Politècnica de València. pp.52-64. <https://doi.org/10.4995/ege.2023.19740>.