

THE MIDDLE BYZANTINE CROSS-IN-SQUARE CHURCH
THE PERFORMATIVE CHARACTER OF THE INTERIOR SPACE
WITHIN THE HIEROTOPIC APPROACH

The Byzantine ecclesiastical space has represented a great interest during the last century for different scholars, from architects and art historians to theologians or philosophers. The employed study methodologies mainly targeted art history or referred to iconography and iconology. Unfortunately, Middle Byzantine architecture has been wrongly interpreted because of the development differences between the West and the East. The defective assimilation was determined by the fact that the features of the Western architecture cannot be found in the Byzantine architecture. The small scale, repetition and monotony are some of the traits for which the Byzantine architecture was accused of as compared to its Occidental homologue.¹

The history of architecture approached the object itself, the church, to which there can be added its connection to iconography. The approach must be headfirst completed by the art of movement, potentiated by the art of vestments, on the musical rhythm of the chants, on the chiaroscuro background of light and smoke. All these actually build **the final experience**, the Eucharistic communion, for which the Christian ritual gains meaning, seen outside as completing the artistic synthesis.

The issues of architectural space, from an experiential perspective, have been looked at by researchers, among which the Byzantinist Alexei Lidov who, by the concept of *hierotopy*, intends to create a research discipline in itself, with its own terminology and methodology. Within hierotopy, the creation of sacred spaces is understood as a particular form of art, a synthetic creative project, similar to the work of a film director or interior designer.² The dynamic component, the permanent movement, involved by the light dramaturgy, the olfactory sphere, corroborated with the visual, tactile and acoustic effects are defined by *performativity*, a characteristic of hierotopy.

¹ Robert Ousterhout, "An Apologia for Byzantine Architecture", *Gesta*, Vol. 35, Nr. 1 (1996), p. 21-33, in <https://www.jstor.org/stable/767224?seq=1>, accessed on 17.01.2024

² Andrew Simsky, "The Discovery of Hierotopy". *Journal of Visual Theology*. 2020. 1, p. 18, DOI: <https://doi.org/10.34680/vistheo-2020-1-9-28>, in https://www.researchgate.net/publication/343194251_The_Discovery_of_Hierotopy, accessed on 15.12.2023

The present research intends to analyze performativity from an architectural perspective by the means of architecture. It is in a way a separation into layers but without losing touch with the ensemble. The thesis does not handle the archeological aspects, but the composing principles of the Byzantine ecclesiastical space, the proportioning relations of the space, the characteristics of the parts and the specific details. It also includes the presence of those who perceive, who take part in the Liturgical acts, the clergymen and the laymen. The final purpose is to discover the way in which performativity is being achieved, more precisely the intrinsic factors of space, as well as the extrinsic ones which determine the perception of permanent change. Architecture is seen as an ensemble in which all the elements generating performativity unfold: space, iconography, decorations, light, materialities.

The analysis of the ecclesiastical space requires a denominate study frame. The research limited itself spatially and temporally to a well-known typology - **the Middle Byzantine cross-in-square church**. What are the arguments for this temporal and typological confinement? The Middle Byzantine period defines, both culturally and artistically, the second golden period of Byzantium after the Justinian one. It is confined between two major events, the victory upon iconoclasm in 843 and the Latin conquest of Constantinople in 1204. The cross-in-square typology is emblematic for the Middle period due to the static equilibrium, the spatial characteristics and the reduced scale of the building. How was such a church built so as to justify its listed qualities? Moreover, how can the perception of a cross-in-square church be analyzed considering the fact that no imperial interior has been preserved? For a wholesome experience of performativity, the ritual should take place. How did the most important ceremony, the Liturgy, take place during the Middle period? How was the Liturgical dynamics in such a church? The present-day processions do not follow the path of the Medieval ones which covered the surface of the whole naos, but are being restricted in front of the iconostasis. The processions transmitted the most intense dynamics' experience. After all, how can the perception of a space that no longer performs in its original form can be studied?

Hierotopy as a research discipline targets first of all the experiential sphere. The performativity of the interior space is the result of a perception which gives the beholder unlimited experiences. Perceptually, performativity is for the nonce being studied by the phenomenological method. The phenomenology of sacred spaces can be based upon both the theoretical perspective and the empirical one. The methodological basis for the thesis was the remarkable work of professor Christina M. Gschwandtner regarding the phenomenology of the Orthodox Liturgy. Structured into six chapters, the work analyses the perception of the

Liturgical phenomenon in all its exterior aspects. We can mention the first four which directly refer to the perception of space - *Temporality, Spatiality, Corporality and Sensoriality*.

By the method of presentation and representation there can be graphically rendered the textual descriptions of the Liturgical ritual, as well as the reasoning of some research assumptions and architectural re-buildings. The study aims to discover the significance of the phenomenal changes by interpreting the Greek ancient concepts from the visual field. The method of concept transfer can be applied to a larger extent to the interior of the church. We can make use of the rhetorical texts of the Middle period in order to recompose the original image of the church, to redeem the movement of the beholder and finally to extract details of the performativity of the interior. Experimental methods are employed for the research of the inverted perspective of the architectural shapes, as well as of the performativity of materials and light, with the use of tridimensional models and consecutive photographic frames. It is also being employed the analogy between the results of previous experiments upon the delusional perception and the architectural details specific to the cross-in-square church which assert the same delusional effect. For the studies of interior lighting tridimensional frames from specialised architectural software are being used.

THE BYZANTINE RITE DURING THE MIDDLE BYZANTINE PERIOD

When referring to the Middle Byzantine period we automatically include two defining eras, the Macedonian and the Comnenian one. Even if the two eras represent for the history of Byzantium an improvement in all areas, the differences are major as compared to the morphologies of Antiquity. The urban structure of the capital had mainly become a stage of activities specific to the countryside. The gradual change in the urban character of Constantinople led to the gradual change of the public, collective and open character of the Liturgy into an “introverted, compressed and private” one in the Middle Byzantine period. The transformation of the capital into a Medieval city accordingly led to a decrease of the public manifestations specific to the cities of late Antiquity.³

The processions, among which the most important, *The Little Entrance* and *The Great Entrance*, hallmarked the most meaningful celebration of the Byzantine rite in the early Christian church, *the Liturgy*. The change in the type of patronage and a predilection for

³ Vasileios Marinis, *Architecture and Ritual in the Churches of Constantinople*, Cambridge University Press, New York, 2014, p. 16-17

“private” foundations, especially monasteries in the middle Byzantine period, led to a shift towards more compact churches. The circular movement of the processions parallels the development of the centralized structure of the church, its gravity centre thus becoming the main dome.⁴

The Little Entrance reenacts in a limited and more symbolic way the procession of the entrance of the emperor in the church and the de facto beginning of the Liturgy when the emperor was welcomed with the Gospel by the Patriarch. The entrance is a circular procession with the Gospel from the sanctuary through the northern room, the prothesis, through the northern bay and then through the centre of the church back to the sanctuary, where the Gospel was put on the altar (Fig. 1).

The Great Entrance represented, during the early period, bringing the bread and wine gifts from the *skeuophylakion* building to the sanctuary. During the Middle period, the entrance was reduced to a procession which set out with the gifts from the prothesis, through the northern bay, reaching the western end of the aisle from where it returned to the centre of the church (Fig. 2). After one halt, the procession continued and finished by putting the gifts on the altar.

THE DEVELOPMENT OF THE CROSS-IN-SQUARE CHURCH TYPOLOGY

Mathews qualifies the development of early churches into Medieval churches as a transition from open forms to closed ones. The early basilica was a succession of atriums, aisles, galleries, distinct from the compact and introverted space of the Medieval church.⁵ Along with the rite changes, there can also be remarked the architectural amendments. First of all, the scale of the churches is modified. Following the above considerations, the cross-in-square church typology emerged. The denomination requires a certain explanation. The cross-in square refers to the length equality of the arms of the cross inscribed in a square. Thus, the plan of such a church has the quadrat as a basis.

Following the reasoning of St. Maximos, each space is either the reciprocal of the other one in potency if it precedes it or its reciprocal in update if it succeeds it. Thus, the narthex is a naos in potency, a space of purification and preparation. From this point of view, the wall

⁴ Robert G. Ousterhout, *Eastern Medieval Architecture, The Building Traditions of Byzantium and Neighboring Lands*, Oxford University Press, New York, 2019, p. 261

⁵ Thomas F. Mathews, ““Private” Liturgy in Byzantine Architecture : Toward a Re-appraisal”, p 125, in <http://archive.eclass.uth.gr/eclass/modules/document/file.php/SEAD407/Mathews-IdivtikiesLeitourgies.pdf>, accessed on 8.01.2022

separating the narthex from the naos is a first *templon*, which delimits two spaces with different sacramental meanings.

Unlike the naos of the early basilicas developed linearly on the E-W direction, the naos of the cross-in-square church has a centralised structure. The first image dominating the naos in a Middle Byzantine church is the central dome. Designed in such a way as to be visible from any point of the naos it dominated visually and vertically the whole interior (Fig. 3). Counterbalanced horizontally by the vault of the sanctuary apse, the two points directed towards the material “Sunrise” - that of sun and towards the immaterial one - that of Christ eschatologically define the purpose of the church.

From the proportioning scheme of professor N.K. Moutsopoulos there can be deduced in churches from this typology a directly proportional relation between the height of the arms of the cross and the height of the drum (Fig. 4). The longer the arms of the cross, the higher the drum is. Thus, there can be explained the transformation of the cross-in-square church shape from the Middle Byzantine period up to the Late period. The low silhouette of the Middle churches is given by the reduced height of the arms of the cross, connected with the reduced height of the central dome, as compared to the slenderness of the late churches whose height significantly increases.

The succession of the sections from *Fig. 4*, accomplished according to the above principle, indicates an even more important aspect than a simple guiding scheme for the proportioning of the interior space. Along with the entrance in the naos, the beholder had a different visual experience dependent on the proportion of the interior space, marked by two focal points - the central dome and the dome over the sanctuary apse. The beholder, from any point of the naos, could see up to the highest point of the dome, the icon of Christ Pantokrator. Longitudinally, the beholder could have visual contact with the icon of Virgin Mary (Orant).

The interior image which we nowadays perceive in the Byzantine churches does not reflect their original appearance described by the epoch texts. Many of the decorative elements have vanished because of degradation or vandalism. Along with the established decorative scheme composed from multicoloured marble slabs on the walls and mosaic on the domes, there were some elements and areas different from their current aspect. Gold, silver and precious stones were used to embellish the *templon*, the altar or even the whole sanctuary.

EKPHRASIS AND THE PERCEPTION OF THE INTERIOR SPACE

Information to reconstruct the interior can be found in the *ekphraseis* texts of the Byzantine authors. More than just information, the texts offered a certain perception upon reality. For the analysis of the spatial experience there have been studied *ekphraseis* texts from the Middle Byzantine period, by the help of which the perception of the space by the Byzantine man can be compared to the perception of the contemporary man. For this an explanation is required regarding the way these texts were composed. The comparison with the painting technique seems appropriate for a better understanding. In the study about the theory of virtual space, Or Ettliger admits that imagination, by its creativity motor, interacts with painting and makes the object to be seen and not a combination of colours.⁶ Admittedly, this mechanism is activated by knowledge and implicitly by the framing in a common cultural area. As regards the *ekphrasis*, the rhetorician does not make use of colour, but of word in order to generate, through the creativity motor, the image from the mental space. The familiarity with such presentations led to a certain experience of the described reality for the audience. Familiarity means knowledge of the subject. We see what we know, but at the same time we know as long as we see. The selected texts are suggestive for the subject of the present thesis - the perception of the interior sacred space. The interior space is not equally perceived, certain areas are more emphasised than others. The *ekphraseis* texts such as *The 10th Homily of Photios the Patriarch The Church of the Virgin of the Pharos*, *The 28th Homily of Leon VI The church of Kauleas monastery* or *The 34th Homily of Leon VI The church built by Stylianos Zautzas* offer direct references to the configuration of the interior space, the iconographic programme and the interior decoration. Although the texts reveal that the interior is being perceived as fragmented, the iconographic programme frequently referred to recomposes in the mind of the audience as the rhetorician exposes. On the strength of the relation between sight and knowledge, the recomposition can be achieved only in the mind of an audience familiarised with iconographic art.

On the other hand, the texts do not intend to describe the art object in a documentary way, but rather open for the audience a specific way of analysing what it sees. Therefore, the beholder does not perceive the exterior qualities of the viewed object, but he experiences the

⁶ Or Ettliger, "In Search Of Architecture in Architectural Space. An introduction to The Virtual Space Theory", p.12, in [https://repository.up.ac.za/bitstream/handle/2263/10337/Ettliger_Search\(2007\).pdf;jsessionid=E3243CDB3D78A41AAE39235073C0CCD4?sequence=1](https://repository.up.ac.za/bitstream/handle/2263/10337/Ettliger_Search(2007).pdf;jsessionid=E3243CDB3D78A41AAE39235073C0CCD4?sequence=1), accessed on 14.12.2022

object with a certain emotional engagement. The importance of these texts is unquestionable for the study of the perception of an ecclesiastic space by the Byzantines.

PERCEPTION IN THE BYZANTINE ECCLESIASTICAL SPACE

The Liturgy as a performative act requires a space to unfold. The distinctiveness of the Byzantine Liturgy imposes space considerations in accordance with the ritual. What elements define the distinctiveness of such an architecture so as to accommodate the Christian religion? Although the answer has inexhaustible valencies and which outbalance the subject of the thesis, we shall restrain to those regarding the sphere of spaciousness.

Architecture is consequently dependent upon some parameters but, at the same time, it denounces conventionality. The orientation of the church is not driven by geographical coordinates, but by the movement of the sun. The orientation following the sunrise from the celebration day marks, according to the analysed case study, a variation in the position of the sanctuary at an angle of 71° horizontally, between the summer and the winter solstices, which demonstrates how much can orientation differ according to the calendar date of celebrating the patron saint (Fig. 5). The Liturgical day does not start at 12 PM, but at sunset, with summer-winter variations. Going further, the Liturgical day is divided into Byzantine Hours. When applying the case study vertically, the outcome shown was that the sun rays projected with a variation of an angle of 34° between the two solstices (Fig. 6).

The Liturgical acts are orientated towards the sanctuary. The Liturgical spaces are gradually positioned starting from the narthex towards the sanctuary. Accordingly, there is a gradual intensification of the space experience, starting from the narthex towards the sanctuary, having the *templon* as a limit. The cross-in-square church was designed in a tripartite conformation for all of its morphological elements. The naos could be divided into 9 bays, through 4 horizontal axes and 4 vertical ones, equidistantly disposed. The four central columns are positioned at the intersection of the first and third axis, with its vertical correspondence. A distance of 2 modules results between the pillars and 1 module between the pillars and the walls. Furthermore, extending the proportioning by 1 module, towards East and West, the sanctuary and the narthex thus take shape (Fig. 7).⁷

⁷ Nicolae C. Chifăr, M. Păsculescu, "The 10th-to 11th- Century Pillard Church in Alba Iulia: Reconstruction Proposals", în *Christianization in Early Medieval Transylvania*, Ed. Istrate D.M, Mureşan D.I, Rustoiu G.T, Brill, Leiden, 2022, p. 362

The tripartite configuration is not merely concerning the plan, but also the church elevation. As Otto Demus distinguishes 3 different zones in the interior iconographical decoration, a tripartition of the whole spatial entity could also be remarked. The first register is made up from the lower part of the walls, the second register from the upper part and the third from the vaults. If we rotate the *simplified tripartition scheme* of the plan vertically, we can draw the elevation following the same proportioning rule. The first axis would define the first register corresponding to 1 module, the second axis the second register corresponding to 2 modules, the third axis the third register corresponding to 1 module. The elevation would result in a square base below the semicircle of the dome (Fig. 8).

From a Heideggerian perspective, the experience of space is not abstract but connected to the relation of objects with a certain space significance, as being “near” or “far”. Similarly, the ecclesiastical space means “near” or “far” during the Liturgy. The Liturgical space is differently experimented, some areas are more intensely experimented than others.⁸

Considering the analysis methodology exposed by Gschwandtner as a basis and applying it on the text of the Homily of Patriarch Photius can lead to a conclusive result. Entering the narthex, the interior of the naos is experimented as being “nearer” than even the space of the narthex where the beholder is. Walking through the naos, the altar, with the whole structure of the ciborium, is “nearer” to the beholder than elements which are dimensionally at a smaller distance, such as the entrance door or the four central pillars. Experimentally, the marble slabs covering the central pillars are “further” than the stone of the floor, at length described in the text of the *ekphrasis*.

These two poles of spatial experience do not exclude the dimensionality of space, but adapt it to something specific, related to the human body. The interiors of Middle Byzantine churches are of a small scale. In order to explain this, we launch the statement of Peter Zumthor according to which the term of *scale* sounds far too academic. This comes from the fact that the architecture object is being analysed without a personal implication, from the outside and without inclination for the space. We therefore prefer defining this dimensionality as related to the human being by *intimacy levels*, a term used by Zumthor in order to emphasise the fact that the body of the construction exceeds the beholder in largeness.⁹ What astonishes at the interior of a cross-in-square church is monumentality, even if referring to a small scale. The way the interior is proportioned confers it a human scale. Actually, it means passing through spaces

⁸ Christina M. Gschwandtner, *Welcoming Finitude, Towards a Phenomenology of Orthodox Liturgy*, Fordham University Press, New York, 2019, p. 66

⁹ Peter Zumthor, *Atmospheres*, Birkhauser, Basel, 2006, p. 49

with different intimacies (Fig. 9). Whether the beholder is hidden in a corner of the room between the arms of the cross, near a column or in the middle of the naos, the visitor experiences different intimacy degrees.

THE INVERTED PERSPECTIVE OF THE INTERIOR SPACE

In his study from 1919 Pavel Florenski supports the validity of the Byzantine iconographic representation, using a different kind of perspective, legitimate as compared to the linear one and considered as the only valid method of representation in painting since the Renaissance.

Florenski challenges the infallibility of the linear perspective and defends the inverted perspective, in terms of how perception should be graphically represented. The type of representation allows the visualisation of multiple sides of architecture at different angles. In a study about sacred space, belonging to professor Augustin Ioan, we point out one phrase: *“Furthermore, this light directioning in the Sacred Space keeps it somehow <rooted> to the exterior space. Because of the way the space is illuminated, the church space seems like an exterior space [...] The inner walls of the church look like facades, with their colonnades and statues, thus demarcating a public Place”* (author’s translation)¹⁰. A manuscript from the 12th century reveals this idea iconographically (Fig. 10). The Ascension scene is rendered in the image. The scene takes place inside an architectural space which, at a closer look, proves to be a 5 dome basilica, after the model of the church of the St. Apostles from Constantinople.

The rectangular area belongs to the earthly sphere, the area of the arches to the heavenly one. The representation reflects the portrayal of the saints in icons on the lower register of the walls and the main biblical scenes in the dome area. The manuscript thus reflects the image of the church interior compressed to a single plan, that of the facade. The church, on the other side, is oriented towards not one single sunrise, but two. Horizontally, the sanctuary is oriented towards the sunrise from the day of the church celebration and vertically towards “The Upper Sunrise”, culminating in the central dome with Christ Pantokrator.

We resort to an extrapolation, stressing the architectural representation which clearly explains the paradigm of the interior perception during the Medieval period. The sketch of a

¹⁰ Augustin Ioan, *Retrofuturism, Spațiul sacru astăzi*, Paideia, Bucharest, 2010, p. 129-130

house in Athens from the 12th century (Fig. 11)¹¹ explains the hypothesis of this perception paradigm: *the facade, the floorplan and the section are combined*.

It is a representation which superimposes the plan with the facade. We thus introduce a new concept, the *plan-facade*, in order to explain the above mentioned perception paradigm. The model of a church has been presented during an exhibition from the Symposium *The Days of Byzantine Art*. It was rotated at an angle of 90° from the horizontal line so that the model slab, following the church plan, was perceived as a facade (Fig. 12). Therefore, the two orientation vectors, the horizontal sunrise and the vertical one, were reversed. The main dome, as a space for the Christ Pantokrator icon, became the focal point of the horizontal perception, while the apse of the sanctuary became the focal point of the vertical perception. This experiment empirically rendered the *plan-facade* concept. Returning to the manuscript, the facade from the image can be regarded as a plan in which the vertical sunrise is represented as in the photography of the model with the image of the Pantokrator in the centre.

The inverted perspective representations of architecture as a whole, merging the interior with the exterior, can be justified by the Liturgical experience from the inside, but preceded by the experience of the outside. In this respect, the facades are the “negative” of the interior walls. When composing the facade, the typos of a person or group of people is argued by the shape and disposal of the keyhole windows on the base of some metallic processional crosses (Fig. 13). The window or the door are projected both inside and outside, intertwining the two spaces. As a typos, the holes create a wrought iconographic programme, under an encrypted form that can be plenary perceived when walking inside. Depending on the window type, simple, double-light or triple-light, an iconographic scene can be recomposed from one, two or three persons (Fig. 14). In the end, the church is like a *filigree*, built out from its structure and the multitude of windows, in the same building way of the bronze cross bases. Extending the topic, all the composing elements of the exterior prepare the perception of the interior space in a synthesised, generalised and nevertheless encrypted form.

ACHIEVEMENT PRINCIPLES OF THE PERFORMATIVITY OF THE INTERIOR SPACE

The research intends to analyse what particularities of the above mentioned elements represent stimulation principles of performativity. The interdependence relation between the

¹¹ Evangelia Hadjityrphonos, “The Question of Architectural Planning and Representations in Byzantium”, p.144 in <http://www.nisandbyzantium.org.rs/doc/zbornik8/PDF-VIII/09%20Evangelia%20%20Hadjitryfonos.pdf>, accessed on 15.01.2023

architectural shape and the icon is separately studied by the iconographic areas. Following the storyline of the *ekphrasis* text from the Homily of the Pharos, there have been outlined the main areas for the created visual experiences. The basis iconographic programme of the central dome¹² has a tripartite structure, built upon 3 superimposed zones. The way in which these zones are distributed on the surface varies depending on 3 factors: the size of the dome, the architectural configuration and the number of windows.

All these three factors are quasi dependent. Horizontally, the central dome needs to be subdivided so that the correct proportioning of the images' areas can be achieved. An oversized icon of Christ Pantokrator shall lead to a limitation of the middle zone and therefore to an undersizing of the angels (Fig. 15). The opposite would be a reduced perimeter of the Pantokrator and an oversizing of the middle zone (Fig. 16). In a cross-in-square church the central apse of the sanctuary is the next focal point of the interior and it is the place dedicated to the icon of Virgin Mary, the most worshipped person in Christianity after that of the Saviour. The choice of the iconographic typology of Virgin Mary is dependent upon the decoration of the apse.

The iconographic programme unfolded from the period right after the iconoclasm until the 12th century when the *Dodekaorta*, the 12 feasts' cycle, was founded. In the Middle Byzantine churches of imperial origin, unlike in the late ones, the surface of the walls did not allow the iconography of the feasts to unwind because of the almost wholesale marble coating. The feasts' cycle was supposed to find its place on the surface of the main vaults of the naos, following very well established criteria. The scenes were rendered two by two, symmetrically to the axis of the vaults of the cross arms, thus representing 8 out of the 12 feasts. In the *ekphrasis* of Leon VI about the cross-in-square church built by Stylianus Zaoutzas, the scenes are chronologically depicted as the author himself declares¹³: The Annunciation, The Nativity, The Presentation in the Temple, The Baptism, The Transfiguration, The Raising of Lazarus, The Crucifixion, The Burial, The Anastasis, The Ascension. These scenes required great surfaces so as to be observed, considering the maximum positioning height of the dome and the plain surfaces for avoiding the unwanted distortions (Fig. 17).

The marble decoration of the walls was accomplished by the delimitation of horizontal registers following the height, as in the iconographic programme. Whether of marble strips differentiated by colour or of carved stone corbels, these registers superscribed the icons to be

¹² Here the drum is also included

¹³ See note 119 from Mango Cyril, *The Art of the Byzantine Empire 413-1453*, p. 205

integrated in this revetment. One cannot affirm whether the proportion of the icons determined the horizontal subdivision or whether, on the contrary, the subdivision determined the size of the icon. Undoubtedly, the two elements were strictly interconnected (Fig. 18). Moreover, the subject could further relate to the inner elements which gave rhythm to the wall surface, such as the windows or the niches. Similarly, these also matched in the registers resulting in the marble revetment.

Taken as a whole, the decoration of the interior was the result of a modulation realised by the help of all constituent elements - cornices, strings, separation straps, base mouldings. All however emphasised a structure modulation resulting from the proportioning of the interior space. **Starting with the central dome and concluding with the plain wall surfaces, the spaces confined by these constituent structural parts were in a multiple, respectively submultiple proportion to their adjacent ones. This modulation could be theorised upon as being the recipe of a correct integration of so different constituents - mosaic, marble, windows, doors, pillars, archivolt, without leading to an inarticulate ensemble.**

THE *CHOROGRAPHY* OF THE ARCHITECTURAL SPACE

The study of the scholar Nicoletta Isar intends to explain, through the *chorography* concept, the quality of a space (*chora/choros*) to be sacred (*hieros*), conditioned by its movement state (*choros*). The greek homonym *choros*, with its accent variations, designates both the space and the idea of collective coordinated movement, more specifically, a regular circular movement. Chorography is built on the presumption of the dynamic relation between *chora* and *choros* as generating *hieros*.¹⁴

References to the perception of the interior space of the church in the Homily of Patriarch Photios reveal that “the sanctuary revolves [...] through its continuous turns and movements in all directions”. The movement of people repeats the path of a ritual, *choral* dance, having circularity around an axis, the altar, or right in the middle of the church, in space of the naos, during the main processions. This *choral* dance, into which both the clergy and the laymen are involved, engages performatively a *chorography* of the interior shapes. It is true that the shape itself has this *chorographic* valence. The main dome described in the above

¹⁴ Nicoletta Isar, “Chorography (Chora, Choros), A Performative Paradigm of Creation of Sacred Space in Byzantium”, p. 60 in http://hierotopy.ru/contents/CreationOfSacralSpaces_02_Isar_Chorography_2006_EngRus.pdf, accessed on 12.02.2024

mentioned *ekphrasis*, through “the concave segments near the top of the hemisphere”¹⁵, reveals that it is a pumpkin or ribbed dome. This type of dome, by its very particular execution, with sphere elements, leads to a sinuous surface similar to the pumpkin peel, wherefrom the *pumpkin dome* term.

As related to the movement subject, this type of dome bears a special relevance. Constructively, the pumpkin dome is composed out of a multiple of 4 sphere segments, requested by the number of windows to which one segment corresponds (Fig. 19). The surface, when in contact with light, generates very bright areas on the centre of the segments and dark areas on the margins, so that altogether there results a very spectacular alternance of light and shadow in a radial disposition, with its centre at the top of the dome.

An experiment made by two researchers, Jocelyn Faubert and Andrew M. Herbert¹⁶, proved that the circular repeated models, at the alternance of the luminance gradient, lead to a movement sensation when looked at peripherally. The effect is called *peripheral drift illusion* (Fig. 20). The repeated movements of the eyes or blinking sustain this illusory movement generated by constant resets of the viewed image.

The peripheral drift illusion can be applied on the pumpkin dome at the cross-in-square churches. The circular movement effect of the dome segments is similar to that from the experiment, going from the bright area to the dark one. The bigger the contrast, the more perceivable the illusion. At a longer gaze, the dome enters into a *chorography* stimulated by the shape typology which thus leads to light contrasts.

From an iconographic perspective, the *choral* dance of the angels, performed during the Heavenly Liturgy, is practically materialised in the pumpkin dome, whose segments are occupied by the heavenly creatures (Fig. 21). Architecturally, this theological perspective is transposed in the spatial and iconographic configuration. The whole space is built around these two orientation axes, the central dome and the sanctuary apse. All the martyrs, apostles, prophets and patriarchs form an ecclesiastical unity in a *choral* dance, performed in space and which implicitly involves in a *choros* around the central dome. On the other side, at a smaller scale, the sanctuary apse, by its semicircular shape, determines a *choral* disposal of the hierarchs painted on the walls. All the martyrs, apostles, prophets and patriarchs form an ecclesiastical unity engaged in a choral dance, performed in space and in the *choros* of the central dome.

¹⁵ Cyril Mango, *The Art of the Byzantine Empire 413-1453*, p. 486

¹⁶ Jocelyn Faubert, Andrew M. Herbert, “The peripheral drift illusion: A motion illusion in the visual periphery”, *Perception*, 1999, vol. 28, p. 617-621

The horizontal surface of the floor follows the concept of the horizontal surface of the walls. A widespread Byzantine floor model was *opus sectile*, a technique known since the 2nd century B.C. This involved cutting some marble or even glass pieces into anthropomorphic, zoomorphic, floral and geometrical models, thereafter arranging them on a different colour background. A characteristic of these types of floors was the preference for rather geometric motifs after the 10th century, especially the circular ones which combine and intertwine.¹⁷

The pattern is generated by the tangent of each circle to the point of the end diagonal of the neighbouring circle. Therefore, the whole composition is interconnected, so that all appear as mating gears, where the rotation of one gear moves the entire assembly. Two features define the concept of the floor of the Iviron monastery, concentricity and interlinking, features that induce a sort of internal movement through the carefully studied combination of motifs and colour alternation¹⁸. The decorative composition of the central zone could represent a ground plan of a cross-in-square church with five domes, whose centre projects exactly under the Pantokrator dome¹⁹.

The association of the specific model of this floor typology with the plan of a cross-in-square church, according to the above thesis, leads to an analogy between the inner movement of the floor and the movement of the whole church and can also refer to a rotation of the inner shapes, thus foregrounding the statement of Patriarch Photios in relation to the spinning of the sanctuary (the church).

The psychologist Akiyoshi Kitaoka developed a series of images, called *rotating snakes* (Fig. 22) in which the effect of illusion movement is very present. Looking at the image, the circles seem to revolve in opposite directions. Movement is perceived where the coloured segments move from black towards blue, white, yellow. It is actually being indicated that colours are not definitive for stimulating movement, the rotation effect appearing also in the monochrome version of the image. Thus, certain luminance and contrast models prove to betray the visual system by transmitting the movement sensation.²⁰

A foremost argument in defending the perception of movement in the case of such a floor is the solid assimilation of the *choros* concept as movement in the Byzantine mindset. A

¹⁷ Dimitrios A. Liakos, "The Byzantine Opus Sectile Floor in the Katholikon of Iveron Monastery on Mount Athos", *Zograf* 32 2008, p. 37, in https://www.academia.edu/2359902/The_Byzantine_Opus_Sectile_Floor_in_the_Katholikon_of_Iveron_Monastery_on_Mount_Athos_Zograf_32_2008_37_44, accessed on 28.06.2023

¹⁸ *Ibid.*, p. 44

¹⁹ *Ibid.*, p. 42

²⁰ Vilayanur S. Ramachandran, Diana Rogers-Ramachandran, "A Moving Experience", in http://packlab.mcgill.ca/ramachandran_snake07.pdf, accessed on 06.07.2023

broad view is proportional with the knowledge level. The more we know the more we see and the beholder is looking for a certain detail at a certain knowledge level. Analogously, the two arguments defend the thesis about the perception of movement in the case of a floor with intertwined models, considering the conceptual basis which generated such a floor typology.

THE CHOROGRAPHY OF LIGHT

The change of the distance perception of an object in the church depends on the amount of light which enters. Etymologically, *chorography* defines, according to Isar, an inscribed space or the action of inscribing a space through dance. In the centre of the *chorographic* concept obviously stands defining the “trace” of the *chora*-space inscription²¹. The concept is being further extended to another primordial element which inscribes the space - light. As regards light as leaving “traces” by the movement of the flame, in the case of candles and candela, we intend to analyse the way *chorography* was achieved through light, inside a cross-in-square church.

The term *choros* is mentioned in the Typika of two Constantinopolitan monasteries from the Comnen period, The Typikon of the Kecharitomene monastery from 110-116 and the Typikon of the Pantokrator monastery from 1136. The Kecharitomene monastery of Virgin Mary was founded by the empress Irene Doukaina, the wife of emperor Alexios I Comnenos, probably during the first years of the 12th century. The *choros* probably was, even if today it has disappeared, a polygon of 16 sides or an octagon, considering the specification from the Typikon that 16 candela had to be lit during the feasts. The 16 sided-polygon of the *choros* would be justified by the correspondence with the identical number of sides of the main dome of the southern church of the Pantokrator monastery.

The question which thus arises refers to the appearance and functioning of these objects which lit the interior of Medieval churches. During the Middle Byzantine period the use of candles became widespread and it was combined with candela, thus forming a single apparatus which apparently does not apply to the early period.²² The monastic inventories and rituals are very important sources for building an image of the elements of interior furniture.

²¹ Nicoletta Isar, “Chorography (Chora, Choros), A Performative Paradigm of Creation of Sacred Space in Byzantium”, p. 60-61

²² Laskarina Bouras, M. G. Parani, *Lightning in Early Byzantium*, Dumbarton Oaks Research Library and Collection, Washington D.C., 2008, p. 5

In the case of the cross-in-square churches, similar to the Athonite churches, the central *choros* was without any doubt the apparatus that dominated the interior through light. We can assume that then, as well as now, monarchs with long rods with a clutch at the end moved the *choros* in a slow swinging, alternatively catching the opposite corners, but the rituals do not offer such details.

For a generic plan of a church, the lights have been arranged in two categories, candela and candles, according to the description from the Typika (Fig. 23). Where data has been ambiguous, some positioning assumptions have been launched, according to the typology of lights in churches where the Liturgical tradition has been continued, like in Mount Athos and Serbia. For example, from the prescription of the great feasts, it can be deduced that the *crateres* lights, connected to the *choros*, were replaced by polycandelon, even if this is not directly mentioned. Analogously, as in the case of the model from the 13th century from München we can somehow understand the complexity of such a device. Apart from the practical function of offering light, the *choros* from München was itself a decorative object which furnished the interior. Finally there resulted a spatial structure offering differentiated light on several plains and for several height registers.

The plan leads to a concentration of lights unto the focal points of the interior which provide utmost intense visual experiences, the central dome marked by the *choros*, the central *templon* and the lateral domes with candela and candles lit by epistyle and the altar. Naturally, in this case, light stresses the perception of the interior space towards these areas. The intensity of light from the central area is restricted around the arms of the cross, afterwards intensifying on the *templon* and the altar. The areas between the arms of the cross, together with the prothesis and the diakonikon, are assumed as being diminished in light, even if references cannot be found in the typika.

The project of illuminating the central dome by candles, confirmed in the typikon, is in accordance with the general artistic and theological frame. During the development of the Athonite *choros*, Isar further approached other Liturgical manifestations, theological precepts and iconographic programmes. One of them is the *choral* procession of The Great Entrance which around the 12th century started to dominate the iconographic representation of the drum. It was a heavenly Great Entrance where the role of the priests was taken by the heavenly creatures, while the role of the bishop was taken by Christ. The scene is doubled and represented on the circumference of the drum symmetrically from the East-West axis, around the altar (Fig. 15).

Parietally connected to architecture, the iconography is just the same doubled by light. The *Chorography* of the saints disposed in a “dance” on the architectural shape is strengthened by the *choral* disposal of lights on the drum and *choros*. The main scenes from the arches of the arms of the cross, following eschatological precepts, are highlighted by *candela* and candles, especially disposed for this purpose.

Thus positioned, the whole light device of the church lays stress on the perception of images, more obvious on circular shapes, in a continuous *chorographic* dance. The intensity of perception is gradual, determined first of all by the activity or inactivity of the ritual.

As regards the perception of light through the architectural shape, the most intense experience of the beholder is obviously generated by the central dome. A passage, extremely difficult from the point of view of the created experience, but which can risk being used up only symbolically, belongs to the well known *ekphrasis* of Procopius, praising the cathedral of St. Sophia.²³ The text refers to the main dome, dematerialised and suspended from the Heavens by a golden chain. This impression is not only given through atmosphere, but the effect was actual and created by architectural details, specifically used for this purpose.

If the thesis of Potamianos²⁴ emphasises upon the way light diffuses by the two architectural details, the windowsill reflector and the specific dome profile, we wish to continue the study upon the perception of the dome, mentioning another architectural element, essential for this perception. The cornice from the basis of the dome or the drum, in the case of the Middle Byzantine church, plays a fundamental role in perceiving the dome as detached from the church body. The mentioned churches are conceived in such a way so that the central dome and, more precisely, the Pantokrator icon can be perceived from any point of the naos. At a cross-in-square church the windows are right at the basis of the drum, above the cornice. The spayed sill, on top of its reflecting characteristic, was conceived so as the beholder to observe, upon looking upwards, only the empty window. In the detail from *Fig. 24* the cornice is distancing the looking line so that the eye, avoiding the spayed sill, observes the empty windows. Thus, when the solar rays project horizontally at the window level one light plain sections the church, leading to the experience related by Procopius (*Fig. 25*). The great number of windows is thus justified, so that the distance between the windows diminishes, while in the case of maximum illumination the windows seem interlinked. One must bear in mind that the

²³ Cyril Mango, *The Art of the Byzantine Empire 312-1453*, p. 75

²⁴ Iakovos Potamianos, *Light into Architecture: Evocative Aspects of Natural Light as related to Liturgy in Byzantine Churches*, doctoral thesis, Michigan University, 1996

Liturgy was held much earlier in the Byzantine period than now, so that the sun rays were projected at smaller angles than during current liturgies.

Both in the case of St Sophia and in the case of the Middle churches, the illuminance effect was intensified by the extraordinary ability of the mosaic to reflect - the golden pieces, at different angles, directed the light towards all the areas of the dome. The undertaken experiment with the scale model of a church with a pumpkin dome proves the dematerialisation effect obtained through light. The cardboard surface of the dome was golden gilded to draw nearer to the reflecting qualities of the mosaic. The scale model was exposed to sunlight between 5-6 PM. A web camera was introduced inside the model to register the light variations during this interval. The image sequence from *Fig. 26* reflects how, depending on the incidence degree of the sun rays, the light practically wrapped the specific shape of the dome, thus conveying the perception that, at its utmost brightness, *it shines like the Heavenly Kingdom*.²⁵ The surface of the gold leaf is smooth, but the mosaic amplifies the effect by an infinitude of piece surfaces arranged at different angles. The comparison between the two domes of the Chora church from Constantinople is relevant for light distribution depending on the coverage surface. The first dome, situated in the narthex, a pumpkin dome and covered in mosaic, illuminated by 8 windows, concentrated the light on the centre of the dome segments. The second dome, ribbed, with 12 windows for each of the dome segments, has an uniform illumination.²⁶

The *choral* shape of the drum imposes the circular arrangement of the windows. Their number, as a multiple of 4, can differently determine the *choral* interlinking. 4 windows on the axes of the building seem somehow freestanding, the interlinking effect being less intense. In the case of a dome with 16 windows or even more, 40, the effect is significantly increased. The window can be identified as the typos of a person. From such a perspective, the *choral* interlinking of the windows is superposed on the whole circumference of the drum as a graphical frieze between the architecture of the drum and the icon of the mosaic. Thus framed, the windows of the dome enter the *choral* dance performed by the saints represented on the corresponding interspaces.

The window, apart from its quality of architecture element connecting the exterior to the interior, also has the quality of bringing natural, solar light to the interior. The window, *chorographically* speaking, inscribes with light the space of the naos and especially the space

²⁵ According to the *ekphrasis* of Paulos Silentarios

²⁶ Liz James, *Light and Colour in Byzantine Art*, p.5

of the central dome. The window is a singular element that cannot be approached individually in the church space. All the dome windows form an apparatus, just like the *choros*, and are thus being perceived, like a string on the circumference of the drum. Inscribing with light the dome area offers the peripheral drift illusion applied on a pumpkin dome (Fig. 26).

The light has a double role inside, that of inscribing, previously discussed, and that of reversing the perception of shape. If previously the inverted perspective was approached technically, rather using the instruments of the reversed representation of architecture, that is plains, facades, pictorial representations, here light is seen as the generator of the inverted perspective of the interior shapes. In the image sequence from Fig. 26, the central area, dominated by the Pantokrator icon, seems closer to the beholder, that is at a lower height compared to that of the extremes, when actually the Pantokrator icon is furthest from the beholder. This effect is generated exactly by the spread of light on the surface of the concave segments of the dome. It is practically an optical illusion generated by the game of light and shadow on the curved surfaces which changes the perception of concavity into the illusion of convexity. This technical practice of the pumpkin dome is according to the framing principle of the Byzantine icon.

THE PERFORMATIVITY OF MATERIALS

In the churches which redeem the imperial esthetical tradition, the most encountered materiality is marble. Byzantine revetments became over time “atectonical”, looking more like some carpets, abstract compositions which put forward the natural beauty of marble.²⁷

Marble revetments in Middle churches were made up to the level of springing. The arrangement of the marble slabs followed the architectural organisation of the interior space. The subdivision into three registers kept the space scale and did not overload the general decoration. The example of the interior of the Medici Chapel in Florence demonstrates the perceptive effect of an excessive subdivision of the walls. The image reveals an interior overloaded decoratively and which does not follow the monumental scale of the building (Fig. 27). The decorative effect is increased by the use of colour and gilding. The cornices, the capitals, tie beams were painted as it can be seen in the remains of the Chora, Pammakaristos, Hosios Loukas churches.²⁸

²⁷ Andrew Gould, “Marble Revetments”, *Orthodox Arts Journal*, 2013, in <https://orthodoxartsjournal.org/marble-revetments/>, accessed on 02.12.2023

²⁸ Robert G. Ousterhout, *Master Builders of Byzantium*, p. 235-236

This meant a quasi-horizontal direction of the sun rays which determined the light to project on the marble surface. When arranging the *bookmatch* slabs, there results a continuity of the veneer on a sinuous route, simulating the sea waves. The eye has the tendency to follow the continuous model like a movie playing. The polymorphism of water is given on the walls through the esthetical qualities of water. In contact with light, the perception of the waves' movement adds a new constituent to the performativity of the interior.

Precious stones create a second clothing for the church competing with the first one represented by stone. What has been kept from the original form is the mosaic of the arches and of the walls' tympana. Instead, the *Ekphrasis* of Patriarch Photios offers a mental image no longer perceptible nowadays. The silver and gold cut out and fashioned into plaques are no longer kept in the Byzantine churches. The manufacturing method of the precious stones raises a problem of identifying the resulting objects. What meant this gold and silver cut out and fashioned into plaques? The answer could come from some specific ritual objects. The copper slabs from the 11th and 12th centuries, representing St. Ermolaos and Virgin Mary Hodegetria (Fig. 28), realised by the *repoussé* technique, offer some cues. These slabs represented gifts to a church or to another worship place. The holes on the margins of the slabs indicate that these were attached to an architecture element such as columns or *templon*.²⁹ The copper slabs could be used as icons.³⁰ The imprint probably referred to the representation technique of the image on the metal surface by *repoussé*, hammering the back of the slab so that the outline is perceptible on the front.

The performative character of these embossed slabs was very strongly highlighted. The reflecting and polymorphous surface of the silver and gold *repoussé* had a similar effect to that of the mosaic. The surface caught any light source and reflected it in all directions. The diversity of the manufacturing methods of the metal applied on the surface of the Byzantine icon led to an utmost show of change - *poikilia*.³¹

Further on, the orator calls forth details about the Liturgical objects, made from gold and encrusted with precious stones and pearls. We point out a vessel, kept in the treasure of the

²⁹ E Helen C. Evans, W. D. Wixom, *The Glory of Byzantium, Art and Culture of the Middle Byzantine Era A.D 843-1261*, The Metropolitan Museum of Art, New York, 1997, p. 159, https://books.google.ro/books?id=Caqal2aj55wC&pg=PA55&lpg=PA55&dq=%22processional+cross+and+fou+r+cross+bases%22+wixom&source=bl&ots=41qOnZ5_B8&sig=ACfU3U0GPFYS-EL4O9BZiNQQQeMXwK9jIQ&hl=ro&sa=X&ved=2ahUKEwj_7ebYh-r8AhXFyLsIHcEaANwQ6AF6BAGIEAM#v=onepage&q=%22processional%20cross%20and%20four%20cross%20bases%22%20wixom&f=true, accessed on 28.01.2023

³⁰ *Ibid.*, p. 160

³¹ Bissera Pentcheva, *The Sensual Icon...*, p. 126

San Marco church in Venice, called *Chalice of the Patriarchs* (Fig. 29). It was made from sardonyx, on a silver base, enamelled and decorated with precious stones and pearls, dated from the 10th-11th centuries, our study period. The image of Christ Pantokrator was made in enamelled *cloisonne* on the bottom of the vessel. During the Eucharist, the believer could see the image from the central dome doubled on the vessel.³² The gustative experience of the Eucharist became whole through the visual experience of the icon. Finally, the believer could take the Eucharist twice - first, materially, through the transfigured bread and wine and secondly, visually, through the icon.

Metal stones cover both architectural elements and Liturgical objects. Even if the covering of the arches is on concavities, the Liturgical objects counterbalance in convexities. The curved forms of the Liturgical objects counterbalance the curved forms of the arches and the finishing unites them esthetically.

Air circumscribes the objects and the persons in the church just like the mosaic circumscribes the images. Air is like gold, a receptacle of light, sound and fragrance. The performativity of materials on the smooth and reflecting surface is activated by light. But objects are non-static. They are being moved through the air along with the movement of the people. If light is the one activating the performativity of materials, what activates the performativity of air? Smoke ... resulted from the burning of oil, wax and incense, is the one giving consistency to air. Smoke moves, just like the wind, in all directions. Smoke wraps all the objects; this is perceived by the beholder, thus giving different densities to air. But smoke cannot be dissociated from scent. The heterotopic idea of a different space, of church sacredness is associated with a fine fragrance.³³ The specific scents of wax, incense, myron generate a sort of olfactory memory immediately associated with the ecclesiastical.

³² Alexei Lidov, "Iconicity as Spatial Notion. A New Vision of Icons in Contemporary Art Theory", p. 2, in <https://hierotopy.ru/contents/IconicityRijeka2016lidov.pdf>, accessed on 13.12.2023

³³ Christina M. Gschwandtner, *Welcoming Finitude...*, p. 104

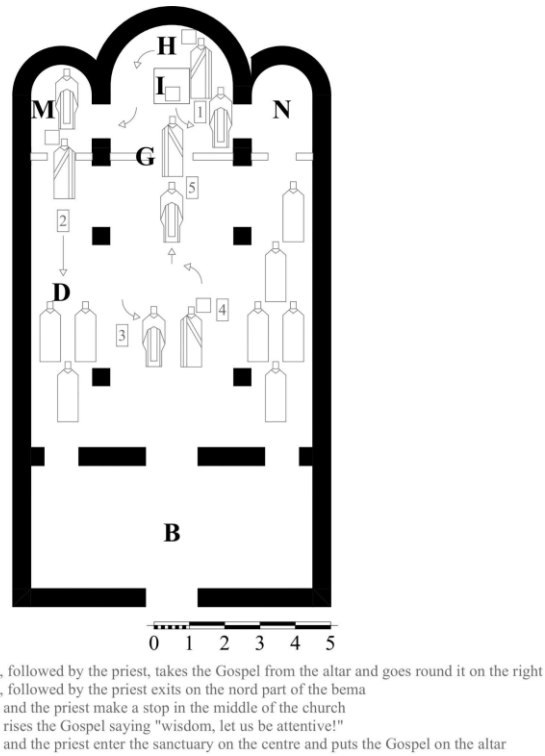


Fig. 1 The graphical scheme of Little Entrance in a hypothetical cross-in-square church
(Author's drawing)

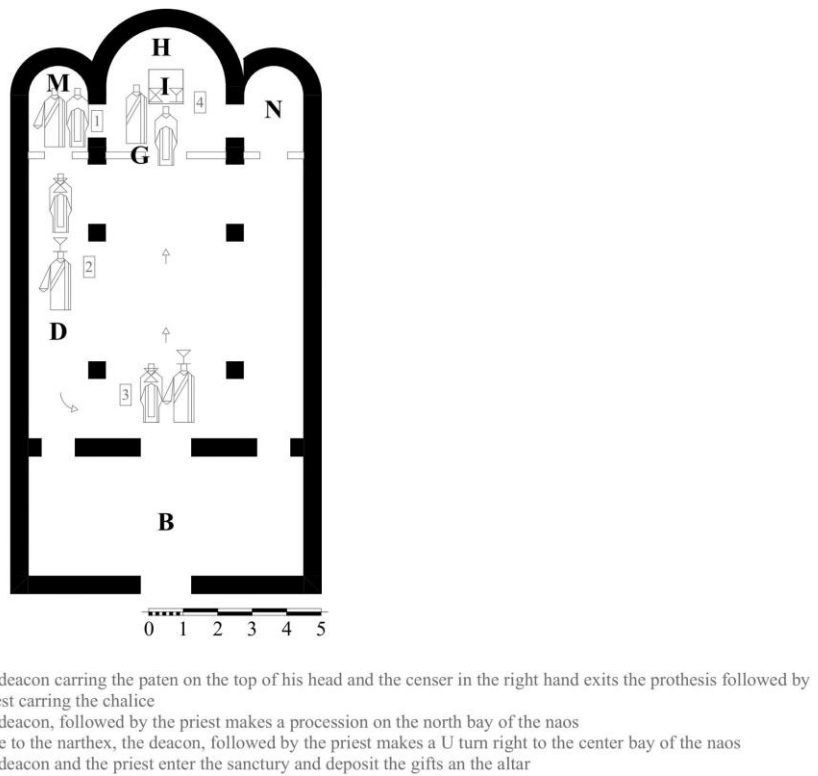


Fig. 2 The graphical scheme of The Great Entrance in a hypothetical cross-in-square church
(Author's drawing)

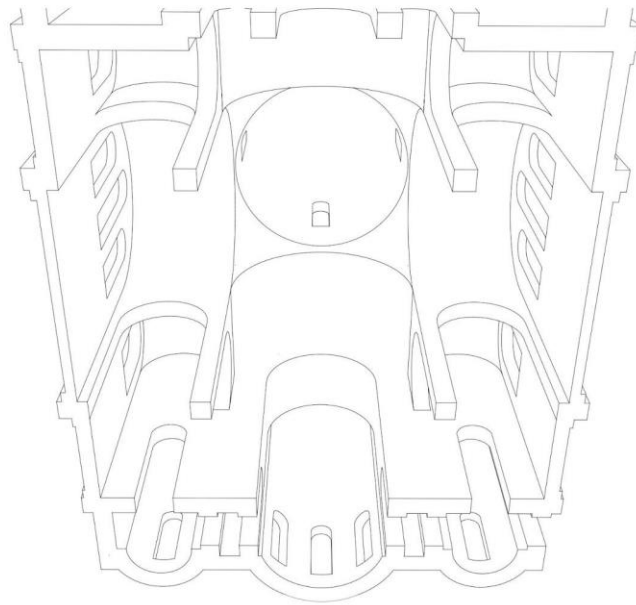


Fig. 3 Interior of a cross-in-square church. Interior Perspective (Author's drawing)

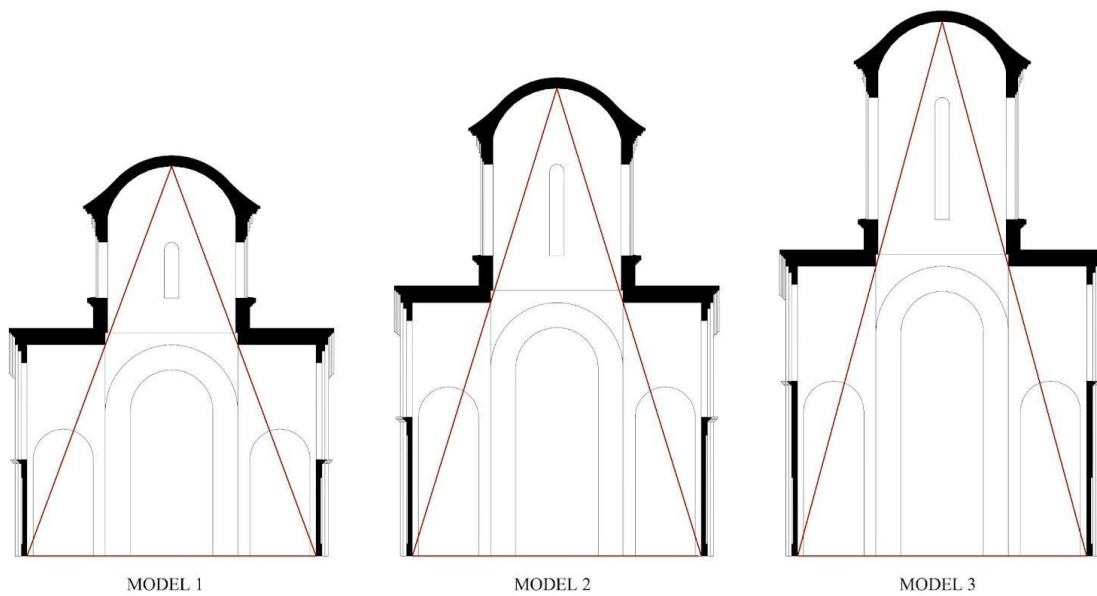


Fig. 4 The proportioning scheme of the height of the church, according to N.K. Mutsopoulos (Author's drawing)

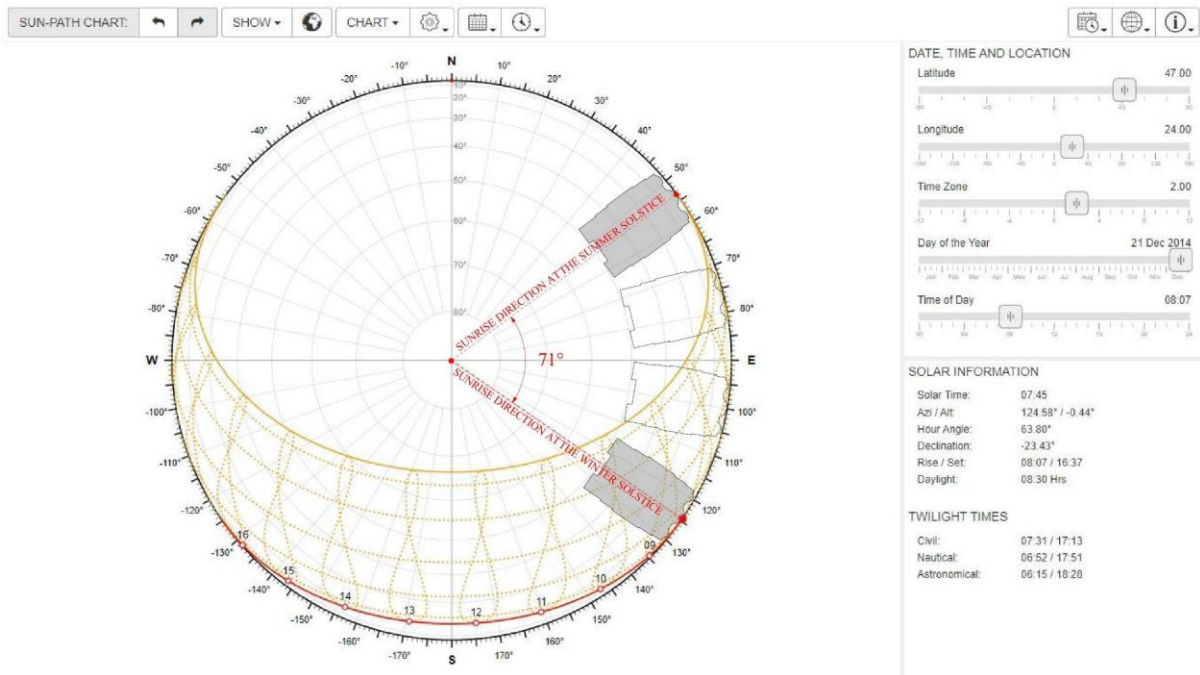


Fig. 5 The diagram of the sunrise direction between the summer and winter solstices in Cluj Napoca (Author's drawing, using the software andrewmarsh.com)

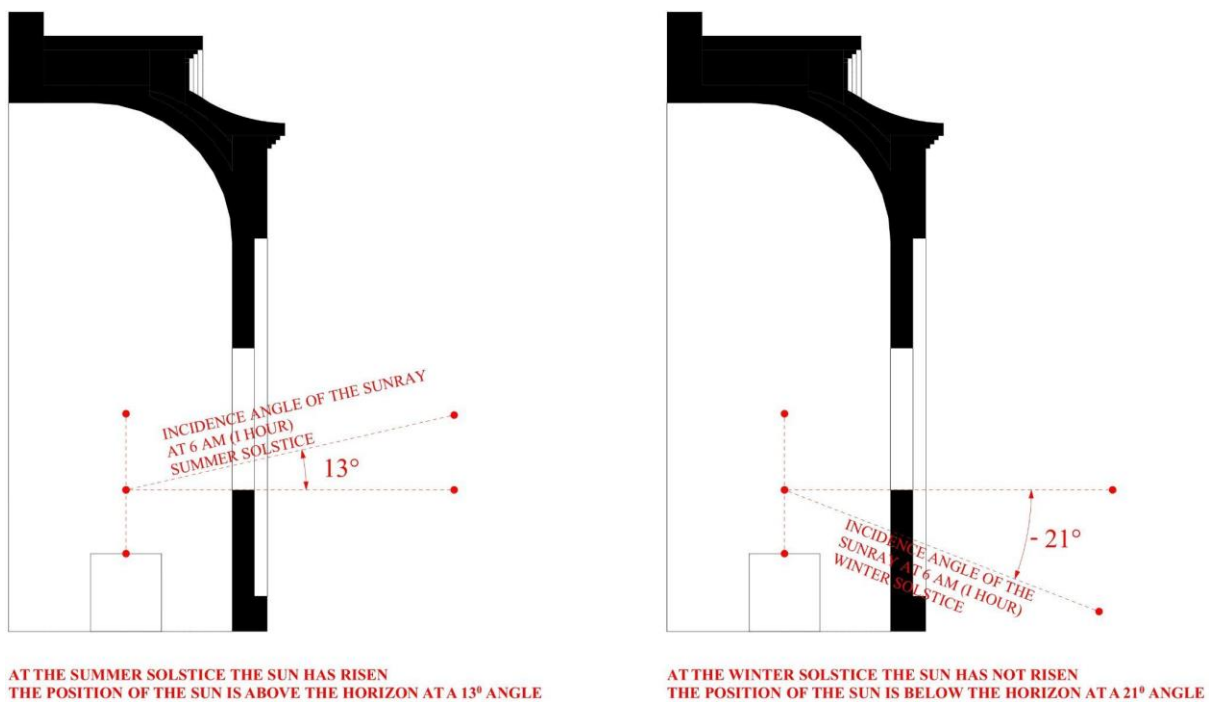


Fig. 6 The diagram of the apparent position of the Sun at the summer and winter solstices in Cluj Napoca (Author's drawing, using the software andrewmarsh.com)

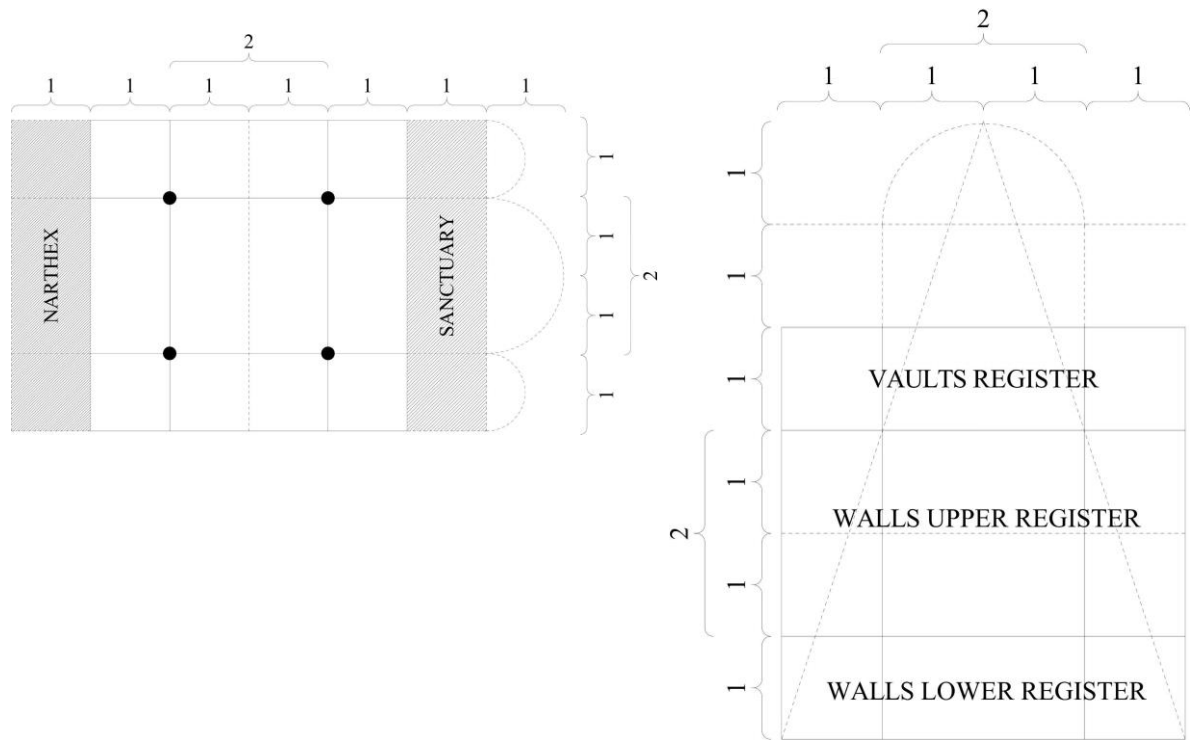


Fig. 7 The proportioning scheme of the plan (Author's drawing) Fig. 8 The proportioning scheme of the elevation (Author's drawing)

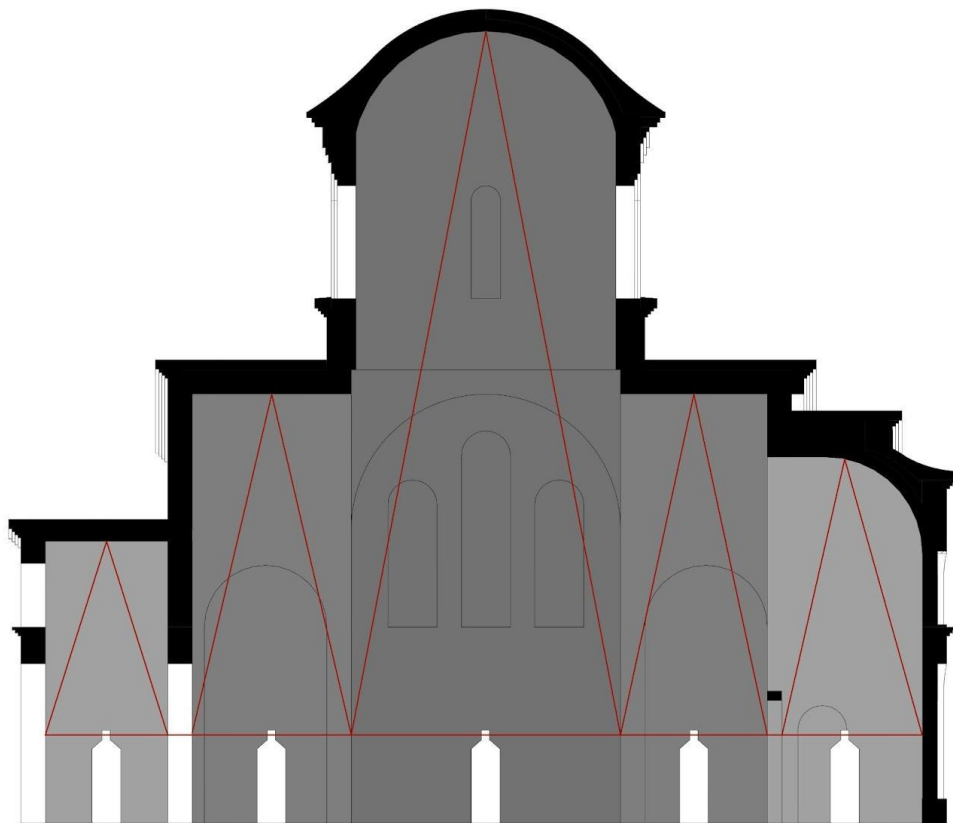


Fig. 9 Section through spaces with variable height creating intimacy levels (Author's drawing)

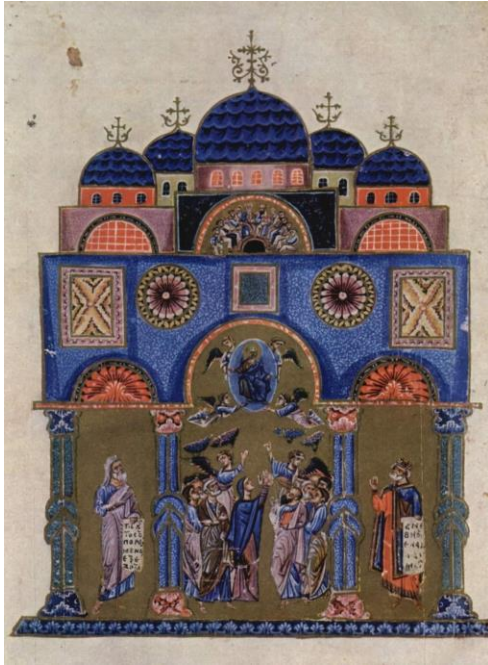


Fig. 10 The manuscript of Jacob Kokkinobaphos, the 12th century (Wikimedia Commons)

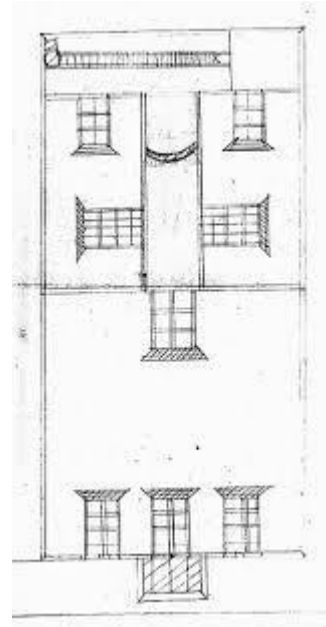


Fig. 11 The sketch of a house in Athens where the facade, the plan and the section are combined, the 12th century (R. Fatsea)



Fig. 12 Rotated plan as to look facade, model (Author's project, model execution by arch. Ciprian Maier and painter Sorin Albu)



Fig. 13 Bronze cross base, 11th century (www.metmuseum.org/art/collection)

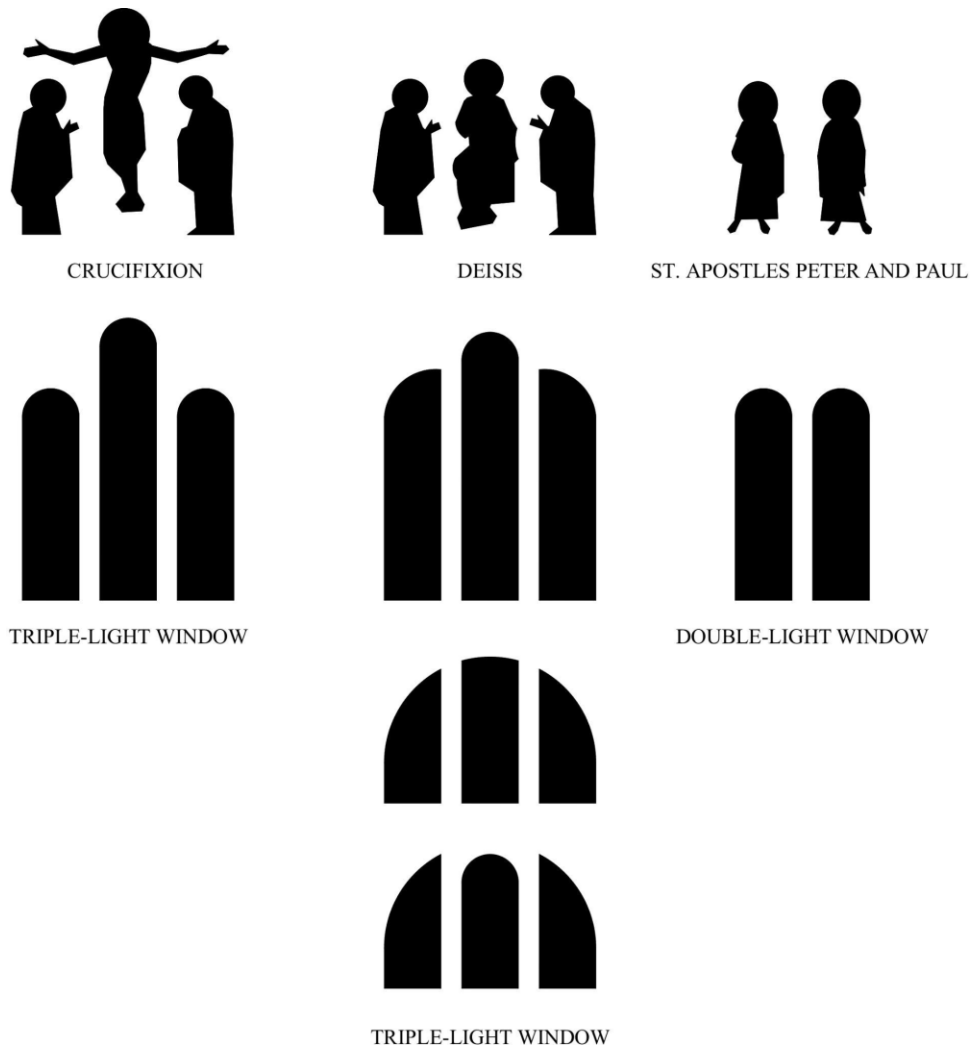


Fig. 14 The window as an iconographic typos
(Author's drawing)



Fig. 15 The dome of the Gelati monastery
Georgia (Wikimedia Commons)



Fig. 16 The dome of the Panaghia Church Kapnikarea
Athens (photographer Dan Tivadar)

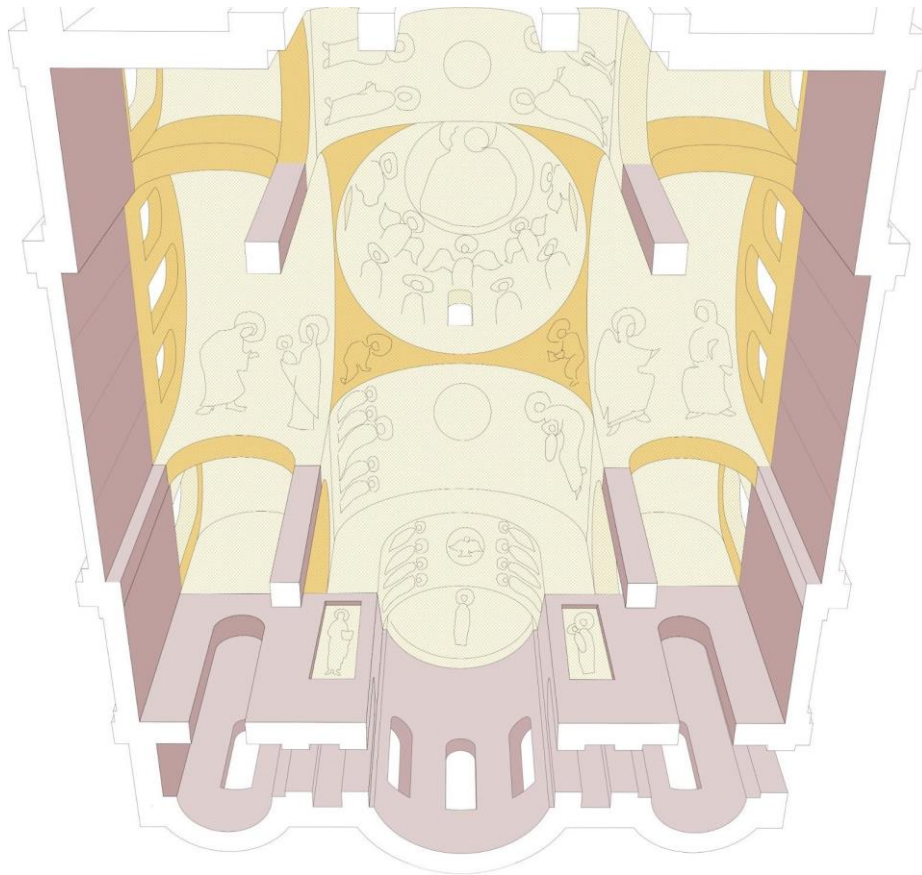


Fig. 17 Hypothetical iconographic programme in a cross-in-square church
(Author's drawing)

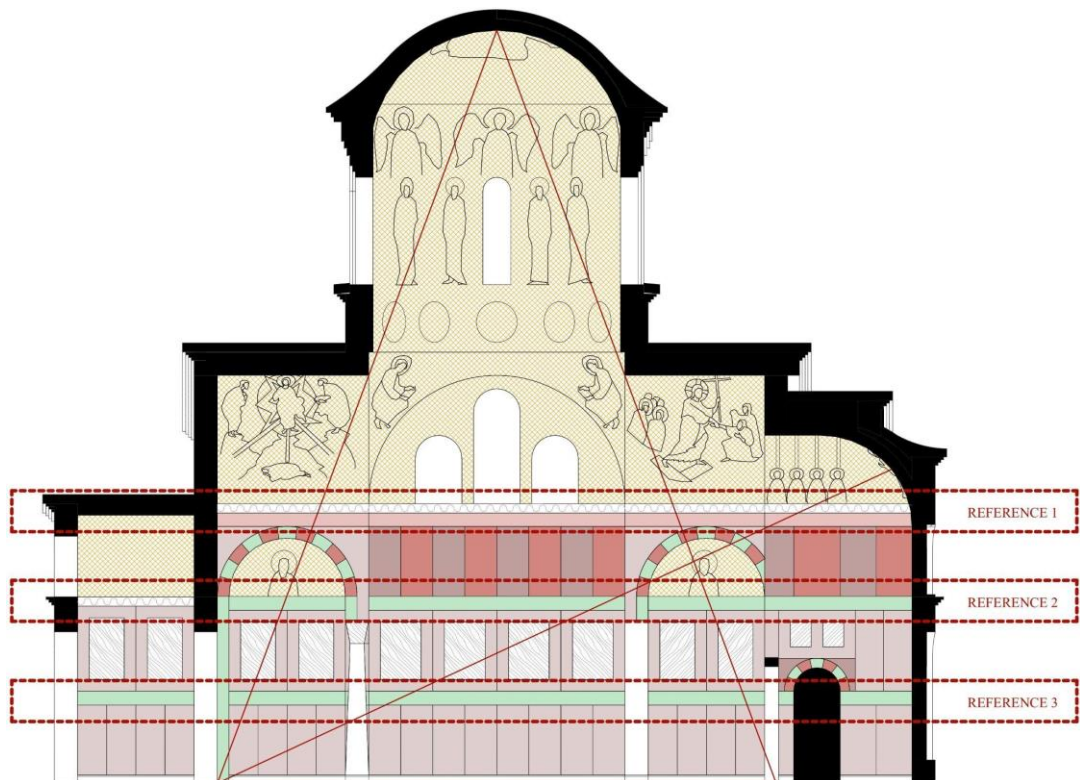


Fig. 18 Hypothetical rebuilding of the interior of a cross-in-square church
(Author's drawing)



Fig. 19 Pumpkin dome, model
(Authors' project, model execution by
arch. Ciprian Maier and painter Sorin Albu)

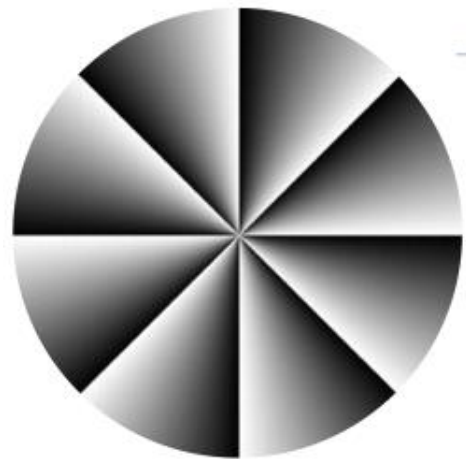


Fig. 20 Peripheral drift illusion
(Wikimedia Commons)



Fig. 21 The narthex dome of the Chora monastery, Constantinople (Wikimedia Commons)

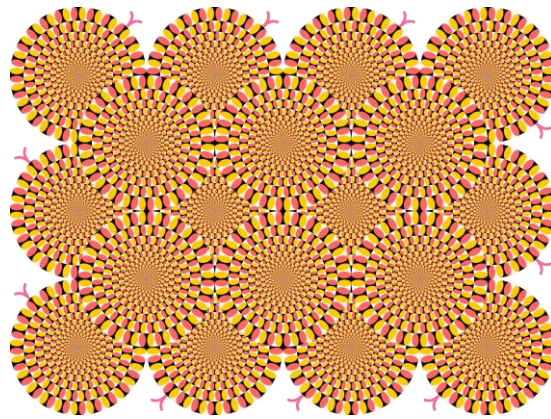


Fig. 22 The movement effect of the Rotating Snakes Illusion
(Wikimedia Commons)

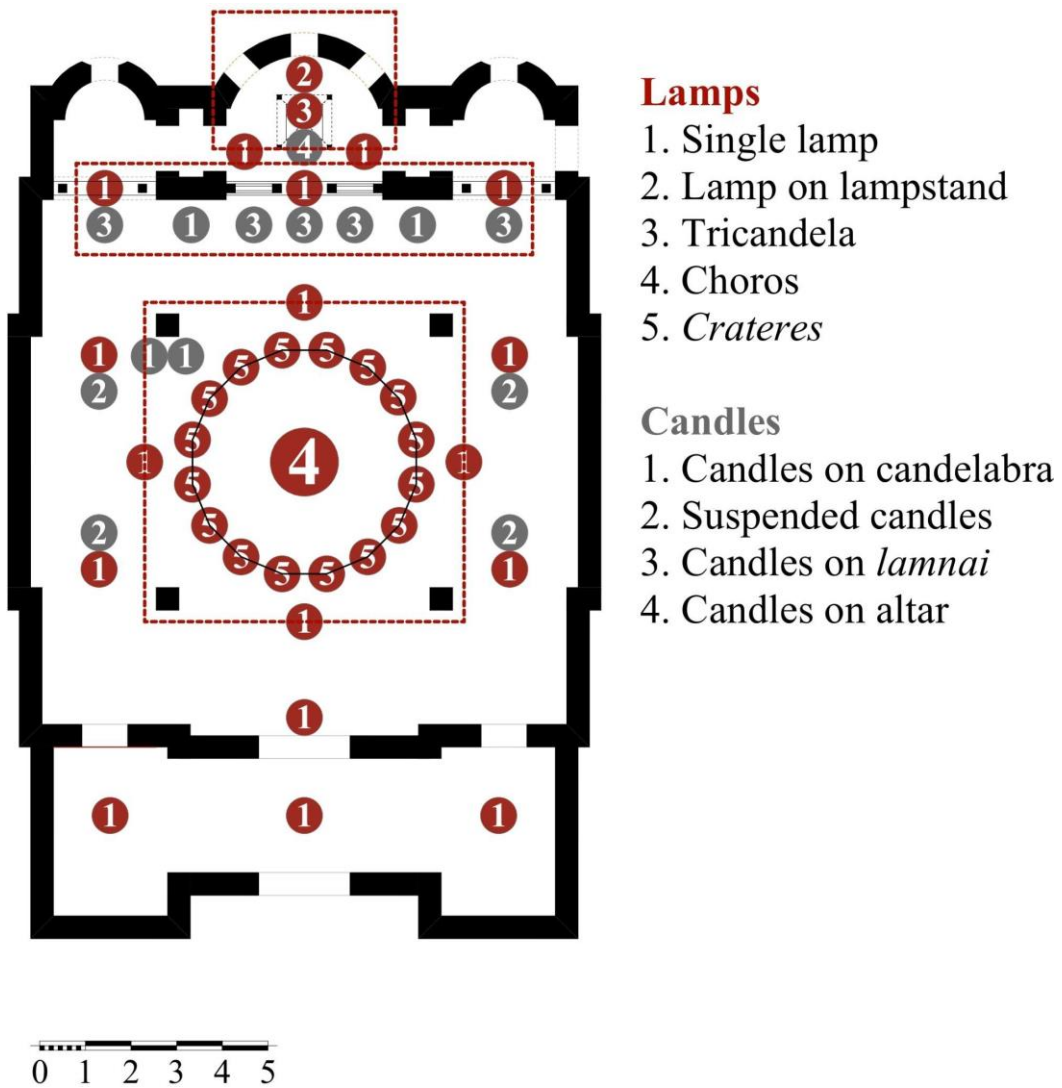


Fig. 23 Lights schema restoration according to the Typika (Author's drawing)

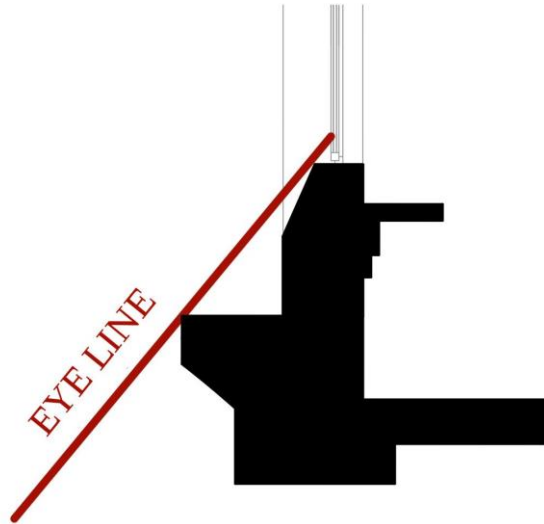


Fig. 24 Cornice detail and spayed sill window
(Author's drawing)



Fig. 25 Horizontal plan of light beams in the Panaghia Church
Stiris (photographer Dan Tivadar)



Fig. 26 The incidence of light on a pumpkin dome
(Author's project, model executed by arch. Ciprian Maier and painter Sorin Albu)



Fig. 27 Interior Medici Chapel Florence (Wikimedia Commons)



Fig. 28 Virgin Hodegetria icon, *repoussé*
Torcello (Wikimedia Commons)

Fig. 29 Chalice of the Patriarchs, San Marco
(Services Archaeology and Heritage Association)