

### Synthesis of the problematics approach of the worship spaces design

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#### SUMMARY

*The main aspects of the Theory of Architecture dealing with ecclesiastical buildings versus the structure forms in the design of different architecture functions are briefly described in this paper, together with some technological aspects.*

**KEYWORDS:** Theory of Architecture, worship symbolistic, structural functions, Christian church buildings

#### 1. INTRODUCTION

*"The holly church is God's image and icon  
as one having the same doing as Him by imitation and imagination"*

Having in mind this beautiful thought so piously expressed in "mystagogia" by Saint Maxim the Confessor, I tried to discover what it is left today from the topics on the edified sacred which accompanied us for a millennium. As we know, this topic, as integral and integrating part of the Christian sacred, marked our passing through the European culture with the permanence of a spiritual need, after it settled on the pagan ruins of the roman civilization, the Christianity became, in time, the identifying matrix of a whole culture, united at the beginning, shattered then into doctrinarian fragments, the Christian culture preserved its entire seduction and modeling power in its various forms of manifestation. One of them is the orthodox architecture dedicated to the transposing of the idea of sacred into the earthly reality with the means offered by the latter. The sacred architecture refers both to the emotion and intellect by symbols and meanings, spatially and volumetrically configured. The sacrality materializes through structure and acquires esthetical valences by the related arts accompanying this practice. The purpose of this work under the sign of the divine is to transcend the structural rational and the architectural functional in mystic



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spatiality. From a historic point of view, the ecclesiastic architecture was always there, being influenced in the structural component by the evolution of the engineer thinking, and in the formal-aesthetic one, by the succession of the cultural centers, but maintaining the articulation of the sacred archetypes unaltered. The timeless laws establishing the in “genius loci” tradition give rise to volumes with a strong identity-related content, which customize them both in the panorthodox field and in the Romanian cultural regionalism. The Byzantine tradition, engrafted on the popular culture on which the materials expression and the structural aesthetics are added, is our legacy in the field of ecclesiastical architecture.

Along with the changes from the years ‘90 an extremely broad topic on architecture became a current issue and namely, the ecclesiastical program. For 50 years, the sacred in architecture was prohibited enough to cancel a crystallized tradition in centuries of explanatory practice. Today we are subjected to an enormous pressure towards filling an empty space and the finding of an architectural expression, synchronous to the age, proved rather difficult. A series of competitions, symposiums and printed works having as topic the religious architecture succeeded in outlining a direction in this problematic. To what extent one can talk about success or failure one can find out further to a critical analysis of this step materialization. At the same time, the leading actors of this mission – clergy, architects, administration – tried to find a common language and an articulation of the creating gestures. The result is promising and it expresses by the few new churches, built under the sign of the tradition reinterpretation in modern key, which can generate models in the forthcoming years.

## 2. EVOLUTION OF THE WORSHIP PROGRAMS IN PRACTICE AND THE ARCHITECTURAL THEORY

### 2.1 Problematics approach in historical perspective

The tradition imposed throughout all the historical stages of the Christian formation, the rules and canons of the orthodox churches. Each new built altar copied as truly as possible the archetypal sacred space as it was transmitted in the primordial revelation. The orthodoxy or the righteous faith preserved the tradition unaltered as it was defined by the seven ecumenical councils, not only in the dogma but also in organizing the liturgical space. The constant of the functional organization is a consequence of the ritual stability, which does not justify any major spatial-related change. The one who believes will always look for the recognizable architectural space as identifying vehicle. The tradition perpetuation elements in the Romanian architecture were not copied but processed in a creative manner and synchronous to the age so that today we have available a large variety



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of churches which relevantly evoke the time and place where they were built. At the same time, the church must be different from the other constructions to the extent that it is the same as the constructions of the same cult.

The church must be recognized as such, both synchronously in relation to the rest of the houses and diachronously within its own formation. This binomial ensures for equilibrium between the theory of alteration which can exclude the sacred and the repetitive identity, which renders the evolution in traditional key, void. The history of the ecclesiastical architecture is a history of the answers diversity given to the worship program in various ages and provinces inhabited by the Christian spirit. There are though some reference points in the evolution of the ecclesiastical constructions, which can constitute models worthy of processing and not of copying. Thus the architecture during the reign of Stephen the Great in Moldavia and during the reign of Brâncoveanu in Walachia, or the wooden architecture in Transylvania are the result of some formal interventions – wherefrom the alteration sensation – on a common support of the planimetric constitution. The only moment of the absolute newness is the 19<sup>th</sup> century neoclassicism, of occidental inspiration, passed through the Slavic filter which institutes itself at the plane conceptual level. The two attitudes, apparently antagonistic, give the measure of the approach modality flexibility of the worship places' evolution.

### **2.2 Evolution of the achitectural expressivity of the ecclesial constructive forms**

Evoking the Saint Isaac the Sir, one can assert about the church “*Each church is a cosmic center reproducing the universe internal structure. It is the eschatological ship – the nave above which the spherical shape of the cupola erects similar to the sky which solidly rests on the arches representing the fourth sky lines of the world, synthesizing the sky union with the square, the measure and the celestial cipher of heaven... ..and the measure makes any thing beautiful.*”

The geometric reference points under the sign of measure make, by this definition, the distinction between the church with concrete function and symbolic one. In Romanian language, by church one can understand both the Christian institution and the building in which the worship is celebrated. The real church appeared subsequently to the symbolic church and took over from the same the entire ciphered vocabulary of the divine liaison. Both in formal constitutions, which upholster the building, but deeply as well, in the structural conformation, we find the esoteric elements which only the initiated can decipher. The plane shapes combine, according to sacred laws, along the axes and give rise to the volume which encloses in itself the sacred space – “*a space profundity quality, a vertical profundity whose projection is the place*” as defined by Mircea Eliade. The need of the sacred as a human constant generated the sacralization practice, of marking the proper framework in which the same can manifest. This place of contact between



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the terrestrial and the celestial universe was from the beginning the apse, as it was biblically revealed and then terrestrially materialized. From the Greek “apsis” – dome arch – the apse is a horizontally arched space which receives within itself the solar light and the divine grace. Vertically translated, the apse generated the arch, as symbol of stability and formal fulfillment. All the forms and volumes of the orthodox ecclesiastical space are tributary to the arch and evolved from the same. The translated arch generates the dome, the arch rotated around its horizontal axis gives rise to the dome and which it erects from the plane around the horizontal axis we have the shrine which closes the altar. In various positions and different directions, the arch accompanies the Trinity of the ecclesiastical space crossing: the church porch or penitence with the entrance arch, the nave or the sky as dome and the altar, or the saint of the saints with the apse. The plane forms evolve in expressivity and develop in volume by arch combinations which have a sole iconic reference point – the cross in its various revealed or hidden hypostases. The arch is a permanent and determines the building trinomial – form as outer manifestation, expressivity as purpose and constructive system as medium. The form is the liaison element between the constructive logic and the architectural expressivity by its three stylistic and rational components: function, structure and message. The artistic expression transforms the work into creation and transmits the creator message to those it is intended to. Finally, the constructive system keeps together and coordinated the relationship between parties, so that they respond as a whole to any solicitation of any nature.

The structure as message coordinator system, materially transmitted can honestly express, when the constructive elements are at sight or metaphorically when the same constitutes in a code of the artistic language. In the first case, we can line up the ecclesiastical architecture which has the arch as expressive vector and everything deriving from its game, namely the Romanian traditional architecture from the Byzantine chapel from Walachia in the churches built by Stephan the Great with diagonal arches. The second case refers to that architecture, which claimed in the shape of the column as masked expression of its efforts of compression, and as in the Romanian architecture, the isolated column is rarely used, we can conclude that we have an architecture whose expressivity is given by the structure.

### 3. THE STRUCTURAL ELEMENTS IN THE ECCLESIASTIC ARCHITECTURE

The ecclesiastic architecture blossomed on the Roman Empire ruins, taking over from the latter the arches and the domes but also the techniques of using the materials with high mechanical strength such as the Roman stone and concrete. The arch and the dome gave the opportunity to the spatial modeling in complex



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compositional shapes, especially indoor where the symbols, recreating the world, concentrate. Compositionally, the ecclesiastical space is marked by the richness of the unitary and hierarchy-based elements in accordance with two axes: a horizontal arch, headed towards the altar and a vertical arch towards the nave dome. They balance each other and cover the entire space, being perceived from every point. From the Roman legacy, only two structural shapes evolved in the ecclesiastical architecture: basilica in the Western Europe and central in the orthodox East. The basilica structure orientates towards the altar by the repetition of the same section – bay along the longitudinal axis. The structural solution is given by the stone arch, on one or two directions, which discharges the load on polygonal or profile cross-shaped columns perfectly adjusted to the material. The central constructions originate from the small Roman chapels which were taken over by the Christians and adjusted to the cultic needs. The central buildings are those which best support and promote the technical innovations in the need to amplify the liturgical space and give an ascending direction to it. The central element of utmost expressivity is the dome, which by sequential increase of the diameter imposed new supporting constructive solutions, from the drum enlargement until its release and the loads' dissipation in complicated systems of arches and apses. The technical performance imposed new materials gradually passing from the Roman concrete to brick and stone which allow an execution without shutters. The rich symbolistics of the structural formation is hierarchized by raising the central space covered by the dome and emphasized by the light corbel underneath due to the interspaces between the generating arches in contract to the mystical shadow light of the de ambulatory.

The Christianity generated and developed in a degree corresponding to its aspirations, namely a synthesis between the central space and the basilica one. The new volume brings together the liturgical sense of the basilica with the spatiality of the arches bound in the cupola developing two compositional axes that fight over importance and reunite in a cross. The vertical axis indicating the divine direction in Pantocrator give equilibrium to the horizontal direction of the celebration for the Saint of the Saints – the altar, in an unique volume full of symbols and the arches' and cupolas' expressiveness visible both in interior and in exterior. Lucian Blaga, referring to Agia Sofia as a symbol of the Christian space describes this construction as follows: *"in the spatial distribution of the constructive elements overwhelmingly predominates the semi cupola, the vault, the arches...you have the feeling that it is not horizontally set on the ground and not directed vertically to the skies, it somehow flows as a world in itself, limited only by its own vaults. Horizontally and vertically, with their extensive function of sitting and rising are annihilated by vaults and arches. The horizontal and the vertical wins in this manner an almost secondary function in the spatial rhythm of the whole that is full of vibrations and harmonic tensions. The whole of the cathedral shows a self sufficient world that lays on nothing, that only exposes itself, reveals itself"*.



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#### 4. THE BUILDING TECHNOLOGY OF THE CHIRSITAN WORSHIP BUILDINGS

The structural thinking began to dominate the approach for cult construction design and at the same time united from a stylistic and dogmatic point of view. The arch as a structural element, but also semiotic, began to dominate the religious ensemble through its numerous compositional combinations and possibilities in the sacred register. The movement in liturgical sense of the arch – entering portal, generated the groin vault, and the tilting of the apsis from the horizontal plan in the vertical one forms a spherical segment at the point of meeting of the groin vault, in the most important place of the church – the altar. This system has the disadvantage of a thickening of the walls that must support the vault's shoveling and filling of the empty spaces, problem that can be counteracted through the apparition of the of the double-arches at interior and buttresses at exterior. More than this, to concentrate the pushing of corners and to facilitate the covering in the field appeared the vaults in cross with interior or exterior margins, perceived as an intersection of semi-cylinders. In addition the esthetic effect was enriched through the novelty of the spatial closing, but also of the planimetric order in a square. As we know the square is the house of the circle and on this scaffold was possible an ascending development of the space through pendants, corner trumpets and finally, the vault. A new phase in the esthetic-spatial becoming was marked by the diagonal arches that led to the decreasing of sections and rhythm of the space. This can be done successively in the area of barrels until when the square of the nave is cut in half in the vertical run through of the tower as a receptacle of light and universal aspiration. The volumetric evolution in esthetic refined forms and structural was owed to the inter-dependant relationship between matter – structure – shapes.

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