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TRICONCH - ITS ORIGIN AND PLACE IN THE DEVELOPMENT OF ARCHITECTURAL FORMS

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Abstract. *The term triconch in architecture means the space structure composed of a central core to which three conches are attached on three sides under the right angle. The subject of research is the origin of that shape that has been present in the development of architecture since the pre-history. With defining of triconch shape and consideration of its importance, the clear idea of space organisation and relation of functions with its specific shape has been achieved. On the basis of analysis of the documentary material, definition of triconch type and discussion about its symbolic the general typology of triconch types is given. All shapes are divided into independent and complex types. The independent types differ depending on the relation of apses and the central core. The complex buildings are divided into shapes created by space connecting and those created by organic interaction. The typology of triconch shapes has shown that the interdependence of function, symbolic and space structure in forming of specific types exists. The diversity of combinations where the triconch shape is present gives to it the outstanding place within the group of central plan bulidings.*

1. INTRODUCTION

Researching a specific architectural form in its complexity and estimating realistically its importance in the history of building still represent a rare form of research work for a variety of problems appearing inevitably when the form spreads through a long period of time and over a vast territory.¹ The triconch is one of the forms that have never been

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¹ As far as it is known, none of the frequently used architectural forms has been considered comprehensively, from its beginning to its prime or disappearance. This does not concerne certain architectural forms such as the Egyotian pyramids, which have lasted for a very long time but were exhausted in one period.

studied in such a way before.

The research and identification of forms are natural for a scientific approach in architecture, in the measure sufficient to express an opinion about the spatial organization of a particular form. In that sense it can be noticed that in the available literature many problems concerning the triconch have not been clarified.²

Although it has been present from prehistoric times till now, in different regions, the triconch has been discussed mainly within more specific themes and fields of interest. All those occupied with the development of architectural forms point out that making of its original base, spatial organization and connections between its meaning and origin have not been founded yet on firm evidence, e.g. they are in the sphere of assumptions. Therefore, the subject of the paper had to be focused on determining important notions contributing to the comprehension and identification of this form through the history of architecture. Those notions are, above all, the definition and meaning of the basic form, symbolism of details and the whole, original functions, spatial and constructive structure and temporal and territorial diffusion. To separate the notions clearly, it is necessary to choose and adopt the most suitable method of work. On deciding to research the form of triconch, which had not been studied separately before, it was not possible to establish certain hypotheses as in other theoretical discussions approaching and discussing a problem in a different way.

The research of architectural development can be based on various characteristics of structures, chronological or geographic conditions and many other elements. Considering the previous experience, the method of typological studying seems to be the most appropriate.

2. MEANING OF TYPES IN ARCHITECTURE

Defining types is one of the most fruitful ways to find out more about heritage, because through the classification of structures some categories are determined as repers establishing typical relations among elements. The repers can be related to a function, spatial arrangement, geographic region, historical period etc.

This, however, does not define the method precisely. There are several approaches to typology, according to which it can definitely be the only subject of a paper, or it can be incorporated in a comprehensive discussion. There are also two ways of classification: one according to features "that serve to repeat similar models afterwards", and the other according to an ideal model "uniting representatively important features of all structures similar in form." [3,12] Defining important elements of the triconch enables the classification to be based on characteristics different from the most frequently used formal compositions of forms. It appears the consideration of the triconch spatial organization is rather complex, and that the triconch cannot be typologically determined only according

² The triconch as a specific architectural form has been explained from different points of view. Its symbolism, origin and architectural programmes have been discussed, but it has never been dealt with synthetically with the scientist's attention equally paid to all these aspects as well as others, which are important for the existence of an architectural form.

to a classified collection of examples gathered from the history of architecture. Identification of the basic triconch “type” shows a great dependence among its function, symbolism and spatial structure. Hence, the typological generalization of triconch forms can be performed on the basis of Q. de Quincy’s definition from the beginning of XIX century. It says: “The type does not represent the image of a thing it emulates, as much as the idea of an element serving by itself both as a rule and a model... A model is a thing which must be made as it is, on the contrary, a type is a thing according to which everyone can imagine and create a deed that does not look like its example. When a model is concerned everything is precise and determined, while a type is more or less ambiguous.” [13]

The quoted definition of type corresponds exactly to the form of triconch, as there is not just one element of criteria having a dominant role in the classification of its examples. In the case of triconch one must take into consideration its planimetry, volume, central space value, axes of simetry, symbolic meanings of parts and the whole, i.e. a choice of physical and nonmaterial elements that all together contribute almost equally to the classification of the form.

As far as architecture is concerned, typology has been in use in European tradition since the beginning of XVI century and it was widely spread about 1900.³ Typology was rejected by the modern movement in architecture. [14] In the fifties it was improved into its contemporary form, including new attitudes concerning morphology of forms. Argan accepted de Quincy’s definition of a type and developed it in his work on the concept of architectural typology in 1965 [1]. Attitudes of another Italian, Aymonino, on making the concept of building typology from 1964. should also be mentioned [2]. According to his approach adopted in this paper, one of the main characteristics of architectural typology is the unity of theme as a source of the essence of the erected structure. A relationship between the design and the structure is analyzed in the first place, while many other characteristics are in the second place. Most of all it concerns stylistic determination that is always pushed aside when a form is discussed in its continuity. This is explained in the sentence of Gabriel Millet: “A style belongs to one period or to one person, it is transient, while a type remains.” [11]

The selected method stated above depends mostly on the gathered data and the

³ The first forms of architectural typology began to shape more clearly from the beginning of XVI century. Two capital works appeared at the time which, according to most contemporary research workers, contain the bases for the modern research in architecture founded on a large number of collected examples or similar characteristics. They are the collected essays by S. Serlio published by G.D. Scamozzi as *Tutte l'opere d' architettura di Sebastian Serio*, Venezia 1584, and Andrea Palladio's *I Quattro libri dell' Architettura*, Venezia 1570. Inclination towards typology in France was seen in the works of N.F. de Blondel, *Cours sur l'architecture a l'Academie royal*, 2 vols., 1683 and 1685; J.N.L. Durand, *Receuil et Parallele des edifices de tout genre, anciens et modernes, remarquables par leur beaute, par leur grandeur ou par leur singularite, et dessines sur une memme eschelle*, Paris 1799-1801; than at the end of XIX century P. Planat, *Encyclopedie de l'architecture et de la construction*, 6. vols., Paris 1880-1895; in United Kingdom that is *Dictionary of Architecture*, ed. W. Papworth, 8 vols. and 3. vols. tables, Arch. Publication Society, 1853-1892; in Germany *Handbuch der Architecture*, ed. J. Durm, 13. vols., Darmstadt 1880.

analysis criteria, as according to de Quincy “There is a mutual relationship among dimensions, form and impressions our mind gets about them”. [13] It is the main reason why equal attention must be paid to all periods and different kinds of the triconch existing in them when the history of its development is analyzed.

3. TRICONCH IN THE HISTORY OF ARCHITECTURE

The fact that many forms, developed and improved later on, first appeared in the prehistory, led to an attempt to recognize the triconch archetype in megalithic cult structures in Malta and Gozo (Tarxien, about 2400 BC, Hagar Qim and Mnajdra, about 2600 BC and Ggantija, about 2800 BC).⁴

Between these examples and clearly designed triconchs from the first centuries AD, there is, however, a time discontinuity. Still there is no available evidence about forms which the triconch may have developed in the oldest civilizations between the Tigris and the Euphrates, along the Nile or in the ancient Greece [4,16,10]. Most probably, the search should begin with the period of Augustus reign in Rome when curved and polygonal architectural forms came into use more frequently [17].

The process of breaking conventional right-angled forms and shaping of the triconch may have gone in two directions. In the first variant chambers got very deep niches which finally broke through the side walls transforming themselves into apses and widening the interior. In the second variant three independent exedras were added at certain places next to the central building. The organic connecting of the apses and the central structure was the next step in defining a new building type.

Therefore, it can be concluded the triconch, as well as tetrachoras, pentachoras,... decachoras emerged from the basic form of centrally planned structures. The triconch, together with other multiconchal structures according belongs to a combined type of central structures according to the general typology of architectural structures.⁵ From the Roman period, the triconch and tetraconch were developing almost simultaneously. The tetraconch has several features that determine it as a building of the central plan (e.g. symmetry along all axes). It cannot be proved, however, tetraconchs appeared first or that triconchs derived from them by removing the fourth apses. On the contrary, as some of the oldest triconch were completely without the fourth side, i.e. completely opened, it can be concluded that the triconch and the tetraconch must have been two different types with independent but similar ways of development.

Every classification of structures naturally needs as many examples as possible in order to be based on firm arguments itself, as well as the conclusions derived from it.

⁴ See L. Aquilina, Die Megalitischen Tempel von Tarxien, Mit einer kurzen Beschreibung der Praehistorischen Monumenten von Hagar Qim, Mnajdra, Ggantija, Alpaprint 1984. In the north of Sardinia there is a nuraghi Zura with a triconch interior arrangement; see Perrot-Chipiez, Histoire de l'art dans l' Antiquite, Paris.

⁵ About that see in J. Nešković, *Typology of architectural forms*, (in serbian), a paper for post-graduate students at the Faculty of Architecture in Belgrade, a course in 'Protection, revitalisation and styling of building heritage' for 1987/88

Material that can be separated for that purpose through a historical survey of architecture is different in quality and quantity. Few structures have been preserved in their original form, most of them have survived on the level of their foundation zone or slightly above it, so that the spatial organization of such examples can only be assumed by descriptions, analogy and material finds around the structure.

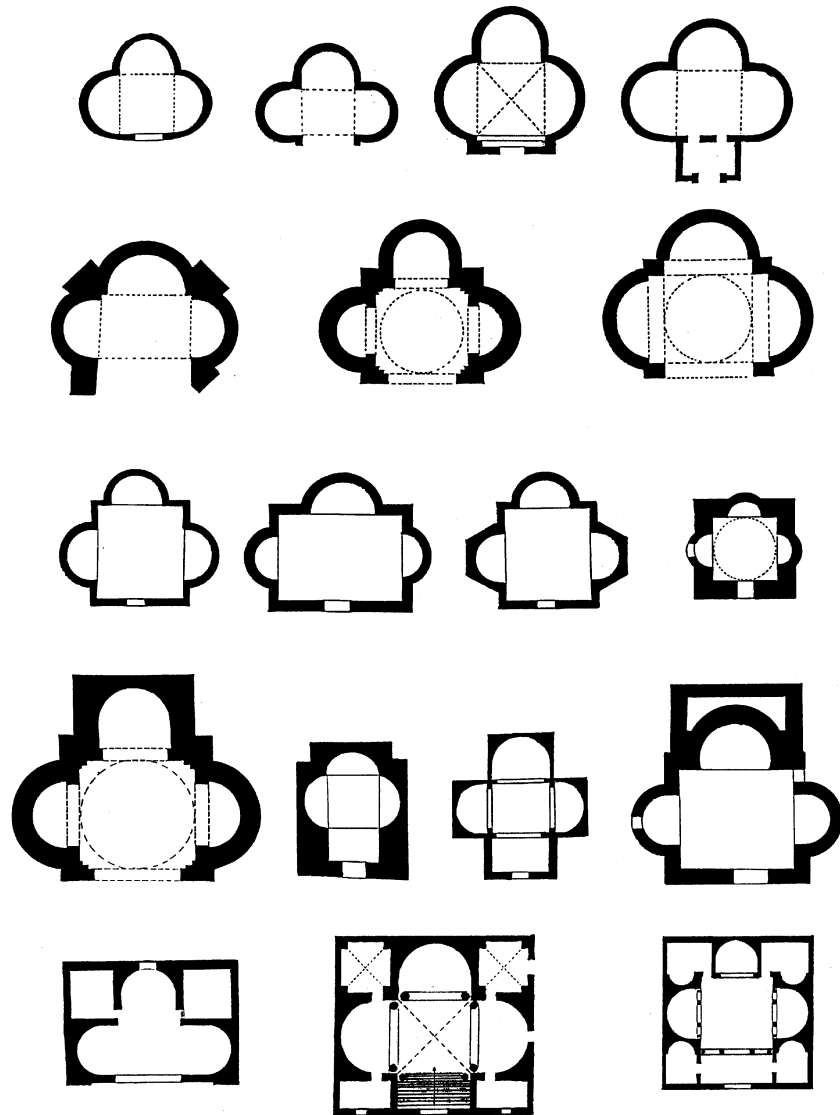


Fig. 1. The independent triconch types - different examples.

It appears the number of triconch existing in different periods is much greater than it has been reported in the literature so far. It can also be concluded that the triconch is an

architectural form existing continually through a long period of time till now, although not always in the same geographic regions.

Gathering and researching of the material from the ancient time when the triconch appeared requires a lot of attention to notice the rules of its transformation into a type. Form from the later periods has been explained in the literature more completely, therefore, it is easier to define their type determinants.

4. CONCLUSION - A GENERAL SURVEY OF TRICONCH TYPES

Analyzing available examples from different periods and various regions through the history of architecture, it can be concluded the development of the triconch was almost certainly induced by functional requirements and symbolic reasons tending to spatially united structures of monumental expression, no matter how big the structure really was.

In time this type became closely connected to the settled layers of symbols and memories of them. They are, above all, the cult of the dead and immortal godlike characters which was materialized through various cult and burial structures (mausoleums, herons, martiriums and memories), and the cult of celestial power executed through the figure of the ruler in numerous ceremonies and rituals held in tricliniums, throne and ceremony halls [5,8]. The basis for all discussions about symbolism, meaning and usage, as well as for the triconch typology is the simplest, elementary type which can be regarded as a founder of all more developed forms and type variants.

Following de Quincy's statement "We began this discussion to realize the value of the word "type" used metaphorically for a number of structures, and to notice the mistake of those who either do not recognize it for not being a model, or distort it imposing the strictness of a model to it, which assumes the condition that something must be an identical copy", the architectural type is considered as an expression of an architectural idea recognizable for some constant noticed in many examples. The triconch is, therefore, defined as a form consisting of the central space with the elevated core (with a regular geometric figure in the base) always with apses attached to it from three sides (having circle segments for their bases), surmounted by a half-dome, axes of which cross orthogonally.

Only according to all facts stated above it is possible to suggest a general typology of triconchs and buildings with triconch elements. The widest classification is on:

- independent types and
- combined types of the triconch with other architectural forms.

The independent triconch in its spatial structure corresponds to a definition of the basic triconch space. Differences that appear depend on the conception of the core and a degree to which the conchs are submitted to the central, elevated part of the building. So, the further classification can be based according to the position of the apses towards the triconch core.

If the external architecture follows the inner forms, it is the case of elementary forms of the independent triconch.

The inner spatial organisation need not be visible from the outer side. Then it is the case of the inscribed form of the independent triconch.

Combinations of the triconch and other architectural forms exceed in number of the

independent forms. Because of the flat fourth side the triconch space offers various possibilities for combinations with other forms. The types in which the triconch is spatially combined with another form (addition of architectural parts or wholes) are made in that way, as well as the types where the triconch fused completely with another architectural type.

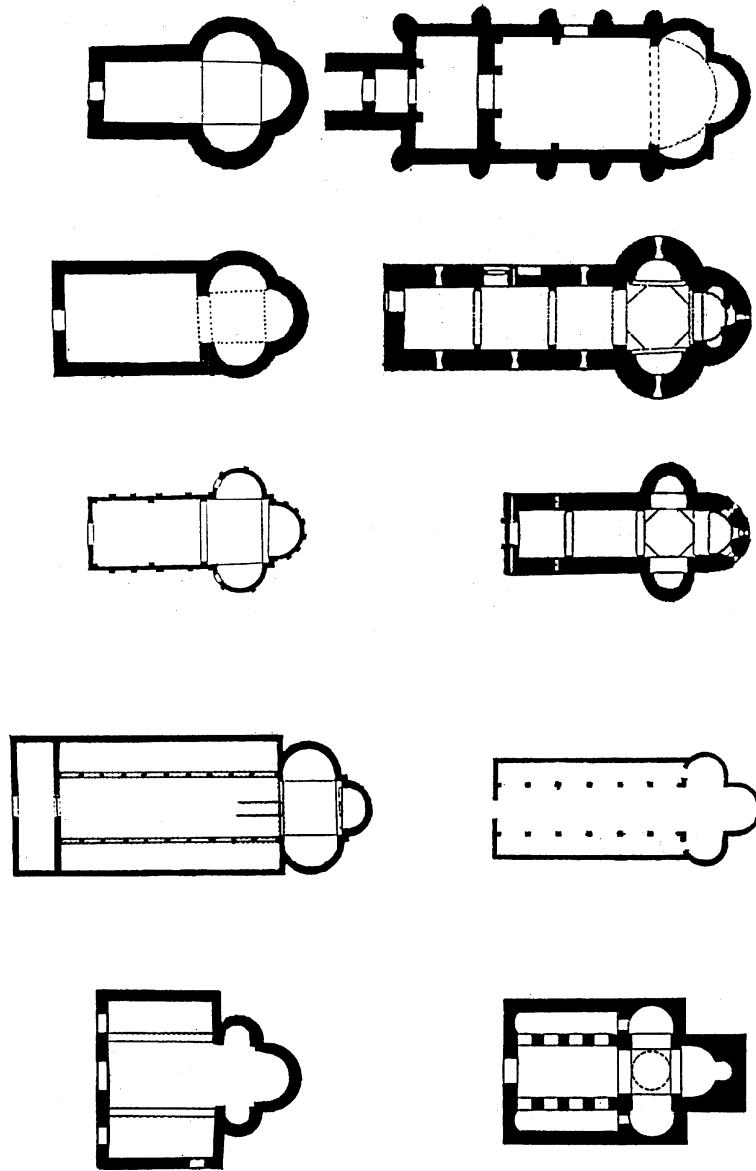


Fig. 2. The Complex types - the space connecting of the triconch and the other building types - different examples

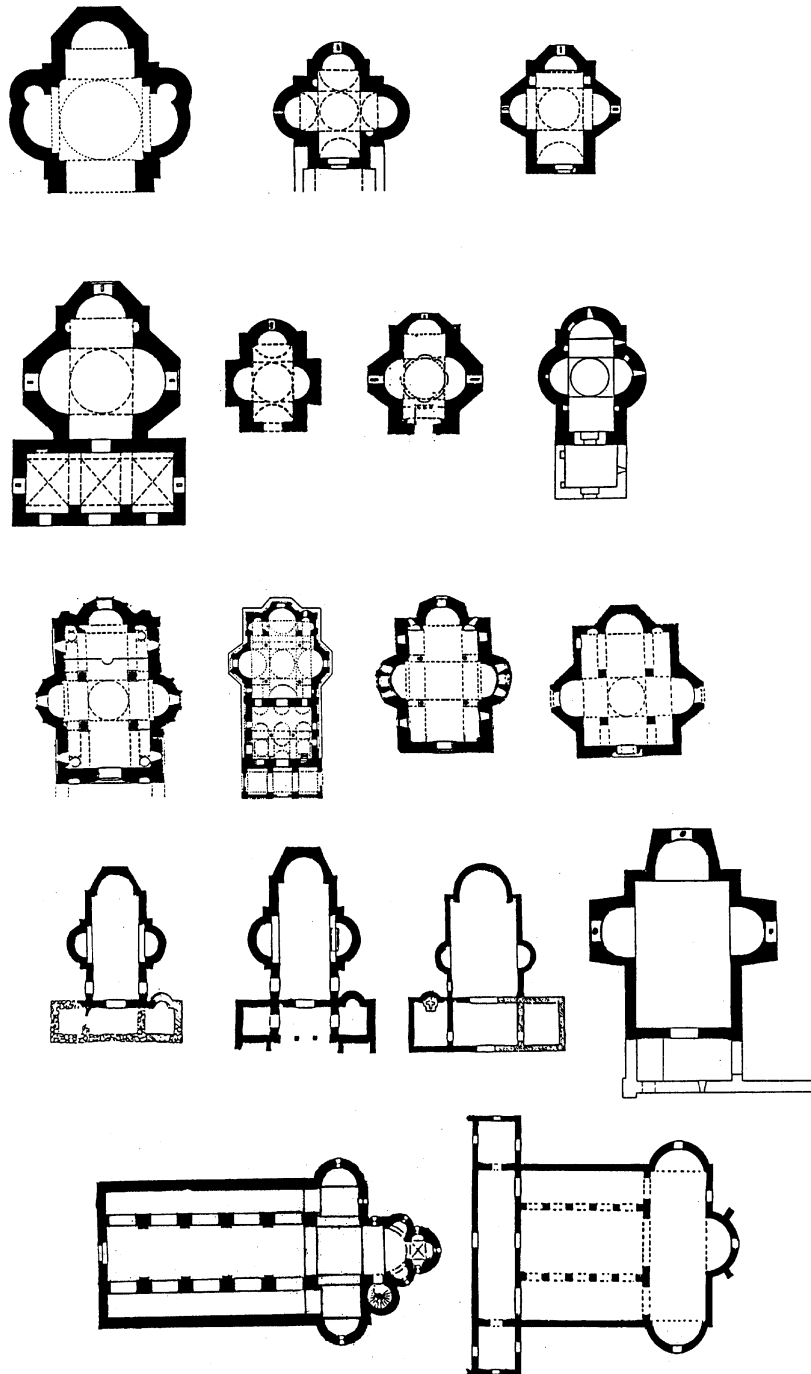


Fig. 3. The Complex types - the organic interaction of the triconch and the other types.

In the complex architecture created in the fusion of different architectural types a new type is made by selecting elements of each individual type that, apart from their physical function, have a certain symbolic meaning according to which belonging to a certain type is recognized.

A tendency to combine and fuse the triconch with another architectural type, the triconch is determined, above all, by the general conception of the new structure in which the parts of the triconch will have their function.

The three apses covered with the quarter of the sphere, in their orthogonal relations have a sense on the new building if it is understood they have taken on themselves the meaning related to the triconch as a whole, i.e., they appear on the new building as architectural abbreviations of the triconch symbolism.⁶ By this method the existence of many structures has been explained, of various, combined types, the most complex of which is the type of the inscribed cross with triconch elements.

A great ability of the triconch to combine spatially and organically with other architectural forms gives it a special place and value in the development of architectural forms.

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⁶ As a base for consideration of the triconch elements in the other types as abbreviations of the architectural symbol was used the paper A. Stojaković, 'Architectural abbreviations in the Byzantine painting', (in serbian), Zograf 13, Belgrade 1982, pp. 59-64.

TRIKONHOS - POREKLO I MESTO U RAZVOJU ARHITEKTONSKIH OBLIKA

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Termin trikonhos u arhitektonskom smislu podrazumeva prostornu strukturu sastavljenu od centralnog jezgra kome su priključene tri konhe pod međusobno pravim uglom. Predmet istraživanja je poreklo oblika koji je prisutan u razvoju arhitekture od praistorije. Definisanjem trikonhosnog oblika i razmatranjem njegovog značenja dobila se jasnija predstava o prostornoj organizaciji trikonhosa i povezanosti funkcija s njegovim specifičnim oblikom. Na osnovu analize dokumentarne građe, definicije trikonhosnog tipa i rasprave o simbolici njegovih oblika data je opšta tipologija trikonhosnih oblika. Svi oblici su podeljeni na samostalne i složene tipove. Samostalni tipovi se međusobno razlikuju na osnovu odnosa apsida prema centralnom prostoru. Složene građevine su podeljene na oblike nastale prostornim povezivanjem i na oblike nastale organskim prožimanjem. Tipologija trikonhosnih oblika pokazuje da postoji zavisnost funkcije, simbolike i prostorne strukture u formiranju određenih tipova. Raznovrsnost kombinacija u kojima učestvuje trikonhosni oblik određuje mu značajno mesto u okviru grupe građevina centralnog plana.