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# Cathedral of St. Nicholas and ST. Alexander in Sulina

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Summary

*"St. Nicolas and St. Alexander" Church from Sulina is declared a historical monument in the list of Tulcea county. The headstone was laid by king Carol the I$^{st}$ in the memory of Dobrogea liberation from the Turkish occupancy. It was built in two stages, 1910 – 1912 and 1933 – 1934. The foundation was built on oaken pillars, up to the multiannual minimal level of the Danube. From a stylistic point of view it is included in the large group of Wallachian ecclesiastic architecture, reconfirmed and undertaken by the "New Rumanian" style. Time, the Danube, underground waters, and earthquakes generated a series of degradations requiring rehabilitation and consolidation works, subject of our concern.*

Keywords: restoration, cathedral, Danube, steel, murals.

## INTRODUCTION

The Cathedral of St. Nicholas and Alexander in Sulina, registered in the Historical Monuments List under code TL.II.m.B.06018, was built in two stages: the former between 1910 and 1912, in which the works were barely finished, and the latter between 1933 and 1934, when exterior works including tinwork, design, painting, stonework, as well as woodwork were finalised.

The cornerstone was set by King Charles I in honour of the liberation from the rule of the Ottoman Empire. Ever since 1908 the vicar started the fundraising for building the church, for buying the land and for bringing the wood for the pillars used to stabilise the sandy terrain found on the Danube banks all the way from India.

In 1960 the roof was redone, the exterior ornaments were rehabilitated, and consolidation works for pillars and arches were performed. In 1975 several other works were carried out in the cathedral interior, the fresco painting being executed by Prof. Gh. Raducanu during 1976-1981.

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CONTENT

Designed as a modern interpretation of the tri-conic plane with three steeples, the cathedral is a monumental construction, symmetrical along the longitudinal axis, with a rectangular shape on the plane, 17.0 x 27.3 m, and a height in the maximum point of the steeple of over 26 m.

The body of the cathedral is preceded westward by an open church porch of small dimensions – 5.75 x 3.35 m, supported by two pairs of twinned stone columns and two other columns partially incorporated on the Western wall of the naos.

The general volumetry conveys the planimetric composition truthfully, setting off a first level, the highest, of the cross formed by the central nave and the short arm of the cross. At their intersection there is an over-heightened prism, standing as the basis of the central steeple. The other two smaller steeples, located over the median bay of the narthex, also have an over-heightened prism-shaped base, which intersects the body of the main nave. The central steeple has twelve facets, with as many windows distributed on height, while the two smaller steeples have eight facets each, with narrow windows. All of them are covered with spherical calottes, similarly rendered in the coverage system made of copper sheet.

A second level is that of the side naves and of the small apses, which flank the apse of the altar, all covered at the same level and subordinated to the main body of the church.

Finally, the lowest level is that of the church porch and portal, which mark the second access door, situated on the North side, toward the Danube esplanade.

The well balanced interior is formed of a spacious narthex (4.0 x 11.4 m), the naos and the altar flanked by the two small side rooms necessary for religious rites

The narthex is made of a central, taller nave, of 9.45 m, with the free width of 6.6 m, which is covered by a cylindrical dome, and two lower side naves of 9.45 m in height and 2.05m each in free width, covered in the same fashion.

This design was achieved by setting two rows of two pillars along the long axis of the room. The pillars have an octagonal cross-section and support the steel-lattice mast developed on top of the first bay from the entrance and on top of the side naves in the second bay. The rows formed of these octagonal pillars end with the two most developed pillars which mark the pass into the naos.

The intersection of the central nave with the transversal arm of the cross is marked by the location of the central steeple, which is supported by four square pillars with sides of 1.4 m, of which the two on the Western side stand free, and the other two are incorporated in the walls separating the apses from the altar and the naos.

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*Cathedral of St. Nicholas and ST. Alexander in Sulina*

The altar apse is semicircular on the interior and is relatively polygonal toward the exterior, as are the small apses that accompany it.

The other two apses of the naos, located Northward and Southward, respectively have a slightly elliptical inner curve, while on the exterior they are set in rectangular angles against the main body of the church. Moreover, the same uncoupling delineates the central nave and Westward, toward the open porch.

The access in the cathedral is ensured on the Western side, through the porch, located at around 0.8 m from the C.T.A. At the entrance there are two groups of stairs, from the North and from the South, made of Başchioi stone, as is the floor of the porch. Inside the cathedral, the floor is generally made of white marble, while in the altar and the pews area, the floor is made of oak parquet.

The pedestal, made of polished imitation stone in successive layers has a widened and, at the same time, relief shape, completely in line with the plastic design selected.

Both the porch and the portal on the Northern side of the cathedral, intended to mark the "protocol" access from the esplanade are accompanied by twinned columns, made of stone, with a slightly prismatic base, slightly decorated in the corner areas, ribbed and twisted, ending with composite capitals. Each of these columns supports an arch, northward and southward in the case of the porch and a wider, accolade arch, in the case of the portal and the Western side of the porch.

The profile of the upper part is marked by the presence of a fretted frieze with vegetal patterns and decorative medallions. The uniformly filled areas on the right and left of the arches are decorated with panels with floral ornaments made of imitation stone. Each has its own coverage system, wider in case of the porch and smaller in the case of the portal, but aligned at the same elevation of around 5.5 m from the floor level.

Due to some uninspired repairs, the colouring of this area was damaged, as blatant colours were used and clumsily added in the whole design

The main body of the cathedral formed of the central nave and the transversal arm of the cross is marked at the corners by several abutments, with elements connected to the pedestal and the upper part. Between these abutments, on the two side apses, three three-cusped dead archways were executed, of which the median one has a narrow window, decorated with a ledge, similar to the stone ones of Goleşti Monastery.

Above these archways there is a twisted moulding made of stone, over which the frieze decorated with vegetal elements and saint-depicting medallions can be found. These were made by D. Norocea, a fact which is registered in a medallion on the South-Eastern façade.

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Above this area, up to the overhanging eaves, two ornamental string-courses with pearls and triangular prisms, accompanied by various relief elements overlap.

The volumetry that marks the area of side naves and of apses resumes the ornamental motifs in a somewhat simplified manner, proposing as a solution for the wall binding area the presence of a pilaster to bind the dead arches together at the upper point. Above this level, bordered by the roof eaves and a median mounting, there is an in relief ornamental frieze, with vegetal motifs, made of a series of panels using a bicolour chromatic: beige decorations on Venetian red background.

The central steeple highlights the twelve windows by means of a window frame ending in the upper part with a centrally binding arch, under which both the narrow, tall window and the round one on top of it are found. Above these ornamental elements, there are several rows of profiles of denticulate type, pearl strings and dead archways, all repeating the arched shape of the window frames. Above these, following the same shape, there is a frieze decorated with vegetal elements, similar to the one found in the overhanging eave area of the main body of the church.

The eight-side secondary steeples have as many rectangular shaped windows with a centrally binded shaped arch-frame above a base with a sufficiently well pronounced linear profile, similar to the one encountered in the main steeple.

Above there is the same succession as in the case of the main steeple, with similar ornamental elements, excluding the frieze with vegetal motifs, which is replaced by one with prismatic motifs.

The cover is made of copper sheets brought from England in 1912. It is intended that the rehabilitation works follow in as much as possible the original appearance of the cathedral.

The three steeples are covered strictly observing the spherical calotte shape, with the side intersection lines decoratively highlighted.

The lower part of these calottes deal with the overhanging eave system by means of a new approach, proposing the use of copper sheet “gutter tiles” which discharge in stork-head discharge drains.

The window frames are metallic, of no particular value. However, the doors are made of copper tin with shaped frames. The windows are equipped with wrought iron latticework decorated with floral motifs.

In terms of the interior space, the planimetric composition is truthfully represented through the attention given to the central nave, through openness and height, being covered by a semi-cylindrical dome, as are the side naves of the narthex where the ceiling is reinforced with double arched supports in the pillar area. At the level of

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the lattice mast, the longitudinal arches between the pillars with octagonal cross-section partially intersect the semi-cylindrical dome of the collaterals, forming penetrations on half of the opening. Between the octagonal cross-section pillars and the perimeter walls, tie bars made of laminated profiles hidden under wooden panelling were introduced at the +4.0 m level.

In the naos the equal archways between the four well developed pillars supporting the main steeple are well expressed. The prismatic base of the steeple, with a height of 3.5 m, has three withdrawals in diameter, starting from 5.4 m down to 4.6 m, this latter value remaining the same on the whole height of the steeple. The two side apses with an narrow elliptical shape are covered with semi-cylindrical structures in the direction of the short arm of the cross and with fragments of the spherical dome.

The semicircular altar apse is covered in the interior by a semi-cylindrical dome in the direction of the central nave, which then turns into a spherical semi-calotte. The same type of ceiling is repeated in the case of the two smaller apses on the sides of the altar.

In 1981 the fresco paintings were finalised under the leadership of Prof. Gheorghe Răducanu. The entire surface of the walls, the arches and the dome ceilings was covered with established religious themes or with ornamental vegetal or geometrical motifs.

The supporting structure is made of brick masonry filled with good quality cement mortar, reinforced with Krupp Hoesch steel profiles brought from Germany.

The foundation was built on piles made of impregnated oak, set in groups all around the building contour. The piles were pounded using a mechanical pile driver in an area excavated under the minimum multi-annual level of the Danube. The distribution of the piles comprised the contour of the building, the separating walls, the portal and other heavy elements of the cathedral structure. A massive stone block comprising the whole height variation of the river level was built over the pile tops, joined with a binding piece made of oak plates. In order to prevent any possible compaction and collapse of the flooring, a general foundation plate was executed, made of stone enforced with concrete laid on the entire built surface. On top of this, the foundation itself was executed of stone joined using cement mortar.

The building survived many major earthquakes, such as those in 1934, 1940, 1977, 1986 and that of 1999.

The presence of the Danube in the immediate vicinity represents a risk factor, which influences the conservation state of the monument, both through the direct action of underground water, and through the specific microclimate factors involved.

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Technical expertise showed that there are fissures and cracks in the supporting structure, which are visible all around the facades, at the upper area of the windows.

The same damages can be also noticed inside the cathedral, in the arch key area in the narthex, the naos and the altar, above the windows, at the lower part of the naos dome, as well as in the semi- calottes of the three apses.

Also, there are areas with local deteriorations caused by old age or by maintenance shortcomings.

Due to the damage to the roof cover, to the gutters and drains, water infiltrates, generating dampness of the exterior walls on extensive surfaces, as well as the exfoliation of the ornaments and framing, the partial degradation of the cornices. The same damaging effect of water can be noticed at the pedestal level, where the porosity of the materials used and the lack of horizontal water-proofing favoured the ascension of soil water and the degradation of the interior and exterior plastering.

Consolidation works are planned in order to strengthen the system of horizontal and vertical connections incorporated in the masonry, by means of beams, belts, pillars, metallic incisions, as well as repairs and consolidation of the walls, dome ceilings and arches by partial rebuilding, fissure treatment and injection of fluid cement mortar 300 in the walls, and by metallic incisions.

The consolidation works will be accompanied by the restoration of architectural elements found in a high state of degradation, such as ornamental friezes, shaped frames around holes, saint depicting medallions made using the mosaic technique, relief shaped friezes and cornices. Fortunately, for each of these there are original control elements, kept in good condition, of high significance for the restoration work.

## CONCLUSIONS

By performing the above described operations, an increased degree of safety against earthquakes will be ensured, besides restoring the stylistical architectural integrity of the monument.

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